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Literacy development of low-achieving adolescents

The role of engagement in academic reading and writing

Worldwide many youth experience difficulties in understanding what they read and in producing comprehensible texts. These findings are alarming because youth need strong reading and writing skills to be successful at school, in future professions and as citizens of modern society. The observed difficulties call the literacy development of adolescents into question, and particularly of the lowest achievers. Do these students make progress through the secondary grades? And, what relevant differences in literacy development exist among them? To enhance our knowledge of this issue, the studies presented in this book are focused on the literacy development of low-achieving adolescents.

Low-achieving adolescents are students who are enrolled in the lowest tracks of secondary education and are not suffering from learning or behavioral disorders. Nevertheless, the students struggle considerably with academic reading and writing. In this book their values, thinking and behavior in relation to literacy at school are assessed. In addition, associations between these aspects of engagement and their literacy proficiency and development are explored.

In three studies 63 low-achieving students from 11 secondary schools in The Netherlands were observed from grades 7 to 9. Their perceptions and on-task behavior in classrooms were analyzed, as well as the nature of literacy activities they were engaged in, in language arts and social studies. Furthermore, two think-aloud studies into self-regulated reading and writing were performed providing an in-depth understanding of the repertoire of strategies available to low-achieving adolescents.

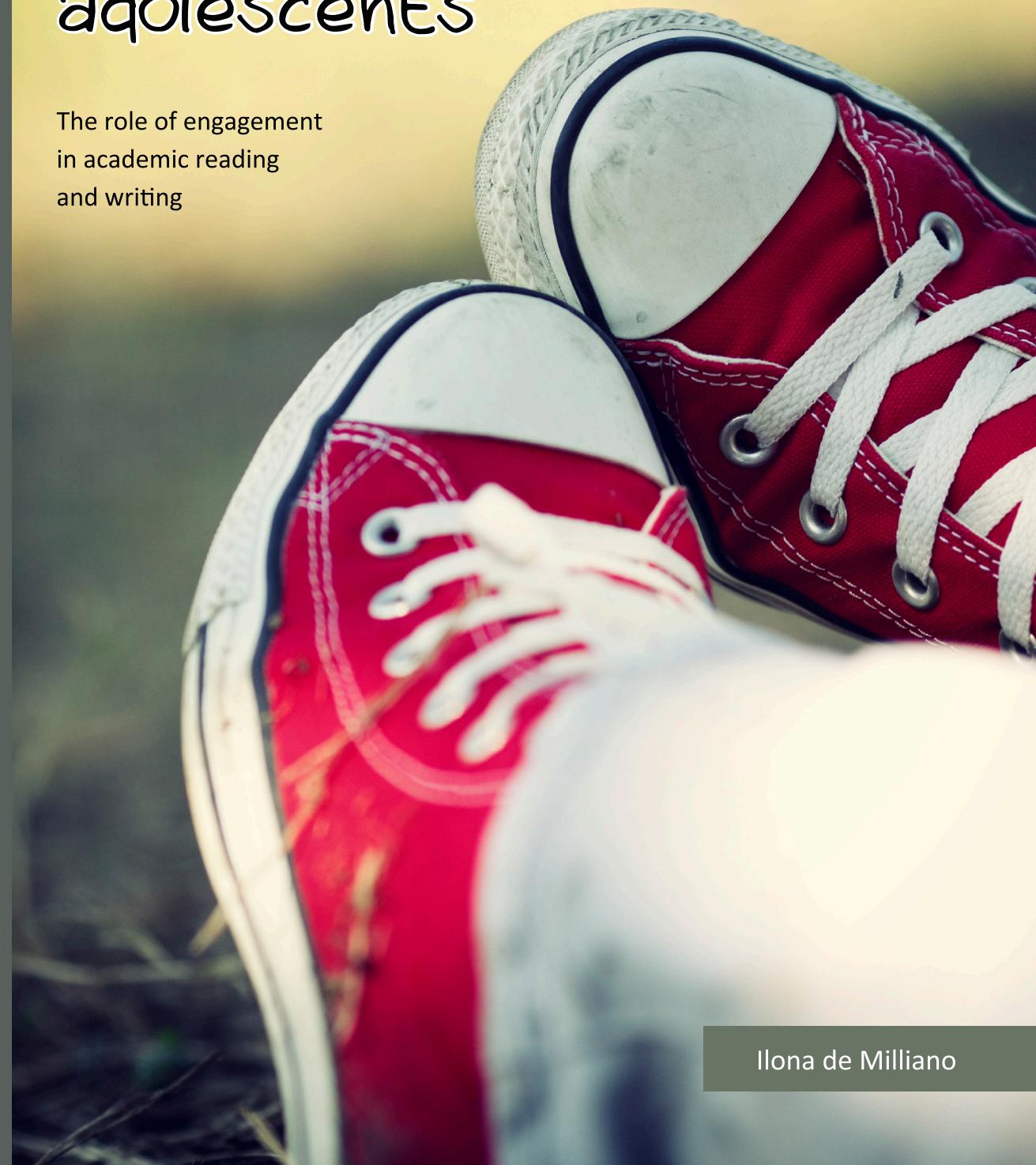
The results give unique insights in how low-achieving adolescents value and deal with challenging academic literacy tasks, the progression they make through the grades, and the differences that exist among them. They also suggest an agenda for instruction aiming at enhancing literacy development of low-achieving adolescents.

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Netherlands Organisation for Scientific Research

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Literacy development of low-achieving adolescents

The role of engagement in academic reading and writing

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Introduction

The issue of adolescent literacy development

Many people are concerned about the literacy abilities of youngsters. In education and at work many youngsters experience difficulties in understanding what they read and in producing comprehensible texts. Studies confirm that there is reason for concern. In many countries, a large part of the adolescents has difficulties reading texts at levels needed for the school curriculum and for future professions and citizenship (Alliance for Excellent Education, 2006; Baumert et al., 2001; Dagevos, Gijsberts & Van Praag, 2003; Hacquebord, Linthorst, Stellingwerf & de Zeeuw, 2004; Hofman, Spijkerboer & Timmermans, 2009; Inspectie van het onderwijs, 2008; Lempke et al., 2004; OECD, 2000; 2003; 2006). For Dutch adolescents, Hacquebord et al. (2004; 2007) found that at the entrance of secondary school about 20 to 30 percent of the students is not able to comprehend their textbooks adequately. In addition, Bohnenn et al. (2004) reported that students have much difficulty composing comprehensible texts when leaving secondary education. Especially, in the lowest tracks of Dutch secondary (prevocational) education problems with students' reading and writing are apparent. Research by the Dutch Inspectorate on Education (2008) and CITO (Wijnstra, 2001) show that particularly students in the two lowest tracks (*basisberoepsgerichte leerweg* and *kaderberoepsgerichte leerweg*) have severe literacy difficulties.

These findings are alarming since reading and writing are not only a pedagogical goal in itself, but also serve as a means for transfer of all content knowledge in schools. In other words, they are tools to accomplish a variety of goals, such as giving a report or expressing an opinion supported by evidence, and for extending and deepening students' content knowledge (Chall, 1996; Graham & Perin, 2007). Problems with reading and writing do not only have consequences for academic success in the language arts but also for academic achievement in content areas, such as history, social sciences, economics or geography (Alvermann, 2001). Difficulties with reading and writing may even lead to school dropout (Herwijer, 2008).

In addition, the explosion of digital communication in professional and everyday life brings reading and writing into play as never before. Even in practical professions such as chef, mechanic, nurse, shop assistant or security guard, - professions for which prevocational education prepares students - one needs to be able to communicate with different forms of written communication to be successful. Modern citizenship also demands quite advanced written literacy abilities. Think of taking out an insurance policy, negotiating a mortgage or making tax declarations. Finally, keeping in touch

with family, friends and relatives is currently almost impossible to imagine without (digital) written communication. Not surprisingly, literacy abilities are essential predictors of academic and professional success and are a basic requirement for successful participation in society as a modern citizen.

The gap between many youngsters' poor literacy abilities and the growing demands in school, workplace and community raises questions about the nature of literacy development of low-achieving adolescents. Do these adolescents make progress in reading and writing proficiency? Which factors promote or impede development of these skills? What relevant differences exist among the group of low-achievers in respect to their literacy development? Although a great deal of research has focused on reading and writing of heterogeneous groups of adolescents (Kamil, Pearson, Birr Moje & Afflerbach, 2012; McArthur, Graham & Fitzgerald, 2008), our current understanding of adolescents' literacy development is quite limited. An important reason is that studies hitherto mainly used cross-sectional designs. Few longitudinal studies have been performed yet. As a result, there is some insight in how students with good and poor literacy skills differ from each other, but there is little understanding of how students yielding more progression differ from students yielding less progression or from who stagnate. To expand our understanding of adolescents' literacy development, longitudinal research is needed that takes into account factors associated with both the level of literacy proficiency and its development. Therefore, this thesis explores factors underlying both literacy proficiency level and development in the course of three academic grades (grade 7 to 9)¹.

¹ This dissertation is part of a NWO special field of interest called studies into Adolescent Literacy of Students At-risk (SALSA, Dutch translation *Studie naar Achtergronden van Lees- en Schrijfontwikkeling bij Adolescenten*) in which potential promoting and impeding factors of literacy development of low-achieving adolescents are explored by in-depth longitudinal studies in three areas: the home environment, the school environment and with respect to students' individual skills and attributes. The project on the home environment examines the variety and role of literacy tasks enacted in the out-of-school contexts. The part project on individual skills and attributes investigated to what extent development of literacy skills of low-achieving adolescents with native Dutch and non-native Dutch backgrounds is associated with a various types of linguistic knowledge, fluency of linguistic skills and metacognition. In a cross-sectional study predictions about the most important factors are tested in a larger sample. More information about project SALSA can be found on:
<http://www.salsa.socsci.uva.nl>.

Low-achieving adolescents

Another important reason for our limited understanding of literacy development of low achieving adolescents is that research hitherto was directed at heterogeneous groups of adolescent students with broad ranges of proficiency (Retelsdorf, Kölle & Möller, 2011; Van den Bergh & Rijlaarsdam, 1999), disabled student populations (De La Paz, Swanson & Graham, 1998; Englert, Raphael, Fear & Anderson, 1988; Graham, 1997) or younger students in earlier stages of literacy development (Baker & Wigfield, 1999; Becker, McElvany & Kortenbruck, 2010; Guthrie et al., 2004; Guthrie et al., 2007; Taboada et al., 2009; Pressley, 2006). In heterogeneous samples important patterns emerging in the lowest achieving groups become indeterminable because they are obscured by the large differences between students. In addition, the combination of *low-achieving* and *adolescents* makes that findings from different or heterogeneous populations may not hold true for the particular situation of low-achieving adolescents. These students are in a special position, both educationally and psychologically, which makes generalizing insights from studies of younger, disabled or broad samples of adolescents to the situation of low-achieving adolescents hazardous.

For example, while young beginning readers and writers have much difficulty with technical aspects of reading (decoding and word identification) and writing (handwriting, spelling and sentence construction), most low-achieving adolescents read and write words on paper accurately (Alexander & Murphy, 1998; Biancarosa & Snow, 2006; Graham & Perin, 2007; Graham & Harris, 2012). Their most common problem is that they have difficulty in comprehending what they read and to compose texts that are comprehensible for other readers. Furthermore, it is often observed that adolescents are less involved in reading and writing than younger students. Strong declines in reading behavior are observed in early adolescence and among low-achieving students (Harter, Whitesell & Kowalski, 1992; Wigfield & Eccles, 2000). In addition, traditional modes of reading and writing face strong competition of new media literacy practices (Van Kruistum, Leseman & De Haan, in prep) and leisure time activities such as surfing the Internet, watching television, gaming, sports and hanging out with friends (Land, Van den Bergh & Sanders, 2007; Wilson & Casey, 2007). Furthermore, adolescents undergo major physical and mental changes. One important change is that students get more control over their cognitions when they grow older, particularly between 10 and 12 years old (Inhelder & Piaget, 1958; Alexander, Jetton & Kulikowich, 1995; Veenman et al., 2006).

With the transition of primary school to secondary school (in The Netherlands at grade 7) the situation of low-achieving students' changes considerably. Their world expands literally and figuratively. With the change of school, they start exploring the

world outside the familiar boundaries of home and neighborhood. In secondary education, they have to deal with many new subjects and instructions by teachers who are specialized in their own subject domain. In the Netherlands, students are enrolled in a school track adjusted to their abilities and needs at secondary school entrance. In contrast to primary education, the students are surrounded by classmates with more or less comparable abilities and needs, and have learning materials, teachers and curriculum goals that take their poor literacy skills into account.

Moreover, literacy tasks in secondary education becomes increasingly diverse, long and complex. Informative and expository text genres are more common than narratives and students are expected to coordinate multiple text sources (Fang & Schleppegrell, 2010). The more challenging and rewarding literacy practices in the secondary school years require that students go far beyond the literacy skills of the elementary grades. They need to become skilled in reading purposefully, select materials that are of interest, learn from those materials, figure out the meanings of unfamiliar words, integrate new information with their background knowledge, resolve conflicting content in different texts, differentiate fact from opinion and recognize the perspective of the author. In brief, they need to aim at deep text comprehension instead of achieving a basic understanding of texts (Biancarosa & Snow, 2006; Graesser, 2007). In regard to writing, students need to produce different types of written documentation. This is a challenging task, demanding for a complex integration of knowledge and skills: strategies to regulate the writing process, skills to formulate correct sentences, and knowledge about specific genres and writing conventions. Moreover, they need to adapt their writing flexibly to the contexts for which the texts are produced (De La Paz & Graham, 2002; Graham & Perin, 2007).

Early adolescence is thus a turbulent period because of several socio-emotional changes involving the forming of new identities with possible consequences for participation at school and the development of literacy abilities (Alexander et al., 1995; Bronfenbrenner & Morris, 1998). Despite that low-achieving adolescents as a group, may have a lot in common, important differences among this group of students may be expected as well. Students increasingly show differences in ability, self-beliefs and exerted effort in academic activities from early adolescence on (Nicholls, 1990; Stipek, 1998). Therefore, this study is focused on relevant differences in literacy development within the group of low-achieving adolescents. This thesis is specifically directed at the large group of students who are enrolled in the two lowest school tracks of prevocational secondary education, who are not suffering from learning or behavioral disorders but nevertheless have severe difficulties with forms of written communication.

Engagement in academic reading and writing

School has a primary concern in the development of written literacy abilities. While students already can speak and listen at primary school entrance, most of them cannot read or write yet when entering formal education. In contrast, reading and writing are complex skills that develop through the school years and far beyond. This thesis is focused at what educational factors can explain differences in literacy development.

The aim of this thesis is to deepen our insights in the impact of motivational and educational factors on literacy proficiency and development of low-achieving adolescents. In search of understanding factors related to academic success, the concept of students' engagement in academic tasks has received increasing interest in recent years. Definitions of engagement emphasize that it is a multidimensional construct including affective engagement, cognitive engagement and behavioral engagement (Appleton, Christenson & Furlong, 2008; Baker & Wigfield, 1999; Fredricks, Paris & Blumenfeld, 2004; Furlong et al., 2003; Guthrie, Wigfield & You, 2012; Linnenbrink & Pintrich, 2003; Skinner, Marchand, Kindermann & Furrer, 2008). Affective engagements refers to students' feelings and emotional reactions to an academic task or school in general, their beliefs about the ability to perform an academic task and beliefs about the importance and utility of academic tasks. Cognitive engagement refers to students' willingness to exert mental effort needed to perform challenging academic tasks as well as the use of self-regulatory strategies to guide one's task execution. Behavioral engagement refers to the actual participation in academic activities at school. In other words, engagement is a multidimensional construct capturing the quality of students' feelings, thoughts and behavior concerning a more or less specified object, such as school, learning or literacy. In this definition, engagement is viewed as the interplay between students and their learning environment and consists of affective processes, cognitive strategies and actual behavior in the classroom.

In this thesis, the construct of engagement is used for exploring motivational and educational factors that may explain literacy development of low-achieving adolescents. Multiple aspects of the three engagement facets are selected from the literature about reading and writing proficiency. For a fairly long time researchers in the field of reading and writing have focused on the cognitive processes that students are engaged in. Studies show that differences in the way students regulate their reading and writing processes are related to differences in text comprehension (Baker & Brown, 1984; Pearson, Roehler, Dole & Duffy, 1992; Pressley, 2000) and the quality of texts written (Bereiter & Scardamalia, 1987; Graham, 2006; Van den Bergh & Rijlaarsdam, 1999). Since reading and writing are cognitively demanding activities students can choose to do or not, success in these activities seems also determined by

motivational processes. Therefore, interest in the role of affective processes in reading and writing emerged over the years (Baker & Wigfield, 1999; Hayes, 1996; Guthrie & Wigfield, 2000; Zimmerman & Risemberg, 1997). In addition, the expectancy-value framework of academic motivation (Wigfield & Eccles, 2000; Eccles, 2005) assumes that students' confidence in their own proficiency (efficacy beliefs) and their affective reactions (task values) influence students' performance on literacy tasks. Furthermore, it is emphasized that students must actually participate in reading and writing activities to benefit from education (Fredricks et al., 2004; Pressley, et al., 2001; Greenwood, Horton & Utley, 2002). Therefore, students' participation in literacy activities at school has been added to the list of relevant predictors of literacy development. In this thesis, students' use of strategies for self-regulation in reading and writing tasks (cognitive engagement), their efficacy beliefs and task values related to literacy tasks (affective engagement), and their time-on-task behavior in literacy activities in the classroom (behavioral engagement) were investigated.

Students' engagement in academic tasks is assumed to be responsive to variation in learning contexts and the learning opportunities and tasks offered in the classroom (Finn & Rock, 1997). Therefore, we give special attention to the contexts in which literacy activities are enacted at school. Reading and writing are activities that are not limited to the language arts curriculum but are also enacted across disciplines involving different purposes, forms and processes (Applebee & Langer, 2006; Kiuhara, Graham & Hawken, 2009; Van Gelderen, 1994). In the language arts, literacy practices mainly focus on improving literacy skills, while in the content areas literacy practices are instrumental for acquiring knowledge about subject contents. This thesis, therefore, pays attention to two different subject domains: language arts and social studies. For both domains, the types, contents and ways literacy activities are addressed are explored. Focal points for this exploration are informed by prominent theories of language and literacy learning, such as Content-Based Language Learning (Brinton, Snow & Wesche, 1989; Bygate, Skehan & Swain, 2001; Hajer & Meestringa, 2004), Concept-Oriented Reading Instruction (Guthrie & Wigfield, 2000; Guthrie et al, 2004; Wigfield et al., 2008), Self-Regulated Strategy Development (Graham & Harris, 1993), and Balanced Literacy Instruction (Pressley, 2006; Langer, 2001).

In addition, special attention is paid to a detailed analysis of students' approach of academic reading and writing tasks similar to the literacy tasks they encounter in their school curriculum. These detailed analyses do not only yield in-depths insights in the repertoire of strategies available to low-achieving adolescents for dealing with the challenges of such literacy tasks, but also reveal pathways for education to enrich this repertoire of strategies of low-achieving adolescents.

Outline of the thesis

In this thesis five studies are reported that are clustered in three parts. In chapters 1 and 2, associations between reading and writing proficiency and development with the distinguished aspects of engagement are analyzed (Part I). Chapter 3 reports our analyses of the relations between literacy learning contexts in language arts and social studies lessons with literacy development (both reading and writing) (Part II). Finally, chapters 4 and 5 zoom in on patterns of cognitive self-regulation in relation to reading and writing task performance (Part III).

Part I

The role of engagement in academic reading and writing

Chapter 1

Reading comprehension proficiency and development: the roles of affective, cognitive and behavioral engagement in the classroom²

In search of ways to increase academic success of low-achieving adolescents, this longitudinal study explored the roles of affective, cognitive and behavioral engagement in reading comprehension proficiency and development of a group of 63 students. In the course of grades 7 to 9 students' self-efficacy beliefs, intrinsic values, utility values, reported effort and reported self-regulation were investigated. In addition, the time students were on-task in literacy activities in language arts and social studies was coded. Furthermore, students' reading comprehension was measured in each grade. Intrinsic value and behavioral engagement in social studies explained differences in reading comprehension among low-achieving adolescents, whereas self-efficacy beliefs, utility value, reported effort, reported self-regulation and behavioral engagement in language arts did not. More importantly, the study shows that although the adolescents in our study are low-achieving; they improve significantly in reading comprehension proficiency from grade 7-9. However, not all low-achieving adolescents progressed to the same extent. Although engagement is regarded as an important predictor of reading proficiency in the literature, none of the affective, cognitive and behavioral engagement aspects investigated could explain differences in reading development among low-achieving adolescents in a meaningful way. Theoretical and practical implications of this study are discussed for a better understanding of the role of engagement in low achieving adolescents' literacy development.

² This chapter is based on:

De Milliano, I., Van Gelderen, A., Sleegers, P., Van Schooten, E., (under review). Reading comprehension proficiency and development of low-achieving adolescents: the roles of affective, cognitive and behavioral engagement in the classroom.

1.1 Introduction

Adolescents need to acquire sufficient reading comprehension skills to participate successfully as students and citizens in school and life (Alvermann, 2001; Biancarosa & Snow, 2006). Yet, studies have indicated that many adolescents have difficulties in comprehending texts at levels required by the school curriculum and from the view of future professions and citizenship (Alliance for Excellent Education, 2006; Baumert et al, 2001; Inspectie van het Onderwijs, 2008; Hofman, Spijkerboer & Timmermans, 2009; OECD, 2000; Olson, 2006). Although a great deal of research has examined factors that enhance reading comprehension (Baker & Brown, 1984; Pearson, Roehler, Dole & Duffy, 1992; Pressley, 2000; Oakhill & Cain, 2007; Van Gelderen, Schoonen, Stoel, De Glopper & Hulstijn, 2007; Vidal-Abarca, Mañá & Gil, 2010), few studies have focused on the group of low-achieving adolescents, adolescents who are not disabled but still have difficulties with text comprehension (Guthrie, Wigfield & You, 2012). As a consequence, there is little understanding of what differences exist within this group of low-achievers and which educational (e.g. instruction, curriculum), psychological (e.g. knowledge, engagement) and personal background factors (e.g. gender or ethno-linguistic background) improve reading comprehension and facilitate development in reading comprehension of these low-achieving adolescents. One concept that recently has received increasing attention as a possible important predictor of reading comprehension and learning is the concept of engagement. In this study, we focus on low-achieving adolescents' engagement in reading in school contexts in relation to the level and the development of their reading comprehension proficiency.

Engagement is defined as students' feelings, thoughts and behaviors concerning a more or less specified object, such as school, learning or reading (Appleton, Christenson & Furlong, 2008; Fredricks, Blumenfeld & Paris, 2004; Guthrie et al., 2012; Linnenbrink & Pintrich, 2003). Research has shown that students' involvement in school and learning decreases throughout the years. The strongest declines are observed in early adolescence and among low-achieving students (Archambault, Eccles & Vida, 2010; Durik, Vida & Eccles, 2006; Eccles, Wigfield & Schiefele, 1998; Harter, Whitesell & Kowalski, 1992; Jacobs et al, 2002). In addition, studies suggest that differences between students in ability, motivation and effort in school work increase in early adolescence (Nicholls, 1990; Stipek, 1998). This period of personal development is often described as turbulent because of school transition (from primary to secondary) and several socio-emotional changes related to the forming of new social identities with consequences for participation in school and for literacy, including reading (Anderman & Maehr, 1994; Ramey & Ramey; 1994). As reading

becomes increasingly demanding through the grades (Fang & Schleppegrell, 2010), engagement in carrying out reading activities in the classroom may be important for reading development (Guthrie et al., 2012). By focusing on active engagement in the classroom, this study aimed to make a contribution to the existing knowledge base on reading comprehension development and the role of engagement of low-achieving adolescents.

1.2 Theoretical background

1.2.1 Engagement

Contemporary definitions of engagement emphasize that engagement is a multidimensional construct, including affective engagement, cognitive engagement and behavioral engagement (Appleton et al., 2008; Fredricks et al., 2004; Guthrie et al., 2012; Linnenbrink & Pintrich, 2003). Affective engagement refers to motivational factors, including students' feelings and emotional reactions to a task or school in general, their beliefs about the ability to perform a task and subjective values about the importance and interest of the task. Cognitive engagement refers to students' willingness to exert mental effort needed to perform challenging academic tasks as well as the use of self-regulatory strategies to guide one's cognitive efforts. Behavioral engagement refers to the active participation of students in academic activities in the classroom. In this definition, engagement is considered to be determined by motivational processes, cognitive strategies and active behavior. Affective engagement is what energizes students' behavior, whereas behavioral engagement indicates whether students are actually engaged. Cognitive engagement indicates the depth of students' engagement (the degree of cognitive effort invested). In this study, we used this multidimensional construct of engagement to examine students' motivation, their cognitive efforts and actual behavior towards reading *within* their classrooms.

1.2.2 Affective engagement

In analyzing the role of engagement in reading, Guthrie and Wigfield (2000) have developed the engagement model of reading comprehension. According to this model, engagement in reading is the functioning of motivational processes and cognitive strategies during reading comprehension. Highly engaged readers are internally motivated to read and strategic, while reading frequently and deeply. Consistent with this perspective, we propose that affective engagement in reading refers to motivational processes during reading comprehension. Guthrie and Wigfield (2000) defined reading motivation as "the individual's personal goals, values and beliefs with regard to the topics, processes and outcomes of reading" (p. 405). It is often assumed that students' beliefs about their ability to perform a task (self-efficacy) and their

subjective values about the relevance and importance of the task (subjective task values) influence students' effort, persistence and performance on the task (Wigfield & Eccles, 2000). Accordingly, motivation for reading may not only lead to increased academic achievement and improved learning, but also to growth in skills over time as students who are motivated tend to put more effort in learning. In examining students' affective engagement in reading proficiency and development, we, therefore, focus on two of the most studied motivational components of reading motivation; self-efficacy and subjective task values.

Self-efficacy for reading is a person's belief in the ability to effectively complete reading tasks (Bandura, 1997; Chapman & Tunmer, 1995), whereas subjective task value is a complex composite comprising attainment values, intrinsic values, utility values and costs (Eccles, 2005). Students' beliefs of their abilities and their subjective values of reading have been shown to be related to their selection of activities, the level of commitment and performance (Anmarkrud & Bråten, 2009; Baker & Wigfield, 1999; Chapman, Tunmer & Prochnow, 2000; Greene, Miller, Crowson, Duke & Akey, 2004; Guthrie, Wigfield, Metsala & Cox, 1999; Guthrie et al., 2007; Katzir, Lesaux & Kim, 2009; Wang & Guthrie, 2004). Students tend to participate, persist in reading while facing difficulties and achieve well in reading when they find reading important, relevant and believe they can succeed in it. In addition, students with high self-efficacy beliefs and high task values for reading use strategies that foster deep and internalized text processing, whereas students lower on these measures show less use of these strategies (Schiefele, 1999; Schraw & Lehman, 2001).

Although findings of different studies suggest that self-efficacy and subjective task values are important predictors for reading comprehension proficiency at a given moment in time, less is known about the relationships between these predictors of affective engagement and reading comprehension development. Only a few longitudinal studies have been conducted so far. For elementary students, Becker, McElvany and Kortenbrück (2010) and Taboada, Tonks, Wigfield & Guthrie (2009) found that students' subjective values are positively associated with reading growth. Guthrie et al. (2007) found that interest, efficacy and involvement measured by interviews predicted reading comprehension growth, but that the same constructs measured by self-report questionnaires did not. For adolescents, Retelsdorf, Köller & Möller (2011) found positive unique effects of reading interest (personal topic interest) and reading enjoyment (activity-related interest) on reading comprehension proficiency and on reading comprehension development. Longitudinal studies into self-efficacy and the relation with reading comprehension development did not give credence for the assumption that self-efficacy affects growth (Aunola, Nurmi, Niemi, Lerkkanen & Rasku-Puttonen, 2002; Chapman & Tunmer, 1997; Guthrie et al., 2007;

Retelsdorf et al., 2011). By examining the relation between self-efficacy and subjective task values as indicators of affective engagement on the one hand and reading comprehension proficiency and development among low-achieving adolescents on the other hand, we intend to determine whether affective engagement is a factor not only associated with the current level of reading comprehension but also with growth in reading comprehension.

1.2.3 Cognitive engagement

Cognitive engagement refers to the use of cognitive strategies during reading as well as students' willingness to exert mental effort to foster deeper understanding of the text. Highly engaged readers are not only more motivated but also show more use of strategies for comprehending the text fully and are willing to exert additional effort in reading (Guthrie et al., 2004; Wigfield et al., 2008). Engaged readers are strategic readers using such strategies as rereading, predicting, questioning, summarizing, clarifying and rereading. The application of these strategies for executing and coordination the reading process are referred to as self-regulation (Duke & Pearson, 2002; Pressley, 2000; Zimmerman & Risemberg, 1997). A great deal of research has been done showing how readers of diverging proficiency process a text and achieve text comprehension (Baker & Brown, 1984; Duke & Pearson, 2002; Pearson et al., 1992; Oakhill & Cain, 2007; Trabasso & Bouchard, 2002; Vidal-Abarca et al., 2010). Together, the findings suggest that better readers are more strategic than poorer readers. Readers who monitor and direct their reading more intensively achieve deeper levels of text comprehension. Most low-achieving adolescents can read words accurately, but have problems with deep levels of comprehension as a result of knowledge deficits (vocabulary, grammar, metacognitive knowledge, genre and conceptual knowledge) and difficulties with self-regulation. Low-achieving readers are found to be primarily focused at achieving a basic understanding of the literal meaning of the text (Chambers Cantrell, Almasi, Carter, Rintamaa & Maden, 2010; Rapp, Van den Broek, McMast, Kendeou & Espin, 2007). However, to achieve text comprehension a reader must construct a so-called 'situation model' by connecting the text contents to prior knowledge (Kintsch & Van Dijk, 1978). This requires the expenditure of mental effort for the use of several strategies that assure that these connections result in a meaningful text representation. Especially for low-achievers this may be a very hard task, given their poor knowledge of both conceptual and linguistic issues. On the other hand, self-regulation of low-achieving students is no lost cause as research findings suggest that developing readers gain more knowledge about reading strategies over time and that instruction directed at self-regulation can enhance reading skills, especially of low-achieving students (Alfassi, 2004; Edmonds et al., 2007; Fisher,

Schumaker & Deshler, 2001; Guthrie & Taboada, 2004; Palinscar & Herrenkohl, 2002). Based on these findings, we assume that low-achieving students' who put more effort in reading and who use more self-regulative activities, will perform better in reading and will obtain more progression in reading proficiency over time.

1.2.4 Behavioral engagement

Behavioral engagement refers to the extent to which students are actually performing academic tasks, including attending to and completing tasks responsibly, following rules and instructions, and exercising self-control (Cameron Ponitz, Rimm-Kaufman, Grimm & Curby, 2009). Behavioral engagement is students' participation in a set of learning opportunities and tasks as offered by the teacher in the classroom. Students' behavioral engagement in academic activities is viewed as an important predictor of academic achievement as students' participation in academic activities is a prerequisite for learning (Fredricks et al., 2004; Pressley, et al., 2001; Greenwood, Horton & Utley, 2002). Studies conducted in kindergarten and elementary schools (Berliner, 1979; Dolezal, Welsh, Pressley & Vincent, 2003; Guthrie et al., 2012; Hughes & Kwok, 2007; Ponitz, McClelland, Matthews & Morrison, 2009) have shown that behavioral engagement in the classroom is positively related to reading achievement. In their longitudinal study, Ladd and Dinella (2009) examined the effect of behavioral engagement of students (5 to 13 years old) on a variety of reading achievement tests. The findings showed that, while statistically controlling for reading achievement in grade 1, the reading development of more engaged students improved more than for less engaged students. In this study, we therefore, examined the impact of low achieving students' behavioral engagement during reading practices in the classroom on their reading comprehension proficiency and development.

Given the fact that engagement is assumed to be responsive to variation in learning contexts and the learning opportunities and tasks offered by teachers in classrooms (Finn & Rock, 1997), we paid attention to the context in which reading activities are enacted in the classroom. Reading is an activity that is not limited to the language arts but is also enacted across varying disciplines involving different purposes, forms and processes (Biancarosa & Snow, 2006; Van Gelderen, 1994). In the language arts, reading practices mainly focus on increasing reading comprehension proficiency, whereas in content areas reading practices are instrumental for obtaining knowledge about subject contents. We, therefore, focused on two different subject domains: language arts and social studies. Consistent with the engagement perspective, we assume that the behavioral engagement is different for the two subject domains.

1.3 The present study

Research on reading engagement has indicated that affective, cognitive and behavioral dimensions of engagement are important predictors for reading comprehension proficiency. Much less evidence is available concerning the relationships between these dimensions of engagement and reading *development*, as few longitudinal studies have been performed yet. Moreover, these studies have focused on affective engagement only. There is empirical evidence suggesting that better readers are more engaged than poorer readers. However, especially for the group of low achieving adolescents it is of importance to know to what degree their affective, cognitive and behavioral engagement in reading at school contributes to their reading comprehension. It is yet unknown whether there are differences between these low achievers in the role that different types of engagement play in reading comprehension. In addition, it is also unknown to what degree their engagement in reading at school contributes to their reading comprehension growth.

There is a need for reading research that focuses on low-achieving adolescents (Guthrie et al., 2012). Our current understanding of reading engagement is based upon research primarily directed at students with broad ranges of proficiency and at young and beginning readers. In such populations, patterns emerging in the lowest achieving groups are obscured by the large differences between students. Therefore, findings from these types of reader populations may not hold true for the particular situation of low-achieving adolescents (Baker & Wigfield, 1999; Logan, Medford & Hughes, 2011). Insights in differences that exist among low-achieving adolescents are necessary to understand how education can improve low-achieving adolescents reading comprehension in a way that fits students' individual skills and attributes. Therefore we explored affective, behavioral and cognitive dimensions of engagement in reading of low-achieving adolescents following them from grades 7-9 in relation to their reading comprehension proficiency level and development of reading comprehension across these 3 grades. The following questions were addressed:

- 1) How are affective engagement, cognitive engagement and behavioral engagement related to reading comprehension proficiency of low-achieving adolescents?
- 2) Do low-achieving adolescents progress in reading comprehension proficiency from grades 7 to 9?
- 3) Do affective, behavioral and cognitive engagement contribute to explaining differences in reading comprehension development of low-achieving adolescents?

1.4 Method

1.4.1 Participants

Low-achieving adolescents are defined in this study as students in the lowest 30-percentile of academic skills as measured by an aptitude test measuring language, reading and mathematics skills prior to admission of Dutch secondary education. In the Netherlands, these low-achieving students are enrolled in the two lowest tracks of prevocational secondary education³. The sample in grade 7 involved 63 students (36 boys and 27 girls) recruited out of 10 classes from 9 different ethnically mixed schools. In grade 7 the students were between 12 and 14 years old ($M=14.7$). Of the sample in grade 7, 32 students were native speakers of Dutch; the other 31 students were non-native speakers of Dutch having various ethnic-linguistic backgrounds. Students diagnosed with a learning or behavioral disorder (e.g. dyslexia, ADHD), were excluded from our sample in order to ascertain that differences in reading development were not related to specific learning or behavioral disorders. From each class 6 to 7 students were selected. Due to attrition (e.g. illness, moving, problems at home or school), the number of participating students decreased in the course of our study. On the other hand, because of mobility of students, the number of classes and schools involved in the study increased. Ultimately, the sample consisted of 52 students distributed over 28 classes and 11 schools in grade 9.

1.4.2 Measures

1.4.2.1 Reading comprehension proficiency

The SALT reading comprehension proficiency test (Van Steensel, Oostdam, & Van Gelderen, 2012.) was specifically designed for Dutch students in the lowest tracks of secondary education. It consists of nine tasks comprising one or two texts and comprehension questions about those texts (multiple choice and short-answer formats). The texts cover four different genres: narrative, argumentative, expository, and instructive. They were selected from four media types which students are likely to come across in their daily lives: (school) books, newspapers and magazines, official documents, and the internet. With respect to text format, a distinction was made between continuous texts and discontinuous texts (containing also graphs, pictures

³ Regular secondary education in the Netherlands is divided into three tracks: prevocational secondary education (VMBO), senior general secondary education (HAVO), and pre-university education (VWO). Prevocational education is further divided into four tracks: the basic vocational program, the middle-management vocational program, the combined program, and the theoretical program (Ministry of Education, Culture and Science, 2006).

and figures). The topics of the texts were selected on the basis of their relevance for students' socio-cultural and educational reality. They cover personal issues (negative stereotyping, self-confidence), school subjects (history), human interest, social issues (crime, the environment), rules and regulations, and leisure time activities. The test items were based on the distinction between lower, intermediate and higher levels of understanding, labeled as 'retrieving', 'interpreting', and 'reflecting', respectively (Van Steensel et al., 2012; OECD, 2003). The test consisted of 65 items and the Cronbach's alpha was .79 in grade 7, .85 in Grade 8 and .82 in grade 9. Next, a sum score representing reading comprehension proficiency across grades 7 to 9 was computed. The measurement of reading comprehension proficiency across grades shows good reliability (Cronbach's alpha is .90).

1.4.2.2 Engagement

Affective and cognitive engagement were measured using questionnaires. To assess affective engagement, an adapted version of the Attitude Scale towards English as a school subject developed by the Dutch Institute of Testing (CITO) was used. For the purpose of this study, the questions were adapted to reading and writing. Half of the items concerned reading and half of the items concerned writing.

Three aspects of affective engagement were assessed (10 items for each aspect): 1) self-efficacy (e.g. "I am good at reading"), 2) intrinsic value (e.g. "I enjoy reading"), 3) utility value (e.g. "Reading proficiency is important to get a job"). Students were asked to indicate the extent to which the item referring to the three aspects of affective engagement applied to them on five-point scales (1=not at all true; 5=very true).

Two aspects of cognitive engagement were assessed: 1) reported effort (10 items, adapted from the above mentioned attitude questionnaire; e.g. "I exert additional effort to become a better reader") and 2) reported self-regulative behavior in reading and writing (33 items). The strategies represent the self-regulatory activities generally distinguished in the literature: orientation, planning, monitoring, controlling, testing and evaluation. The reading items (16 items; e.g. "While I'm reading, I check whether I still comprehend what I'm reading.") are based on previous research into metacognitive knowledge relevant for reading (Baker & Brown, 1984; Pressley, 2000), the writing items (17 items; e.g. "While I'm writing, I consider whether my audience will comprehend what I mean.") were based on cognitive models for writing (Bereiter & Scardamalia, 1987; Hayes & Flower, 1980; Hayes, 1996). Students were asked to indicate how often they apply a range of reading and writing strategies on a three-point scale (0=seldom to 2=frequently).

The internal consistencies of the five scales for affective and cognitive engagement were established in each grade (7 to 9). The internal consistencies were found to be adequate to good in all cases (.76< Cronbach's alpha >.89). Next, for each of the five scales a sum score representing the scores across grades 7 to 9 was computed. The measures of affective and cognitive engagement have quite satisfactory reliabilities across grades (Cronbach's alpha is .78 for Self-efficacy, .84 for Intrinsic value, and .75 for Utility value, .84 for Reported effort, .82 for Reported self-regulation).

To measure students' behavioral engagement in classroom activities, real-time observations were conducted in regular lessons of Dutch language arts (LA) and lessons in social studies (SS). For each student we observed two lessons per subject per grade, resulting in an average of 12 hours per student. During classroom observations, two aspects were coded every ninety seconds for every student in the sample (1 to 7 students per class). The first aspect coded repeatedly was whether the lesson was directed at *Literacy Activities* (e.g. text reading, reading strategies, vocabulary, grammar and spelling). The second aspect coded was whether the target student was *On-Task* (e.g. working on a problem, answering a question, listening to the teacher or a classmate making an on-task contribution). Since the duration of lessons varied over schools, the observations time differed for individual students. Therefore we corrected the time-on-task scores for observation time by dividing the time that students spent in a particular literacy activity by the total time students were observed. Next, the time that students were on task in the particular literacy activity was multiplied with this quotient⁴. Of the 167 hours of real-time observation, 8 hours were coded simultaneously by two observers. This means that 267 segments of 1.5-min each were coded twice (5% of a total of 6.680 segments). To estimate inter observer-reliabilities we calculated Cohen's kappa. For Literacy Activities kappa was .89, for On-Task behavior kappa was .80. These reliabilities are sufficient for our research purposes. Next, sum scores representing behavioral engagement in language arts and social studies across grades 7 to 9 was computed. Low correlations between grades were found. However, given the situated nature of behavioral engagement in actual classroom behavior, this is not surprising and did not prevent us from averaging the scores over grades as an approximation of students' being on task in literacy activities.

⁴An example of how the scores were corrected for observation time. Student 1's time-on task in literacy activity = time observed: 50 minutes; time spent in literacy activity: 30 minutes; time on-task in literacy activity: 15 minutes = $(30/50)*15 = 9$ minutes. Student 2's time on-task in literacy activity = time observed: 100 minutes; time spent in literacy activity: 30 minutes; time on-task in literacy activity: 15 minutes = $(30/100)*15 = 4.5$ minutes.

1.4.3 Procedures

The reading comprehension test was administered in the spring semester in each of the three grades in three 45-min sessions. No more than two sessions per day were scheduled to minimize test weariness. Eight tasks were paper- and pencil assignments; the internet task was administered on a computer. The questionnaires were administered in each of the three grades in the fall semester in one 45-min session. Finally, for each subject (LA and SS) in each grade one lesson in the fall semester and one lesson in the spring semester were observed. The reading comprehension test was conducted in students' classrooms during the school day and administered by trained research assistants. The students' teacher was always present to maintain order. The questionnaires were administered by trained research assistants in separate group sessions during the school day. Student's questions were answered by the test leaders according to a standardized protocol.

1.4.4 Missing data

Of our dataset 8.7 % was missing due to attrition. EM estimation was used to estimate and impute the missing data on the dependent variable (reading comprehension). For the independent variables (indicators of engagement), we averaged the scores that were obtained through the grades. As a check, all analyses were conducted both with and without imputed missings. In all analyses the patterns were similar.

1.4.5 Statistical analyses

Because the 63 students taking part in this study originally were selected from 10 different classes from 9 different schools⁵, we checked whether multi-level analyses were necessary by means of the program MLwiN (Rasbasch et al., 2000). Results from the multi-level analyses showed that adding a class level to the student level did not result in a significant improvement of the model fit. Therefore, all analyses were done uni-level. First, means and standard deviations were computed for all variables for the whole sample. To examine the relationships with reading comprehension level, correlations and effect sizes were computed for all engagement variables with average reading comprehension in grades 7 to 9. Students' development in reading proficiency was examined using GLM for repeated measures. Finally, for examining effects of engagement on reading comprehension development, we used reading comprehension obtained in grade 7 as covariate in explaining reading comprehension in grade 9. We did not use change scores to analyze development, since several studies

⁵School and class level practically coincide in this study, since 10 classes come from 9 different schools, so testing for a school level next to a class level is not feasible.

have shown the regression approach to be superior (Allison, 1990; Pike, 2004; Senn, 2006; Tu, Gunnell & Gilthorpe, 2008). The effects of engagement on development were explored for each of the three time spans: grade 7 to 8, grade 8 to 9, and grade 7 to 9.

1.5 Results

1.5.1 Descriptive results

Table 1.1 Means (standard deviations) of the study variables (N=63)

	Scale	Mean (SD)
Self-efficacy	1-5	3.85 (.50) ^a
Intrinsic value	1-5	3.00 (.72) ^a
Utility value	1-5	3.94 (.47) ^a
Reported effort	1-5	3.15 (.68) ^a
Reported self-regulation	0-2	1.00 (.26) ^a
Language arts		
Time spent	-	40.4 (12.8) ^b
Time-on-task	-	32.1 (11.7) ^b
Social studies		
Time spent	-	29.6 (15.5) ^b
Time-on-task	-	22.3 (10.4) ^b
Reading comprehension proficiency grade 7	0-65	40.5 (7.7)
Reading comprehension proficiency grade 8	0-65	42.6 (8.8)
Reading comprehension proficiency grade 9	0-65	46.7 (8.1)

- a) These scales are calculated as the average of the average scores on the scales in each of the grades 7, 8 and 9.
- b) These means are the average of the average time observed in two lessons in each of the grades 7, 8 and 9.

The means in Table 1.1 indicate that the students on average have quite some confidence in their literacy abilities and perceive literacy activities in school as quite useful. This is indicated by the average scores for self-efficacy and utility value, being close to 4 on the scale ranging from 1 (not at all) to 5 (very much). Furthermore, the means indicate that the students are neutral concerning their enjoyment of literacy activities; on average the scores for intrinsic value are just above the scale middle point. The means for reported effort and reported self-regulation indicate that students put some mental effort in literacy activities since both average scores are at (or very near to) the scale middle point. For reported effort this is defined by the two extremes: 'not at all' and 'very much'. For self-regulation it is defined by the extremes: 'sometimes' and 'very frequently' (for executing specific strategies). With regard to

students' behavioral engagement, the means indicate that time spend on literacy activities in the lessons, not surprisingly, was more in language arts than in social studies. Also, students were on average more on task in literacy activities in language arts (32.1 minutes) than in social studies (22.3 minutes). When time students are on-task is divided by the time lessons were spent on literacy activities, the means show that students were on task 80% of the time in language arts and 75% of the time in social studies. The relative time on task for literacy for these low-achieving students did thus not deviate much between the two types of lessons. The means for reading comprehension proficiency show that the reading comprehension proficiency scores are in the mid range of the test (40-50 out of a maximum of 65) indicating that the test is well suited for these low-achieving students. In addition, as might be expected, the means are higher in the higher grades, indicating average growth.

1.5.2 Reading comprehension proficiency

To answer the first research question, correlations were computed between students' engagement and their average reading comprehension proficiency across grades 7 to 9 ($M=43.24$, $SD=7.49$). Results show that reading comprehension proficiency is significantly predicted by intrinsic value ($r=.369$, $p<.025$, $r^2=.14$) and time-on-task in social studies ($r=.380$ $p<.05$, $r^2=.14$). For both aspects, the r^2 indicates that 14 percent of the variance is explained which points to weak associations between these aspects of engagement and reading comprehension proficiency. Contrary to the expectations, the results show no significant correlations for self-efficacy, utility value, reported effort, reported self-regulation and time-on-task in language arts with reading comprehension proficiency of low-achieving adolescents.

1.5.3 Reading comprehension development

To answer the second research question, a repeated measures ANOVA was conducted with the scores for reading comprehension proficiency in grades 7-9 as dependent variable. The results show that students progressed in reading comprehension proficiency from grade 7 to grade 9 ($F_{(2,124)}=37.87$, $p=.000$, partial $\eta^2=.38$). Within subject contrasts show that also the difference between grade 7 and grade 8 is significant ($F_{(1,62)}=6.65$, $p=.012$, partial $\eta^2=.09$). In addition, the difference between grade 8 and grade 9 is significant ($F_{(1,62)}=43.17$, $p=.000$, partial $\eta^2=.41$). The effect sizes indicate that growth in reading comprehension proficiency is quite strong, especially from grade 8 to 9. But students improved in reading comprehension proficiency in each grade.

To answer the third research question, the associations of the engagement variables with growth in reading comprehension proficiency were analyzed separately

by means of linear regression for three time spans (7-8, 8-9, and 7-9). Reading comprehension proficiency scores in the previous grades were entered first to control for students' initial reading comprehension proficiency. For all time spans, the results show that the reading comprehension proficiency in previous grades predicted reading comprehension proficiency in the later grades significantly (7-8 $r^2=.49$, $p<.001$; 8-9 $r^2=.69$, $p<.001$; 7-9 $r^2=.54$, $p<.001$). Next, the engagement variables were entered into the regression separately to examine their contribution to the residual variance in reading comprehension proficiency. Results show that adding intrinsic value to the regression model results in a significant improvement of the model fit for grades 7 and 8 (3 % explained variance). The standardized Beta ($Beta=.19$; $p=.05$) for intrinsic value to predict reading comprehension development between grade 7 and 8, was positive, indicating that intrinsic value was a positive contributor to reading comprehension development. In the left plot of Figure 1.1 the developmental patterns of students with higher and lower intrinsic values based on a medium split, are visualized. The patterns show that low-achieving adolescents with higher intrinsic values improved more in reading comprehension proficiency between grades 7 and 8 than their peers with lower intrinsic values. It also shows that from grade 8 to 9 this trend is not continued.

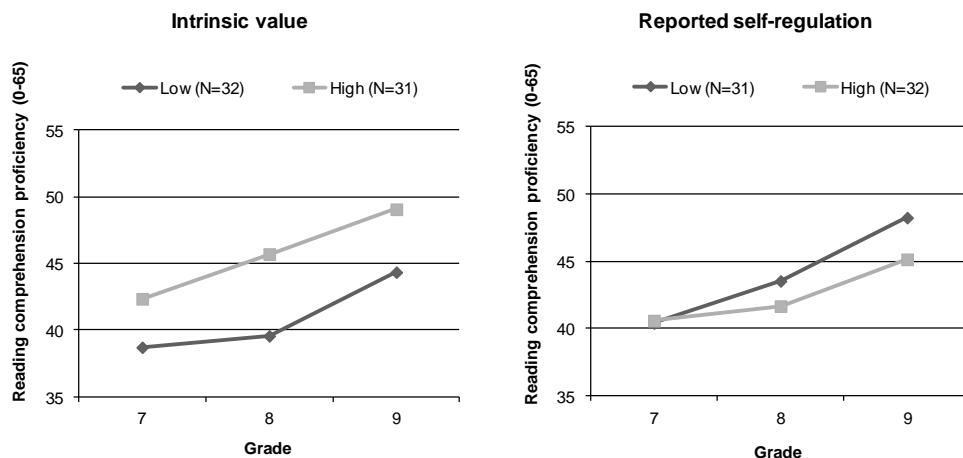


Figure 1.1 Reading comprehension development patterns of students with higher and lower intrinsic values (left) and reported self-regulation (right).

In addition, reported self-regulation explained 4% of the variance for reading comprehension development between grade 8 and 9 ($Beta=-.15$; $p=.022$), and explained 7 % of the variance for reading comprehension development between grades 7 and 9 ($Beta=-.20$; $p=.004$). Contrary to expectations, the standardized Betas were both negative, indicating that reported self-regulation contributed negatively to

reading comprehension development. In the right plot of Figure 1 the developmental patterns of students with higher and lower reported self-regulation, are displayed. The patterns show that low-achieving adolescents, who report applying more self-regulation, grow less than students who say to apply less self-regulation.

Finally, none of the other engagement variables was found to have a significant contribution to the explanation of reading comprehension development.

1.6 Conclusions and discussion

Educational researchers have become increasingly interested in understanding students' engagement in reading in the classroom as a way to increase reading comprehension proficiency and development (Guthrie & Wigfield, 2000; Guthrie et al., 2012). The main objective of this study was to explore the role of affective, cognitive and behavioral engagement in the classroom for reading comprehension proficiency and its development of low-achieving adolescents. The study showed that, although the adolescents in our study are low-achieving and perform below levels required in school and at the workplace, they still improve in reading comprehension proficiency in the first 3 grades of prevocational secondary education. Contrary to pessimistic views about reading comprehension development of low-achieving adolescents (cf. Alvermann, 2001; Biancarosa & Snow, 2006; Inspectie van het Onderwijs, 2008; Hofman et al., 2009), these findings are encouraging in light of the importance of reading comprehension proficiency for youngsters' academic, professional and societal careers.

Results of this study also show that intrinsic value as an indicator of affective engagement was positively associated with reading comprehension proficiency and there was also a small contribution of intrinsic value to growth in reading comprehension proficiency. A significant contribution of intrinsic value was found in explaining growth between grades 7 and 8, but no effect was found between grades 8 and 9 nor between grades 7 and 9. The findings for intrinsic value are interesting in the light of findings from studies into the effect of reading enjoyment and reading interest on reading comprehension development, indicating that intrinsic value is positively associated with reading comprehension proficiency as with reading comprehension growth (Becker et al., 2010; Taboada et al., 2009; Guthrie et al., 2007; Retelsdorf et al., 2011).

The findings relating to the role of intrinsic value of this study may indicate that, although it contributes to reading comprehension development at younger ages, for low-achieving adolescents the effect of intrinsic value on reading comprehension development diminishes in adolescence. Although all these students struggle with

reading, it is possible that at a younger age some of them experienced more enjoyment leading to more reading and better comprehension. Other low achieving students possibly developed more negative attitudes towards reading already at a young age, leading to less reading and less growth in reading comprehension proficiency. This can explain why the correlation between intrinsic value and reading comprehension proficiency still exists in adolescence, because of the difference in previous reading experiences. But the effect on reading comprehension development may decline over time. This decline may be the result of a decline in leisure time reading that is generally found in adolescence, and is the strongest for low-achieving adolescents (De Vries, 2007; National Endowment for the Arts, 2005; Siebelhoff, Caarels & Cheung, 2010; Nippold, Duthie & Larsen, 2005). In adolescence, reading activities face strong competence of other leisure time activities, such as surfing the internet, watching television, jobs and hanging-out with friends (Land, Van den Bergh & Sanders, 2007; Wilson & Casey, 2007). In contrast, younger children with more positive beliefs about reading are found to read more books and spend more time reading, which is likely to result in increased reading comprehension proficiency (McKenna, Kear & Ellsworth, 1995; Wigfield & Guthrie, 1997). The decline in leisure time reading through the grades is likely to reduce the strength of the association between intrinsic value and reading comprehension development for low-achieving adolescents. Results of Retelsdorf et al. (2011), however, suggest that the association between intrinsic values and reading comprehension growth is stronger when adolescents of all levels of proficiency are compared.

For utility value, no associations were found with or reading comprehension proficiency nor with reading comprehension development. These findings suggest that the importance attributed to reading by low-achieving adolescents' is independent of both their reading comprehension level and development. Students in our study were on average quite convinced of the importance of reading for their current and future goals; they scored around 4 on a scale ranging from 1 to 5. An explanation may be that students who are motivated by utility of reading primarily view reading abstractly for future use, without sufficient reason to develop skills directed to better comprehension of concrete reading tasks at school. They might therefore be more focused on getting the job done than on understanding texts fully. If their attitude towards reading is defined in this way, it is not likely that they will develop skills for deep text processing. Frequent practice with deep text processing is actually what low-achieving adolescents need to do in order to enhance their reading comprehension proficiency (Schiefele, 1999; Schraw & Lehman, 2001; Wang & Guthrie, 2004; Wigfield & Guthrie, 1997). Furthermore, research has shown that abstract motives for enacting literacy activities of adolescents (such as "reading is important") often become

overruled by reasons for not enacting literacy activities (such as “reading is boring” or “it’s more fun to play games”) (Van Kruistum, Leseman & De Haan, *unpublished results*). In addition, future research should provide more insights in the role of undermining motivations, such as task avoidance, lack of control and task difficulty. Studies found, for example, that when students believe they are externally controlled in reading (feeling coerced) they are likely to find reading aversive and report high levels of work avoidance and other school activities (Guthrie et al., 2007; Guthrie, Coddington & Wigfield, 2009; Assor, Kaplan, Kanat-Maymon & Roth, 2005).

Contrary to what theories on self-efficacy presume (Bandura, 1997; Chapman & Tunmer, 1995), no relations were found for the impact of self-efficacy on both reading comprehension and reading comprehension development. Although these findings are not in line with the theoretical assumptions, they do correspond, however, with findings from other longitudinal studies into the role of self-efficacy that did not find empirical evidence of effects of self-efficacy on reading development as well (Aunola et al., 2002; Chapman & Tunmer, 1997; Guthrie et al., 2007; Retelsdorf et al., 2011). That self-efficacy does not turn out to be a predictor of reading comprehension development among low-achieving adolescents may be explained by the high scores on high self-efficacy beliefs found in our sample: around 4 on a scale ranging from 1 to 5. High self-efficacy beliefs are found more often with low-achieving students. They can be a coping strategy of low-achievers to persist in the face of difficulties and can be understood as an effective coping strategy (Klassen, 2002; Harris & Graham, 1992). They are also likely to be fostered by the learning environment. The low-achieving adolescents in our study are enrolled in a tracked school system in secondary education. As a result, these students are surrounded by classmates with similar low reading comprehension abilities. Moreover, literacy tasks are adapted to their abilities and their teachers intend to increase students’ confidence. In such a learning environment, low-achieving adolescents may find themselves quite competent in reading despite the fact that they are poor readers compared with students with higher academic skills. Consequently, students’ self-efficacy beliefs may not match their actual performance. At high levels of self-efficacy, students even may feel overconfident so that they fail to allocate needed resources and effort and therefore may retard instead of boost learning (Salomon, 1984; Sawyer, Graham & Harris, 1992). This may explain why low-achieving adolescents in this study did not become better readers when they felt more confident in their reading skills. It also may explain why no effect of self-efficacy was found on their reading comprehension level, if we assume that the unrealistic estimation of their reading skills for these low achievers was also present at younger ages.

Next to affective engagement, we also examined effects of cognitive engagement on reading comprehension proficiency and development. For reported effort and reported self-regulation no significant relationships were found with reading comprehension proficiency. However, we did find a small but significant negative relation between reported self-regulation and reading comprehension growth. These findings suggest that low-achieving students' who frequently use reading strategies show less growth in reading comprehension than their peers who use reading strategies less frequently. Given the strong body of research demonstrating positive links between self-regulation and reading comprehension proficiency (Duke & Pearson, 2002; Pearson et al., 1992; Oakhill & Cain, 2007; Trabasso & Bouchard, 2002), we did not expect this finding. One explanation may be that low-achieving students have much difficulty with self-regulatory aspects of reading (Baker & Brown, 1984; Pressley, 2000; Vidal-Abarca et al., 2010). Therefore, more self-regulation may not necessarily result in better comprehension or in more growth over time. For the same reason, the expenditure of more effort does not have to result in better comprehension or more growth. In addition, efficient self-regulation is task and situation-specific. Dependent on the topic and goal of a particular task, prior knowledge, motivation to succeed and linguistic and regulative skills, readers may apply more or less successful self-regulation (Zimmerman & Schunk, 1989). These difficulties of self-regulation may explain that general indications of students' effort and self-regulation while reading are not (or even reversely) related to reading comprehension proficiency of low-achieving adolescents. The unexpected negative relation with growth may indicate that students reporting more self-regulation are doing so, because of the difficulties they experience with reading comprehension. Another explanation is related to the way we measured self-regulation by using self-reports. Previous studies have revealed that respondents do not always do what they say they do in such general retrospective self-reports (Cromley & Azevedo, 2006; Veenman, Van Hout-Wolters & Afflerbach, 2006). Research that takes the online relation between self-regulatory behavior and specific tasks into account, such as think-aloud procedures, is therefore needed to validate our findings.

In regard to behavioral engagement, a positive relationship was found between reading comprehension proficiency and time-on-task in social studies lessons, but not with time-on-task in language arts lessons. These findings support the idea that effects of engagement are sensitive to variation in learning contexts (Appleton et al., 2008; Finn & Rock, 1997; Fredricks et al., 2004; Guthrie et al., 2012; Linnenbrink & Pintrich, 2003). Nevertheless, the difference found between the effects of engagement between the two learning contexts is striking and requires an explanation. First, we have to emphasize that the effect found for engagement in social studies is on the

level of reading comprehension and not on *growth* in reading comprehension proficiency. Therefore, we can exclude that the association points to a causal relation between reading comprehension proficiency and the nature of the literacy activities in the two types of lessons (skill oriented in language arts vs. content oriented in social studies). In other words, if the relations were causal, we would expect that students being more engaged in literacy activities in social studies, would not per se be the ones with better reading comprehension proficiency, but would be the ones that grew more in reading comprehension proficiency across the grades 7-9. The results do indicate, however, that better readers are more engaged in social studies than poorer readers. Engagement theorists propose that choice for activities and persistence is determined by students' self-beliefs and their capabilities. In the classroom, the choice and persistence in activities is quite limited, however, and strongly determined by the opportunities teachers create for students to actually participate in performing reading activities. For example, during whole-class instruction or individualized tutoring there is less choice for students to be on-task or off-task, compared to settings such as individual seat work or group seat work (Cameron Ponitz et al., 2011). Therefore, the different associations may be related to the setting of reading practices (whole-class, individual seat work or group seat work). In-depth analyses of our observational data showed no significant differences between the subject domains. Literacy instruction in both subjects was dominated by individual seat work in which comparable levels of engagement were achieved. In addition, no relations were found between reading comprehension proficiency and level of behavioral engagement in one of the learning settings.

As such, it is more likely that the focus of activities is influencing the different associations between engagement and reading comprehension proficiency. Reading practices that are instrumental for obtaining knowledge about subject contents in the social studies may be more challenging and engaging for better readers than for the poorer readers in our classrooms, resulting in more time on task on such practices of the former group. However, the positive association between engagement in social studies and literacy proficiency does not directly point to instrumental literacy practices causing *progression* in reading comprehension proficiency. As explained above the direction of the relationship might be the reverse: more proficiency resulting in more engagement in instrumental literacy practices in social studies lessons. This explanation points to the premises of content-oriented language learning as proposed by the approaches of Content-Based Language Learning (Brinton et al., 1989; Bygate et al., 2001) and Concept-Oriented Reading Instruction (Guthrie & Wigfield, 2000; Guthrie et al., 2004). These approaches emphasize the importance of

instrumental reading and writing experience for achieving higher levels of engagement.

The question remains why we were not able to detect associations between students' level of behavioral engagement in the classroom and their reading comprehension development, while it actually seems likely that students who participate more in the learning opportunities offered will benefit more from education (Pressley, et al., 2001; Greenwood et al., 2002). On one hand, the fact that we did not find relations between behavioral engagement and growth in reading comprehension is quite disappointing, because it suggests that for the low-achieving students in our study it did not matter how much they were involved in language arts or social studies. Their on task behavior did not affect their reading comprehension development in a significant way. However, the relationship between behavioral engagement at school and reading comprehension development is also determined by the quality of students' behavior and the quality of the learning environment. Although time-on-task behavior does inform us about the amount of behavioral engagement, they do not tell us much about the quality of students' reading and writing. Nor does time-on-task behavior provide good indications of the quality of the learning environment that students were engaged in. The nature and setting of literacy activities and behavior of teachers determine to what extent students benefit from instruction (Brekelmans, Sleegers & Fraser, 2000; Furrer & Skinner, 2003; Guthrie et al., 2012). Future research into behavioral engagement should therefore not only look at time-on-task behavior, but also focus on the nature of students' behavioral engagement in relation to the nature of the learning environments.

This study suggests that the role of engagement for reading comprehension proficiency is different for low-achieving adolescents, compared to what is known from earlier studies directed at more heterogeneous samples and younger students. Our findings show the value of research directed at focused samples, directed at the specific situation of low-achieving adolescents. In addition, the results suggest the need to explore the different dimensions (affective, cognitive and behavioral) of engagement to obtain a better understanding of its complex and dynamic nature as well as its consequences (Fredricks et al., 2004; Guthrie et al., 2012). More importantly, however, the findings emphasize the importance of distinguishing between reading comprehension proficiency level and development in examining relationships between engagement and academic achievement. This study has shown that for low-achieving adolescents significant relationships between reading comprehension proficiency and engagement were not accompanied by significant relationships between aspects of engagement and reading comprehension development. This finding is a call for caution in interpreting correlations between

proficiency and engagement in terms of consequences for students' future reading development. Instead the correlations between proficiency and engagement (intrinsic value and behavioral engagement) presumably provide information about students' preceding reading development. Such correlations may explain why some low-achieving adolescents are more proficient than others, but they do not tell us which students grow more in reading comprehension proficiency in the studied period of adolescence. We therefore call for more longitudinal studies into reading comprehension proficiency of readers of different ages and levels of proficiency covering the multiple dimensions of engagement and making an explicit distinction between proficiency level and development.

While we believe that this study makes a unique contribution to the field of reading engagement, we also acknowledge its limitations. First, the small sample size calls for caution. Given this small sample we were able to find only sizeable effects of engagement. We therefore cannot exclude that with a larger sample relatively small effects will be found. In addition, we recognize that our findings are not based on a representative sample of low achieving adolescents and therefore cannot account for all the differences that might exist between their learning contexts (let alone international educational systems). Replication of this study using other samples of low-achieving adolescents is needed to validate our findings. Furthermore, more research is needed to other indicators of engagement, such as goal orientations, undermining motivations and social motivations. Also these aspects may contribute to low-achieving adolescents' reading achievement (Baker & Wigfield, 1999; Guthrie et al., 2009). Finally, the relationship between engagement and competence are claimed to be reciprocal (Morgan & Fuchs, 2007). The design and analysis used in our study did not capture such effects. They could be unraveled by experimental research designs in which engagement is optimized. Still, we believe that this explorative longitudinal study has made an important contribution to our understanding of low achieving adolescent reading comprehension development and the role of engagement.

Chapter 2

Writing proficiency and development: the roles of affective, cognitive and behavioral engagement in the classroom⁶

Seeking ways to increase academic success of low-achieving adolescents, this longitudinal study explored the role of cognitive, affective and behavioral engagement in writing proficiency and development of a group of 63 students. In the course of grades 7 to 9 students' self-efficacy beliefs, intrinsic values, utility values, reported effort and reported self-regulation were investigated. In addition, the time students were on-task in literacy activities in language arts and social studies was coded. Furthermore, students' writing proficiency was examined in each grade. Intrinsic value and behavioral engagement in social studies explained differences in writing proficiency among low-achieving adolescents, whereas self-efficacy beliefs, utility value, reported effort, reported self-regulation and behavioral engagement in language arts did not. More importantly, the study shows that although the adolescents in our study are low-achieving, they improve significantly in writing proficiency from grade 7 to 9. However, not all low-achieving adolescents progressed to the same extent. Although engagement is regarded as an import predictor of academic achievement in the literature, none of the affective, cognitive and behavioral engagement aspects investigated could explain differences in writing development among low-achieving adolescents. Theoretical and practical implications of this study are discussed for a better understanding of the role of engagement in low achieving adolescents' writing development.

⁶ This chapter is based on:

De Milliano, I., Van Gelderen, A., Sleegers, P., Van Schooten, E., (under review). Cognitive, affective and behavioral engagement in the classroom as predictors of writing proficiency and development of low-achieving adolescents.

2.1 Introduction

Learning to write begins at school entry and develops through formal schooling years and beyond. Through the grades students are increasingly asked to demonstrate their knowledge through all kinds of writing. In addition, the explosion of electronic and wireless communication in daily life brings writing skills into play as never before (Graham & Perin, 2007). Yet, studies in a range of countries signal that many adolescents have difficulties in composing texts at levels required by the school curriculum and from the perspective of future career and societal requirements (Alliance for Excellent Education, 2006; Baumert et al., 2001; Inspectie van het Onderwijs, 2008; Hofman, Spijkerboer & Timmermans, 2009; OECD, 2000; Salahu-Din, Persky & Miller, 2008). Although a great deal of research has examined factors that enhance writing proficiency (Alexander, Graham & Harris, 1998; Bereiter & Scardamalia, 1987; Englert, Raphael, Fear & Anderson, 1988; Hayes & Flower, 1980; Graham, 2006; McCutchen, 1995), few studies have focused on the group of low-achieving adolescents who have difficulties composing comprehensible texts (Juzwik et al, 2006; Klassen, 2002). Consequently, there is little understanding of the differences that exist within this group of low-achievers and which educational factors (e.g. instruction, curriculum), psychological (e.g. knowledge, engagement) and personal background factors (e.g. gender, SES or ethno-linguistic background) improve their writing proficiency and facilitate their development in writing proficiency. One concept that recently has received increasing attention as a possible important predictor of writing proficiency and learning is the concept of engagement. In this study, we focus on low-achieving adolescents' engagement in literacy in school contexts in relation to the level and the development of their writing proficiency.

Engagement is defined as students' feelings, thoughts and behaviors concerning a more or less specified object, such as school, learning, reading or writing (Appleton, Christenson & Furlong, 2008; Fredricks, Blumenfeld & Paris, 2004; Guthrie, Wigfield & You, 2012; Linnenbrink & Pintrich, 2003). Research has shown that students' involvement in school and learning decreases throughout the years. The strongest declines are observed in early adolescence and among low-achieving students (Archambault, Eccles & Vida, 2010; Durik, Vida & Eccles, 2006; Eccles, Wigfield & Schiefele, 1998; Harter, Whitesell & Kowalski, 1992; Jacobs et al, 2002). In addition, studies suggest that differences between students in ability, motivation and effort in school work increase in early adolescence (Nicholls, 1990; Stipek, 1998). This period of personal development is often described as turbulent because of school transition (from primary to secondary) and several socio-emotional changes related to the

forming of new social identities with consequences for participation in school and for literacy (Anderman & Maehr, 1994; Ramey & Ramey, 1994). As writing becomes increasingly demanding through the grades, engagement in carrying out reading and writing activities in the classroom may be important for writing development (Boscolo, 2012; Bruning & Horn, 2000). By focusing on active engagement in the classroom, this study aimed to make a contribution to the existing literature on writing development and the role of engagement in literacy of low-achieving adolescents.

2.2 Theoretical background

2.2.1 Engagement

Contemporary definitions of engagement emphasize that engagement is a multidimensional construct, including affective engagement, cognitive engagement and behavioral engagement (Appleton et al., 2008; Fredricks et al., 2004; Guthrie et al., 2012; Linnenbrink & Pintrich, 2003). Affective engagement refers to motivational factors, including students' feelings and emotional reactions to a task or school in general, their beliefs about their ability to perform a task and subjective task values about the importance and interest of the task. Cognitive engagement refers to students' willingness to exert mental effort needed to perform challenging academic tasks as well as the use of self-regulatory strategies to guide one's cognitive efforts. Behavioral engagement refers to the active participation of students in academic activities in the classroom. In summary, engagement is defined by the interplay of motivational processes, cognitive strategies and active behavior. Affective engagement is what energizes students' behavior, whereas behavioral engagement indicates whether students are actually engaged. Cognitive engagement indicates the depth of students' engagement (the degree of cognitive effort invested). In this study, we used this multidimensional construct of engagement to examine students' motivation, their cognitive efforts and actual behavior towards writing *within* their classrooms. Since researchers in the field of writing have focused on cognitive processes for a fairly long time, we start by outlining this facet of engagement, followed by the affective and behavioral aspects.

2.2.2 Cognitive engagement

Cognitive engagement refers to the use of cognitive strategies during writing for executing and coordinating writing processes as well as students' willingness to exert mental effort to foster written communication. The application of strategies is also referred to as cognitive self-regulation (Torrance, Fidalgo & Garcia, 2007; Zimmerman & Risemberg, 1997). A great deal of research has been done regarding cognitive self-regulation and its relation with texts produced by writers of diverging proficiency

(Graham, 2006). Together, the findings suggest that better writers are more strategic than poorer writers. Writers who plan and revise their writing more intensively and who consider their formulation more precisely write texts of better quality (De Milliano, Van Gelderen & Sleegers, 2012). Low-achieving adolescents' writing can be characterized to a great extent by the model of 'knowledge telling' (Bereiter & Scardamalia, 1987). Knowledge telling involves retrieving content relevant to the topic from long-term memory and writing it down without much planning or reviewing (Harris, Graham, Brindle & Sandmel, 2009). Using cognitive strategies requires the expenditure of mental effort. Especially for low-achievers this may be a very hard task, given their poor knowledge of both conceptual and linguistic issues (Englert et al., 1988; Kellogg, 1987; McCutchen, 1986; Olinghouse & Graham, 2009). On the other hand, self-regulation of low-achieving adolescents is not in vain as research findings indicate that developing writers gain more knowledge about writing strategies over time and that instruction directed at self-regulation can enhance writing skills, especially of low-achieving students (De La Paz, Swanson & Graham, 1998; Englert, 1992; Graham & Perin, 2007; Harris et al., 2009). Based on these findings, we assume that low-achieving adolescents who put more effort in writing and who use more self-regulative activities perform better in writing and obtain more progression in writing proficiency over time.

2.2.3 Affective engagement

During the last decades there has been increased interest in the role of affective processes in writing. Recent models of the writing process also include affective or motivational variables (Hayes, 1996; Zimmerman & Risemberg, 1997). Affective engagement refers to the motivational processes during writing. Motivation is defined as the beliefs, values and goals individuals have for domain specific activities (Eccles & Wigfield, 2002). It is often assumed that students' beliefs about their ability to perform a task (self-efficacy) and their subjective values about the relevance and importance of the task (subjective task values) influence students' effort, persistence and performance on the task (Wigfield & Eccles, 2000), especially when activities are cognitively demanding. Writing is such a demanding activity, as many different cognitive activities are involved (Bruning & Horn, 2000; Graham, 2006; Graham, Berninger & Fan, 2007; Hidi & Boscolo, 2006; Klassen, 2002; Pajares, 2003; Schunk & Zimmerman, 1994). Accordingly, motivation for writing may not only lead to increased writing achievement, but also to growth in skills over time as students who are motivated tend to put more effort in learning. In examining students' affective engagement in writing proficiency and development, we focus on two of the most

studied motivational components in the field of writing; self-efficacy and subjective task values.

Self-efficacy for writing is a persons' belief in the ability to effectively complete writing tasks (cf. Bandura, 1997), whereas subjective task values is a complex composite comprising attainment values, intrinsic values, utility values and costs (Eccles, 2005). Research into the role of self-efficacy (Klassen, 2002; Pajares, 2003; Pajares & Valiante, 2006), shows that self-efficacy beliefs play an important role in predicting writing achievement. Research into subjective task values of writing has mainly focused on interest in a topic rather than on writing as an appealing activity itself (Hidi & Boscolo, 2006). Some research explored the idea of writing as interesting activity of itself. The available evidence suggests that students' desire to write influences their writing performance (Boscolo, 2012; Graham et al., 2007; Lipstein & Renninger, 2007). Although findings of different studies suggest that self-efficacy for writing and subjective task values are important predictors for writing proficiency, less is known about the relationship between these predictors and the development of writing proficiency over time. No longitudinal studies have been conducted so far (Klassen, 2002; Graham & Harris, 2012). By examining the relation between self-efficacy and subjective task values as indicators of affective engagement on the one hand and writing proficiency and writing development among low-achieving adolescents on the other hand, we intend to determine whether affective engagement is a factor not only associated with students' level of writing proficiency but also with growth in writing proficiency.

2.2.4 Behavioral engagement

Behavioral engagement refers to the extent to which students are actually performing academic tasks, including attending to and completing tasks responsibly, following rules and instruction, and exercising self-control (Cameron Ponitz, Rimm-Kaufman, Grim & Curby, 2009). Behavioral engagement is students' participation in a set of learning opportunities and tasks as offered by teachers in the classroom. Students' behavioral engagement in academic activities is viewed as an important predictor of academic achievement as students' participation in academic activities is a prerequisite for learning (Fredricks et al., 2004; Greenwood, Horton & Utley, 2002; Pressley et al., 2001). For writing, no research is known directed at the relationship between behavioral engagement in the classroom and writing achievement. In the field of reading, studies conducted in kindergarten and elementary schools (Berliner, 1979; Dolezal, Welsh, Pressley & Vincent, 2003; Guthrie et al., 2012; Hughes & Kwok, 2007; Ponitz, McClelland, Matthews & Morrison, 2009) have shown that behavioral engagement in the classroom is positively related to reading achievement. In their

longitudinal study, Ladd and Dinella (2009) examined the effect of behavioral engagement of students (5 to 13 years old) on a variety of reading achievement tests. The findings showed that, while statically controlling for reading achievement in grade 1, the reading development of more engaged students improved more than for less engaged students. In this study, we therefore, examined the impact of low achieving students' behavioral engagement in literacy practices in the classroom on their writing proficiency and writing development.

Given the fact that engagement is assumed to be responsive to variation in learning contexts and the learning opportunities and tasks offered by teachers in classrooms (Finn & Rock, 1997), we paid attention to the context in which writing activities are enacted in the classroom. Writing is an activity that is not limited to the language arts but is also enacted across varying disciplines involving different purposes, forms and processes (Applebee & Langer, 2006; Kiuhara, Graham & Hawken, 2009). In the language arts, writing practices mainly focus on increasing writing proficiency, whereas in content area lessons, writing is a tool for acquiring specific content knowledge (Graham & Perin, 2007). We, therefore, focused on two different subject domains: language arts and social studies. Consistent with the engagement perspective, we presume that behavioral engagement in literacy practices is different in the two subject domains.

2.3 The present study

Although the different aspects of engagement are assumed to play important roles in writing development of low-achieving adolescents (Graham, 2006; Hayes, 1996; Zimmerman & Risemberg, 1997), the relative strength of these roles for low achieving adolescents are largely unknown, because this issue has scarcely received empirical attention. Particularly, the relationship between engagement and writing *development* is unknown, as no longitudinal studies have been performed yet. Studies hitherto, studied relationships of specific aspects of engagement and with writing achievement at the same point of measurement or in cross-sectional designs in heterogeneous samples regarding writing proficiency (both higher and lower achieving students) (Klassen, 2002; Pajares, 2003). Consequently, there is some empirical evidence suggesting that better writers are more engaged than poorer writers. However, especially for the group of low-achieving adolescents it is of importance to know to what degree their affective, cognitive and behavioral engagement in writing at school contributes to their writing proficiency. It is yet unknown whether there are differences between these low achievers in the role that different types of engagement play in writing proficiency. In addition, it is also unknown to what degree

their engagement in writing at school contributes to their growth in writing skills over time.

There is a need for writing research that focuses on low-achieving adolescents (Graham & Harris, 2012). Our current understanding of writing is based primarily on students with broad ranges of proficiency or disabled writer populations. In such populations, patterns emerging in the lowest achieving groups are obscured by the large differences between students. Therefore, findings from these types of writers may not hold true for low-achieving adolescents (Graham & Perin, 2007; Klassen, 2002). Insights in differences that exist among low-achieving adolescents are necessary to understand how education can improve low-achieving adolescents' writing proficiency in a way that fits students' individual skills and attributes. Therefore, we explored cognitive, affective and behavioral aspects of engagement in writing of low-achieving adolescents following them from grades 7 to 9 in relation to their writing proficiency level and development of writing proficiency across these three grades. The following questions were addressed:

- 1) How are affective engagement, cognitive engagement and behavioral engagement related to writing proficiency of low-achieving adolescents?
- 2) Do low-achieving adolescents progress in writing proficiency from grades 7 to 9?
- 3) Do affective, behavioral and cognitive aspects of engagement contribute to explaining differences in writing proficiency development of low-achieving adolescents?

2.4 Method

2.4.1 Participants

Low-achieving adolescents are defined in this study as students in the lowest 30-percentile of academic skills as measured by an aptitude test measuring language, reading and mathematics prior to admission of Dutch secondary education. In the Netherlands, these low-achieving students are enrolled in the two lowest tracks of prevocational secondary education⁷. The sample in grade 7 involved 63 students (36

⁷ Regular secondary education in the Netherlands is divided into three tracks: prevocational secondary education (VMBO), senior general secondary education (HAVO), and pre-university education (VWO). Prevocational education is further divided into four tracks: the basic vocational program, the middle-management vocational program, the combined program, and the theoretical program (Ministry of Education, Culture and Science, 2006).

boys and 27 girls) recruited out of 10 classes from 9 different ethnically mixed schools in the lowest tracks of secondary prevocational education. In grade 7, the students were between 12 and 14 years old ($M=14.7$). Of the sample in grade 7, 32 students were native speakers of Dutch; the other 31 students were non-native speakers of Dutch having various ethnic-linguistic backgrounds. Students diagnosed with a learning or behavioral disorder (e.g. dyslexia, ADHD), were excluded from our sample in order to ascertain that differences in writing development were not related to specific learning or behavioral disorders. In every class 6 to 7 students were selected. Due to attrition (e.g. illness, moving, problems at home or school), the number of participating students decreased in the course of our study. On the other hand, because of mobility of students, the number of classes and schools involved in the study increased. Ultimately, the sample consisted of 52 students distributed over 28 classes and 11 schools in grade 9.

2.4.2 Measures

2.4.2.1 Writing proficiency

The writing proficiency test consisted of three writing assignments in which students were asked to write a text. Each assignment specified a realistic communicative task connected to young people's daily lives. The selection of assignments was based upon a pretest among a group of students from the same population, containing more diverse writing assignments. Students commented on these assignments and the assignments that were received most positively were selected for the final test. The three assignments covered a range of text types (instructive, argumentative and narrative). In Assignment 1, students were asked to write a letter to two students from Belgium who were going to visit the Netherlands as part of an exchange program. Their task was to provide instructions on where to meet, what to bring, etcetera. In Assignment 2, students were asked to imagine they were taking part in a competition for which they were saving coupons on candy bar wrappers in order to receive two free cinema tickets. However, they were unable to find wrappers with coupons, even though the deadline had not passed. The assignment was to write a letter to the candy bar factory, arguing that it was not their fault they were not able to send the required number of coupons and convincing the recipient to send them the cinema tickets. In Assignment 3, students were asked to write a short sequel to a story they had read, with a given start end closing sentence.

Each assignment was rated by two independent raters using a primary trait scoring procedure (Lloyd-Jones, 1977). For each assignment, the central communicative objective – or primary trait – was formulated. On the basis of this

primary trait, a set of rating criteria were specified (e.g. 'letter conventions', 'line of reasoning', and 'consistency with original story'). The raters had to use these criteria to assign each student a single score. To arrive at this score, raters were provided with a scale of five benchmark texts. This scale was developed in a separate session in which a sample of forty texts was rated by two independent raters, following a procedure based on Blok (1986) and adopted in Schoonen et al., 2011). The five scale points represented the 10th, 25th, 50th, 75th and 90th percentiles of these forty texts. The final interrater reliability of the scores was satisfactory: For Assignment 1, $r = .89, .82$, and $.77$ in grade 7, 8 and 9 respectively; for Assignment 2, $r = .88, .83$ and $.75$ in grade 7, 8 and 9 respectively; and for Assignment 3, $r = .88, .86$ and $.75$ in grade 7, 8 and 9, respectively. Across all three years, one rater remained the same in order to avoid differences in severity of rating and to make the ratings comparable over years. Writing proficiency in every grade was represented by a sum score of the scores for assignment 1, 2 and 3 (grade 7 Cronbach $\alpha = .69$, grade 8 Cronbach $\alpha = .71$, grade 9 Cronbach $\alpha = .52$). Next, a sum score representing writing proficiency across grades 7 to 9 was computed. The reliability of this score was good (Cronbach $\alpha = .83$).

2.4.2.2 Engagement

Affective and cognitive engagement were measured using questionnaires. To assess affective engagement, an adapted version of the Attitude Scale towards English as school subject developed by the Dutch Institute of Testing (CITO) was used. For the purpose of this study, the questions were adapted to reading and writing. Half of the items concerned writing and half of the items concerned reading.

Three aspects of affective engagement were assessed (10 items for each aspect): 1) self-efficacy (e.g. "I am good at writing"), 2) intrinsic value (e.g. "I enjoy writing"), 3) utility value (e.g. "Writing proficiency is important to get a job"). Students were asked to indicate the extent to which the items referring to the three aspects of affective engagement applied to them on five point scales (1= not all true, 5 = very true).

Two aspects of cognitive engagement were assessed: 1) reported effort (10 items from the above mentioned attitude questionnaire; e.g. "I exert additional effort to become a better writer"), and 2) reported self-regulative behavior in reading and writing (33 items). The strategies represent the self-regulatory activities generally distinguished in the literature: orientation, planning, monitoring, controlling, testing and evaluation. The writing items (17 items; e.g. "While I'm writing, I consider whether my audience will comprehend what I mean.") were based on cognitive models for writing (Bereiter & Scardamalia, 1987; Hayes & Flower, 1980; Hayes, 1996), the reading items (16 items; e.g. "While I'm reading, I check whether I still comprehend what I'm reading.") were based on previous research into metacognitive knowledge

relevant for reading (Baker & Brown, 1984; Pressley & Afflerbach, 1995). Students were asked to indicate how often they apply a range of reading and writing strategies on a three-point scale (0=seldom to 2=frequently).

The internal consistencies of the five scales for affective and cognitive engagement were established in each grade (7 to 9). The internal consistencies were found to be adequate to good (.76< Cronbach's alpha >.89). Next, for each of the five scales a sum score representing the scores across grades 7 to 9 was computed. The measures of affective and cognitive engagement have quite satisfactory reliabilities across grades (Cronbach's alpha is .78 for Self-efficacy, .84 for Intrinsic value, and .75 for Utility value, .84 for Reported effort, .82 for Reported self-regulation).

To measure students' behavioral engagement in classroom activities, real-time observations were conducted in regular lessons of Dutch language arts (LA) and lessons in social studies (SS). For each student, two lessons per subject per grade were observed, resulting in an average of 12 hours per student. During classroom observations, two aspects were coded every ninety seconds for every student in the sample (1 to 7 students per class). The first aspect coded was whether the lesson was directed at *Literacy Activities* (e.g. writing, metacognitive knowledge, vocabulary, grammar, spelling and punctuation). The second aspect coded was whether the target student was *On-Task* (e.g. working on a problem, answering a question, listening to the teacher or a classmate making an on-task contribution). Since the duration of lessons varied over schools, the observations time differed for individual students. Therefore we corrected the time-on-task scores for observation time by dividing the time that students spent in a particular literacy activity by the total time students were observed. Next, the time that students were on task in the particular literacy activity was multiplied with this quotient⁸. Across the 167 hours of real-time observation, 8 hours were coded simultaneously by two observers. This means that 267 segments of 1.5-min each were coded twice (5% of a total of 6.680 segments). To estimate inter-observer-reliabilities we calculated Cohen's kappa. For Literacy Activities kappa was .89, for On-Task behavior kappa was .80. These reliabilities are sufficient for our research purposes. Next, sum scores representing behavioral engagement in language arts and social studies across grades 7 to 9 was computed. Low correlations between grades were found. However, given the situated nature of behavioral engagement in actual classroom behavior, this is not surprising and did not prevent us from averaging

⁸ An example of how the scores were corrected for observation time. Student 1's time-on task in literacy activity = time observed: 50 minutes; time spent in literacy activity: 30 minutes; time on-task in literacy activity: 15 minutes = $(30/50)*15 = 9$ minutes. Student 2's time on-task in literacy activity = time observed: 100 minutes; time spent in literacy activity: 30 minutes; time on-task in literacy activity: 15 minutes = $(30/100)*15 = 4.5$ minutes.

the scores over grades as an approximation of students' being on task in literacy activities.

2.4.3 Procedure

The writing proficiency test was administered in the spring semester in each of the grades in two 45-min sessions. The questionnaires were administered in each of the three grades in the fall semester in one 45-min session. Finally, for each subject (DL and SS) in each grade one lesson in the fall semester and one lesson in the spring semester was observed. The writing proficiency test was conducted in students' classrooms during the school day and administered by trained research assistants. The students' teacher was always present to maintain order. The questionnaires were administered by trained research assistants in separate group sessions during the school day. Students' questions were answered by the test leaders according to a standardized protocol.

2.4.4 Missing data

Of our dataset 8.7 % was missing due to attrition. EM estimation was used to estimate and impute the missing data on the dependent variable (writing proficiency). For the independent variables (indicators of engagement), we averaged the scores that were obtained through the grades. As a check, all analyses were conducted both with and without imputed missings. In all analyses the patterns were similar⁹.

2.4.5 Statistical analyses

Because the 63 students taking part in this study originally were selected from 10 different classes from 9 different schools¹⁰, we checked whether multi-level analyses were necessary by means of the program MLwiN (Rasbasch et al., 2000). Results from the multi-level analyses showed that adding a class level to the student level did not result in a significant improvement of the model fit. Therefore, all analyses were carried out uni-level. First, means and standard deviations were computed for all variables for the whole sample. To examine the relationships with writing proficiency level, correlations and effect sizes were computed for all engagement variables with average writing proficiency in grades 7 to 9. Students' development in writing proficiency was examined using GLM for repeated measures. Finally, for examining effects of engagement on writing proficiency development, we used writing proficiency obtained in grade 7 as covariate explaining writing proficiency in grade 9.

⁹ If desired the results can be retrieved by the author.

¹⁰ School and class level practically coincide in this study, since 10 classes come from 9 different schools, so testing for a school level next to a class level is not feasible.

We did not use change scores to analyze development, since several studies have shown the regression approach to be superior (Allison, 1990; Pike, 2004; Senn, 2006; Tu, Gunnell & Gilthorpe, 2008). The effects of engagement on development were explored for each of the three time spans: grade 7 to 8, grade 8 to 9, and grade 7 to 9.

2.5 Results

2.5.1 Descriptive results

Table 2.1 Means (standard deviations) of the study variables (N=63)

	Scale	Mean (SD)
Self-efficacy	1-5	3.85 (.50) ^a
Intrinsic value	1-5	3.00 (.72) ^a
Utility value	1-5	3.94 (.47) ^a
Reported effort	1-5	3.15 (.68) ^a
Reported self-regulation	0-2	1.00 (.26) ^a
Language arts		
Time spent	-	40.4 (12.8) ^b
Time-on-task	-	32.1 (11.7) ^b
Social studies		
Time spent	-	29.6 (15.5) ^b
Time-on-task	-	22.3 (10.4) ^b
Writing proficiency grade 7	-	234.7 (96.1)
Writing proficiency grade 8	-	270.0 (95.6)
Writing proficiency grade 9	-	294.3 (68.9)

- a) These scales are calculated as the average of the average scores on the scales in each of the grades 7, 8 and 9.
- b) These means are the average of the average time observed in two lessons in each of the grades 7, 8 and 9.

The means in Table 2.1 indicate that the students on average have quite some confidence in their literacy abilities and perceive literacy activities in school as quite useful. This is indicated by the average scores for self-efficacy and utility value, being close to 4 on the scale ranging from 1 (not at all) to 5 (very much). Furthermore, the means indicate that the students are neutral concerning their enjoyment of literacy activities; on average the scores for intrinsic value are just above the scale middle point. The means for reported effort and reported self-regulation indicate that students put some mental effort in literacy activities since both average scores are at (or very near to) the scale middle point. For reported effort this is defined by the two extremes: 'not at all' and 'very much'. For self-regulation it is defined by the extremes: 'sometimes' and 'very frequently' (for executing specific strategies). With regard to

students' behavioral engagement, the means indicate that more time was spent on literacy activities in language arts than in social studies. In addition, students were more on task in literacy activities in language arts on average (32.1 minutes) than in social studies (22.3) minutes. When time on task is divided by the time lessons were spent on literacy activities, the means show that students were on task 80% of the time in language arts and 75% of the time in social studies. The means for writing proficiency are based on the scaling procedure described in section 2.2. No absolute interpretation of their meaning is possible, since the scales were based on the range of writing competence found in the sample.

2.5.2 Writing proficiency

To answer the first research question, correlations were computed between students' engagement and their average writing proficiency across grades 7 to 9 ($M=266.8$, $SD=73.2$). Results show that writing proficiency is significantly predicted by intrinsic value ($r=.365$, $p<.025$, $r^2=.13$) and time-on-task in social studies ($r=.302$, $p<.05$, $r^2=.09$). The r^2 indicates that 13 percent of the variance is explained by intrinsic value and that 9 percent of the variance is explained by time-on-task in social studies. The low r^2 's point to weak associations between these aspects of engagement and writing proficiency. Contrary to the expectations, results show no significant correlations for self-efficacy, utility value, reported effort, reported self-regulation and time-on-task in language arts with writing proficiency of low-achieving adolescents.

2.5.3 Writing development

To answer the second research question, a repeated measures ANOVA was conducted with the scores for writing proficiency in grades 7-9 as dependent variable. The results show that students progressed in writing proficiency from grade 7 to 9 ($F_{(2,124)}=16.123$, $p<.001$; partial $\eta^2=.206$). Within subject contrasts (repeated) show that also the differences between grades 7 and 8 is significant ($F_{(1,62)}=16.60$, $p<.001$; partial $\eta^2=.211$). In addition, the difference between grade 8 and 9 is significant ($F_{(1,62)}=4.552$, $p<.05$; partial $\eta^2=.037$). The effect sizes indicate that growth in writing proficiency is especially strong from grade 7 to 8. But students improved in writing proficiency in each grade.

To answer the third research question, the associations of the engagement variables with growth in writing proficiency were analyzed separately by means of linear regression for three time spans (7-8, 8-9 and 7-9). Writing proficiency scores in the previous grades were entered first to control for students' initial writing proficiency. For all time spans, the results show that the writing proficiency in previous grades predicted writing proficiency in the later grades significantly (7-8 $r^2=.53$, $p<.001$; 8-9 $r^2=.23$, $p<.001$; 7-9 $r^2=.17$, $p<.001$). Next, the engagement variables were entered

into the regression separately to examine their contribution to the residual variance in writing proficiency. Results showed that none of the engagement variables to the regression models had a significant contribution to the explanation of writing development. To illustrate the findings Figure 2.1 shows the developmental patterns of students with higher and lower scores on three engagement variables based on a medium split. The left plot shows students with higher and lower intrinsic values and the right plot shows students with higher and lower reported self-regulation. The developmental patterns show no clear differences in steepness of the developmental slopes, but rather signal that more engaged students are more proficient in writing.

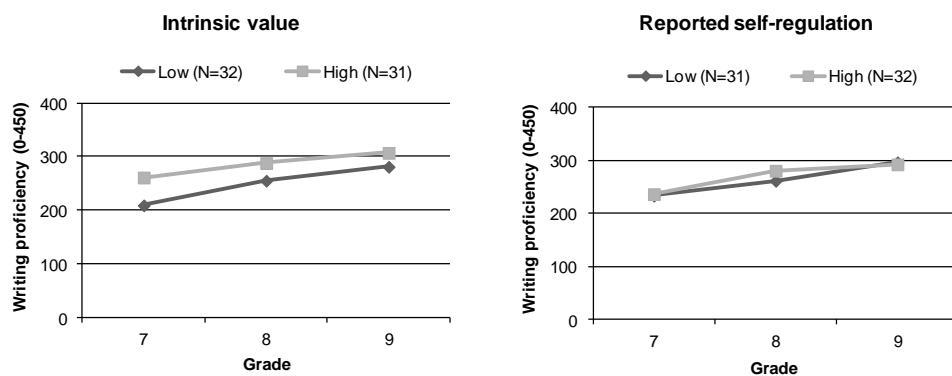


Figure 2.1. Writing development patterns of students with higher and lower intrinsic values (left) and reported self-regulation (right).

2.6 Conclusions and discussion

Educational researchers are increasingly interested in understanding students' engagement in the classroom as a way to increase academic achievement and learning (Appleton et al., 2008; Fredricks et al., 2004; Guthrie et al., 2012; Linnenbrink & Pintrich, 2003). The main objective of this study was to explore to what degree cognitive, affective and behavioral engagement in the classroom predict writing proficiency and its development in a group of low-achieving adolescents. The study showed that, although the adolescents in our study are low-achieving and perform below levels required in school and at the workplace, they still improve in writing proficiency in the first three grades of secondary education. Contrary to pessimistic views about writing development of low-achieving adolescents (cf. Graham & Perin, 2007; Inspectie van het Onderwijs, 2008; Salahu-Din, Persky & Miller, 2008), these findings are encouraging in the light of the importance of writing proficiency for youngsters' academic, professional and societal careers.

Results of this study also show that intrinsic value as an indicator of affective engagement was positively associated with writing proficiency, while a relationship with writing development was not evident. Our findings relating to the role of intrinsic value may indicate that although it may have contributed to writing development of low-achieving adolescents at younger ages, the effect of intrinsic value on writing development diminishes in adolescence. Although all these students struggle with writing, it is possible that at a younger age some of them experienced more enjoyment leading to more writing and better proficiency. Other low achieving students possibly already at a young age developed more negative attitudes towards writing, leading to less writing and less growth in writing proficiency. As a result, the correlation between intrinsic value and writing proficiency still exists in adolescence, because of the differences in previous writing experiences, but the effect on writing development may decline over time. Students who experience difficulties with writing are likely to develop more negative beliefs about the value of activities which they associate with difficulties (Archambault, Eccles & Vida, 2010). The development of negative beliefs may be accompanied with a decrease in involvement in learning that is generally found in adolescence and is the strongest for low-achieving adolescents (Durik, Vida & Eccles, 2006; Eccles, Wigfield & Schiefele, 1998; Harter, Whitesell & Kowalski, 1992; Jacobs et al., 2002). As such, the positive effect of intrinsic values on writing activities and proficiency may decline for low-achieving adolescents in the course of their writing development.

For utility value, no significant associations were found with writing proficiency nor with writing development. These findings suggest that low-achieving adolescents perceptions of the usefulness of writing is independent of their writing proficiency level and development. Students in our study were quite convinced of the importance of writing for their current and future goals; they scored on average around 4 on a scale ranging from 1 to 5. It is possible that students who report that writing is highly useful primarily refer to writing for future use. In that case, they would not feel the need to develop skills directed to better writing of writing tasks at school. They might therefore be more focused on getting the job done than on writing texts of good quality. If their attitudes towards writing are defined in this way, it is not likely that they will develop skills for strategic and successful text writing. Frequent practice with effortful and strategic approaches is what low-achieving adolescents need to do in order to enhance their writing proficiency (Graham & Perin, 2007; Harris et al., 2009). Furthermore, research has shown that such quite abstract motives for literacy activities of adolescents (such as "writing is important") often become overruled by reasons for not enacting literacy activities (such as "writing is boring" or "it is more fun to play games") (Van Kruistum, Leseman & De Haan, in prep). In addition, future

research should provide more insights in the role of undermining motivations, such as task avoidance, lack of control and task difficulty. Studies found, for example, that when students believe they are externally controlled in reading (feeling coerced) they are likely to find reading aversive and report high levels of work avoidance and other school activities (Guthrie et al., 2007; Guthrie, Coddington & Wigfield, 2009; Assor, Kaplan, Kanat-Maymon & Roth, 2005).

Contrary to what theories on self-efficacy presume (Bandura, 1997; Klassen, 2002; Pajares, 2003; Pajares & Valiante, 2006), no indications were found for the impact of self-efficacy on both writing proficiency and writing development. Although these findings are not in line with the theoretical assumptions, they do correspond, however, with findings from other longitudinal studies into the role of self-efficacy in the field of reading that did not find empirical evidence of effects of self-efficacy on reading development (Aunola, Nurmi, Niemi, Lerkkanen & Rasku-Puttonen, 2002; Chapman & Tumner, 1997; Guthrie et al., 2007; Retelsdorf et al., 2011). The fact that self-efficacy does not seem to be a predictor of writing development among low-achieving adolescents may be related to the high self-efficacy scores found in our sample; around 4 on a scale ranging from 1 to 5. High self-efficacy beliefs are often found for low-achieving students. They can be a coping strategy of low-achievers to persist in the face of difficulties and can be understood as an effective coping strategy (Klassen, 2002; Harris & Graham, 1992). They are also likely to be fostered by the learning environment. The low-achieving adolescents in our study are enrolled in a tracked school system in secondary education. As a consequence, these students are surrounded by a comparison group with equally low academic and writing skills. Moreover, literacy tasks are adapted to their abilities and their teachers are inclined to boost students' confidence. In such a learning environment, low-achieving adolescents may find themselves quite competent in writing despite the fact that their writing is poor compared with students with higher academic skills. Consequently, students' self-efficacy beliefs may not match their actual performance. At high levels of self-efficacy, students even may feel overconfident resulting in failure to allocate resources and effort and therefore may even retard instead of boost learning (Salomon, 1984; Sawyer, Graham & Harris, 1992). This may explain why low-achieving adolescents in this study did not become better writers when they felt more confident in their writing skills. It also may explain why no effect of self-efficacy was found on their writing proficiency level, if we assume that such overestimation of the low achieving students' writing skills was also present before they entered the 7th grade.

Next to affective engagement, we also examined the impact of cognitive engagement on writing proficiency and development. For reported effort and reported self-regulation no significant relationships were found with writing proficiency nor with

writing development. Given the strong body of research demonstrating positive links between self-regulation and writing proficiency (Graham, 2006), these findings were unexpected. One explanation may be that low-achieving students have much difficulty with self-regulatory aspects of writing (Bereiter & Scardamalia, 1987; De Milliano et al., 2012; Englert et al., 1988). Therefore, more self-regulation may not necessarily result in better writing proficiency or in more progression over time. For the same reason, the expenditure of more effort does not have to result in better texts or more growth in writing proficiency. In addition, efficient self-regulation is task and situation-specific. Dependent on the topic and goal of a particular task, prior knowledge, motivation to succeed and linguistic and regulative skills, writers may apply more or less successful self-regulation (Zimmerman & Schunk, 1989). These difficulties may explain that general measures of students' effort and self-regulation while writing are not related to writing proficiency of low-achieving adolescents.

Another explanation is related to the way we measured self-regulation by using self-reports. In previous research it is noted that respondents do not always do what they say they do in such general retrospective self-reports (Cromley & Azevedo, 2006; Veenman, Van Hout-Wolters & Afflerbach, 2006). Research that takes the online relation between self-regulatory behavior and specific tasks into account, such as think-aloud procedures, is therefore needed to validate our findings.

In regard to behavioral engagement, a positive relationship was found between writing proficiency and time-on-task in social studies lessons, but not with time-on-task in language arts lessons. These findings are consistent with the idea that effects of engagement are sensitive to variation in learning contexts (Appleton et al., 2008; Finn & Rock, 1997; Fredricks et al., 2004; Guthrie et al., 2012; Linnenbrink & Pintrich, 2003). Nevertheless, the difference found between the effects of engagement between the two learning contexts is striking and requires an explanation. First, we have to emphasize that the effect found for engagement in social studies is on the *level* of writing proficiency and not on *growth* in writing proficiency. Therefore, we can exclude that the association points to a causal relation between writing proficiency and the nature of the literacy activities in the two types of lessons (more skill oriented in language arts vs. more content oriented in social studies). In other words, if the relations were causal, we would expect that students being more engaged in literacy activities in social studies, would not per se be the ones with better writing proficiency, but would be the ones that grew more in writing proficiency across the grades 7-9. The results do indicate, however, that better writers are more engaged in social studies than poorer writers. Engagement theorists propose that choice for activities and persistence is determined by students' self-beliefs and their capabilities. In the classroom, the choice and persistence in activities is quite limited, however, and

strongly determined by the opportunities teachers create for students to actually participate in performing literacy activities. For example during whole-class instruction or individualized tutoring there is less choice for students to be on-task or off-task, compared to settings such as individual seat work or group seat work (Cameron Ponitz et al., 2011). Therefore, the different associations may be related to the setting of writing practices (whole-class, individual seat work or group seat work). In-depth analyses of our observational data showed no significant differences between the subject domains. Literacy instruction in both subjects was dominated by individual seat work in which comparable levels of engagement were achieved. In addition, no relations were found between writing proficiency and level of behavioral engagement in one of the learning settings.

Consequently, it is more likely that the focus of activities is causing the different associations between engagement and writing proficiency. Literacy practices that are instrumental for obtaining knowledge about subject contents in the social studies may be more challenging and engaging for better writers than for the poorer writers in our classrooms, resulting in more time on task on such practices of the former group. However, the positive association between engagement in social studies and literacy proficiency does not directly point to instrumental literacy practices causing *progression* in writing proficiency. As explained above the direction of the relationship might be the reverse: more proficiency resulting in more engagement in instrumental literacy practices in social studies lessons. This explanation points to the premises of content-oriented language learning as proposed by the approaches of Content-Based Language Learning (Brinton et al., 1989; Bygate et al., 2001) and Concept-Oriented Reading Instruction (Guthrie & Wigfield, 2000; Guthrie et al., 2004). These approaches emphasize the importance of instrumental reading and writing experience for achieving higher levels of engagement.

The question remains why we were not able to detect associations between students' level of behavioral engagement in the classroom and their writing development, while it seems likely that students who participate more in the learning opportunities offered, will benefit more from education (Pressley et al., 2001; Greenwood et al., 2002). On one hand, the fact that we did not find relations between behavioral engagement and growth in writing is quite disappointing, because it suggests that for the low-achieving students in our study it did not matter how much they were involved in literacy activities in language arts and social studies. Their on-task behavior did not affect their writing development in a significant way. However, the relationship between behavioral engagement at school and writing proficiency is also determined by the quality of students' behavior and the quality of the learning environment. Although time-on-task behavior does inform us about the amount of

behavioral engagement, it does not tell us much about the quality of students writing and reading. Nor does time-on-task behavior provide good indications of the quality of the learning environment that students were engaged in. The nature and setting of literacy activities and behavior of teachers determine to what extent students benefit from instruction (Brekelmans, Sleegers & Fraser, 2000; Furrer & Skinner, 2003; Guthrie et al., 2012). Future research into behavioral engagement should therefore not only look at time-on-task behavior, but also focus on the nature of students' behavioral engagement in relation to the nature of the learning environments.

This study suggests that the role of engagement for writing proficiency is different for low-achieving adolescents compared to what is known from earlier studies directed at more heterogeneous and younger students. Our findings show the value of research direct at focused samples, and directed at the specific situation of low-achieving adolescents in particular. In addition, the results suggest the need to explore the different dimensions (cognitive, affective and behavioral) of engagement to obtain a better understanding of its complex and dynamic nature as well as its consequences. More importantly, however, the findings underline the importance of distinguishing between writing proficiency level and development in examining relationships between engagement and academic achievement. This study has shown that for low-achieving adolescents significant relationships between writing proficiency and engagement were not accompanied by significant relationships between aspects of engagement and writing development. This finding calls for caution in interpreting correlations between proficiency and engagement in terms of consequences for students' future writing development. Instead, the correlations between proficiency and engagement (intrinsic value and behavioral engagement) presumably provide information about students' preceding writing development (in our case before grade7). Such correlations may explain why some low-achieving adolescents are more proficient than others, but they do not tell us which students grow more in writing proficiency in the studied period of adolescence. We therefore call for more longitudinal studies into writing proficiency of writers of different ages and levels of proficiency covering the multiple dimensions of engagement and making an explicit distinction between proficiency level and development.

While we believe that this study makes a unique contribution to the field of writing engagement, we also acknowledge its limitations. First, the small sample size calls for caution. Given this small sample we were able to find only sizeable effects of engagement. We therefore cannot exclude that with a larger sample relatively small effects will be found. In addition, we recognize that our findings are not based on a representative sample of low-achieving adolescents and therefore cannot account for all the differences that might exist between their learning contexts (let alone

international educational systems). Replication of this study using other samples of low-achieving adolescents is needed to validate our findings. Furthermore, more research is needed into other indicators of engagement, such as perceived autonomy (Guthrie et al., 2007), mastery and performance goals, (Meece & Miller, 2001; Pintrich, 2000), undermining motivations (Guthrie et al., 2009) and social motivations (Furrer & Skinner, 2003; Guthrie et al., 2007). These aspects of engagement may as well contribute to low-achieving adolescents' writing achievement. Finally, the relationship between engagement and competence is claimed to be reciprocal (Morgan & Fuchs, 2007). The design and analysis used in our study did not capture such reciprocal effects. They could be unraveled by experimental research designs in which engagement is optimized. Still, we believe that this explorative longitudinal study has made an important contribution to increasing our understanding of low-achieving adolescents' writing development and the role of affective, cognitive and behavioral engagement.

Part II

The role of literacy instruction

Chapter 3

Literacy development and engagement in instructional practices in language arts and social studies¹¹

In search of factors that contribute to effective literacy development in adolescence, this longitudinal study explored the behavioral engagement of low-achieving adolescents (N=63) in a variety of literacy instruction contexts in relation to their literacy development. Using insights from prominent approaches on language and literacy development, six literacy instruction contexts were distinguished using the focus (explicit skills instruction or content-oriented instruction) and setting of literacy activities (whole-class, group or individual seat work). We observed the time students were engaged (on-task) in these contexts during language arts lessons and social studies lessons for the first three years of their secondary education (grades 7-9). In addition, students' development in reading and writing proficiency was measured. Associations between engagement in instructional practices and literacy development were analyzed. Results show that literacy instruction was dominated by individual work consisting of explicit skills instruction in the language arts and content-oriented activities in social studies. More importantly however, results show that progression in reading and writing proficiency of low-achieving adolescents is hardly associated with engagement in instructional literacy practices in the observed period. Theoretical and practical implications for literacy development of low-achieving adolescents are discussed.

¹¹ This chapter is based on:

De Milliano, I., Van Gelderen, A., & Sleegers, P. (in progress). Literacy development and low-achieving adolescents' engagement in instructional practices in language arts and social studies.

3.1 Introduction

Learning to read and write well is a necessity for all young people. Literacy is an important contributor to academic and professional success and a basic requirement for participation in modern society. Yet, studies in several countries demonstrate that many adolescents perform at a low level of literacy (Alliance for Excellent Education, 2006; OECD, 2003; 2006; Inspectie van het Onderwijs, 2008). Most of them can read words accurately, but have problems with text comprehension as a result of knowledge deficits (vocabulary, grammar, metacognitive knowledge and conceptual knowledge) and difficulties with self-regulation (Alvermann, 2001; Biancarosa & Snow, 2006; Kucan & Palincsar, 2011). In regard to writing, they face difficulties in formulating ideas, organizing these ideas in an understandable way and producing a text correctly using conventions of spelling and grammar (Graham & Perin, 2007). Such problems with reading and writing will surely lead to problems in civil society and work in which literacy demands are much higher than in school contexts. At the same time, a general decline in engagement in academic reading and writing is observed through the school years (Archambault, Eccles & Vida, 2010; Bruning & Horn, 2000; Durik, Eccles & Vida, 2006; Eccles & Wigfield, 2002; Eccles, Wigfield & Schiefele, 1998; Harter, Whitesell & Kowalski, 1992; Jacobs, Lanza, Osgood, Eccles & Wigfield, 2002). This decline calls into question what role literacy education plays in the literacy development of low-achieving adolescents and whether it facilitates this development.

As education has a primary concern in the development of reading and writing proficiency, it is important to identify instructional factors that play a role. In searching for ways to increase academic success, the concept of engagement has emerged in recent years. Engagement is a multidimensional construct incorporating affective, cognitive and behavioral elements reflecting students' feelings, thoughts and behaviors concerning certain objectives, such as learning in general, reading or writing (Appleton, Christenson & Furlong, 2008; Fredricks, Blumenfeld & Paris, 2004; Guthrie, Wigfield & You, 2012; Linnenbrink & Pintrich, 2003). Although behavioral engagement in instruction activities in the classroom is considered a basic condition to benefit from instruction and to improve in literacy (Pressley et al., 2001; Greenwood, Horton & Utley, 2002), the studies reported in Part I of this dissertation showed that the extent to which low-achieving adolescents improved in literacy proficiency was independent of their observed behavioral engagement in reading and writing in grades 7-9. However, it is possible that the measures used for behavioral engagement were not sufficiently specific to find associations with literacy development of low-achieving adolescents. Although literacy practices in language arts and social studies were

distinguished, no distinction was made in student engagement in instructional activities within these domains. Considering that engagement is responsive to variation in learning contexts (Finn & Rock, 1997), more attention needs to be given to the different types of instructional activities within subject domains.

Therefore, this study analyzes the nature of instruction contexts in which low-achieving adolescents are engaged in a detailed manner. Students' behavioral engagement in specific literacy activities in language arts (Dutch) and social studies was observed from grades 7 to 9 and related to students' development in reading and writing proficiency. The study provides in-depth insights in literacy education for low-achieving adolescents in The Netherlands. In addition, it reveals to what extent engagement in specific instructional practices contributes to students' literacy development. For this detailed analysis focal points were drawn from several theoretical approaches of effective literacy education.

3.2 Theoretical background

3.2.1 Effective literacy development

Several studies deal with the challenge of improving low-achieving adolescents' reading and writing proficiency in engaging ways (Alvermann, 2001; 2002; Biancarosa & Snow, 2006; Graham and Perin, 2007; Kamil, 2003; Kamil, et al., 2008; Phelps, 2005; Torgeson et al, 2007). In addition, insights yielded by research on Content-Based Language Learning (Brinton, Snow & Wesche, 1989; Bygate, Skehan & Swain, 2001; Hajar & Meestringa, 2004), Concept-Oriented Reading Instruction (Guthrie & Wigfield, 2000; Guthrie et al., 2004; Wigfield et al., 2008), Self-Regulated Strategy Development (Graham & Harris, 2012), and Balanced Literacy Instruction (Langer, 2001; Pressley, 2006) are of importance. Although these approaches stem from different research traditions – second language acquisition, reading engagement, cognitive models of writing, and comparisons of successful teacher practices respectively – the instructional practices emphasized in these studies to establish successful literacy education, have much in common.

Development of literacy does not only take place in the language curriculum (first and foreign languages), but also in other school subjects (Britton, Burgess, Martin, McLeod & Rosen, 1975). Literacy practices involve different purposes, forms and processes across varying academic disciplines (Applebee & Langer, 2006; Russell, 1997; Van Gelderen, 1994). They are the main target of instruction in language arts and a crucial instrument for content learning in content areas (Shanahan, 2004). Without specific attention to the jargon and other language difficulties that can impede understanding and remembering subject content, curriculum goals in the content

areas will be difficult to attain (Cummins, 1984; Hajer & Meestringa, 2004). Reading and writing are complex skills and learning to read and write skillfully in different academic domains requires a concerted effort across disciplines and throughout education (Graham, 2006). To achieve this, content area teachers do not have to become literacy teachers, but they have to facilitate literacy practices specific to their subject so that students read and write the type of texts that are necessary to learn history, science or any other subject-area (Biancarosa & Snow, 2006). Ideally, coordination between subject domains takes place to provide sufficient support for students' cross-disciplinary literacy development.

A second feature of effective literacy instruction is interactive learning, such as whole-class discussion and group seat work (Guthrie et al., 2004; Pressley, 2006). These types of settings provide opportunities for natural interaction and language production which are important for improvement in writing and speaking skills. Bygate, Skehan and Swain (2001) showed, for example, that second language learners need to be challenged to produce language and receive feedback for producing correct language. In addition, interactive learning allows for good and bad practices to be modeled and discussed by teachers and peers. Modeling and collaborative knowledge construction are both found to be very important for the improvement of reading (Palinscar & Herrenkohl, 2002; Vaughn, Klinger & Bryant, 2001; Klinger, Vaughn, Arguelles, Hughes & Leftwich, 2004) and writing proficiency (Rijlaarsdam et al., 2008; Yarrow & Topping, 2001). Moreover, interactive learning may increase engagement, as students are found to work more effectively and enjoy participating in group activities in which they share ideas and collaboratively construct knowledge (Guthrie, McRae & Klauda, 2007; Johnson & Johnson, 2009).

A third feature of effective literacy instruction is the embedding into interesting contents. The idea is to make contents of reading and writing tasks of prime importance and to approach technical facets of language as instrumental for understanding and transmitting interesting contents. This idea is central in Content-Based Language Learning focusing primarily on second language learners (Brinton et al., 1989; Bygate et al., 2001). Meanwhile it is also promoted for instruction of low-achieving adolescents and incorporated in Concept-Oriented Reading Instruction (Guthrie et al., 2004), Language Directed Subject Learning (Hajer & Meestringa, 2004) and Balanced Literacy Instruction (Pressley, 2006). The main premise of these content-oriented approaches is that literacy instruction should involve communication about meaningful contents instead of teaching it as a set of isolated sub skills (such as grammar, vocabulary, spelling and fixed strategies). This premise goes back to the comprehensible-input hypothesis of Krashen (1985) for second-language acquisition. This hypothesis stated that language acquisition is best served by frequent exposure to

diverse and meaningful language allowing learners to gradually acquire a rich vocabulary and grammar. It is argued that reading and writing about contents that connect to students' academic curriculum and personal interests facilitates their engagement in literacy tasks and thereby also their proficiency in dealing with them (Biancarosa & Snow, 2006; Guthrie et al., 2012; Pressley, 2006). Studies evaluating the effects of such content-oriented language learning show positive but modest effects on literacy achievement (August, Branum-Martin, Cardenas-Hagan & Francis, 2011; Echevarria, Short & Powers, 2006; Elbers, 2011; Guthrie, Hoa et al., 2007; Kasper, 1997; Lee; Maerten-Rivera, Penfield, Leroy & Secada, 2008; Raaphorst, 2007; Short, Echevarria & Richards-Tutor, 2011; Song, 2006; Vaughn et al, 2009).

Finally, some authors emphasize that students should also receive explicit instruction in specific skills needed for reading and writing, such as how to use vocabulary, grammar, spelling and metacognitive knowledge (Graham & Harris, 2012; Langer, 2001; Pressley, 2006; Wong, Butler, Ficzere & Kuperis, 1996). Low-achieving adolescents rarely need help with the decoding of words. Their most common problems are related to text comprehension and producing comprehensible texts (Biancarosa & Snow, 2006; Graham & Perin, 2007). Therefore, a focus on meaning-making activities (such as use of flexible strategies and knowledge of characteristics of text genres) is more in place than isolated exercises in for example decoding of words or reading fluency. The role of decoding efficiency in adolescents' reading comprehension has been demonstrated to be negligible in several empirical studies (Kintsch & Kintsch, 2005; Pressley et al., 2009; Van Gelderen, Schoonen, Stoel, De Glopper & Hulstijn, 2007). A meta-analysis into interventions directed at reading comprehension skills of adolescent struggling readers showed that effects are larger when interventions are aimed at increasing comprehension skill and reading strategies instead of when they are aimed at increasing decoding and reading fluency (Edmonds et al., 2009). For writing, there is ample evidence that a focus on strategic approaches accompanied by frequent and diverse writing practice is preferable in comparison to isolated grammar exercise (particularly naming word classes and parsing). Meta-analyses of writing intervention programs revealed large effects of strategy instruction, instruction in making summaries and peer assistance. The smallest and even negative effects were found for traditional grammar instruction (Ellis, 2002; Graham & Harris, 1993; Graham & Perin, 2007; Hillocks, 1984).

3.3 The present study

Summarizing, the insights from the literature point at the importance of cross-disciplinary, interactive, content-oriented and explicit (but not isolated) literacy instruction. To explore to what degree the actual instructional practices in language arts and content areas conform to these ideals, literacy contexts were distinguished using two dimensions representing the focal points of effective literacy development discussed above. The first dimension pertains to the focus of literacy activities (explicit skills or content-oriented instruction), the second dimension concerns the classroom setting of literacy activities (whole-class, group or individual seat work). By combining these dimensions, six instruction contexts emerge in which students participate in language arts and content area classrooms: 1) Whole-class x Explicit skills instruction (WE), 2) Group x Explicit skills instruction (GE), 3) Individual x Explicit skills instruction (IE), 4) Whole class x Content-oriented instruction (WC), 5) Group x Content-oriented instruction (GC), and 6) Individual x Content-oriented instruction (IC). Examples of literacy activities within these six contexts are shown in Table 3.1.

Table 3.1 Examples of literacy instruction using a dimensional approach

	Explicit skills instruction (E)	Content-oriented instruction (C)
Whole Class (W)	(WE) Teacher is lecturing on grammar rules, while the students take notes.	(WC) Teacher is reading a novel/content area text aloud while students read along.
Group (G)	(GE) Students play in groups of four a word game to exercise with school language.	(GC) Students work in teams on a report on the Golden Age using multiple written sources.
Individual (I)	(IE) Students exercise individually with spelling assignments in their textbooks.	(IC) Students explore individually the Internet collecting information in preparation of a presentation.

The specific questions addressed in this study are as follows:

- 1) What types of literacy instruction are offered to low-achieving adolescents in regular language arts and content area lessons across grades 7 to 9 and how engaged are students in each of them?

- 2) Does degree of engagement in each of the discerned types of literacy instruction contribute to explaining development in reading and writing proficiency?

3.4 Method

3.4.1 Participants

Low-achieving adolescents are defined in this study as students in the lowest 30-percentile of academic skills as measured by an aptitude test measuring language, reading and mathematics skills prior to admission of Dutch secondary education. In the Netherlands, these low-achieving students are enrolled in the two lowest tracks of prevocational secondary education. The sample in grade 7 involved 63 students (36 boys and 27 girls) whom were recruited out of 10 classes from 9 different ethnically mixed schools in the lowest tracks of secondary prevocational education. In grade 7 the students were between 12 and 14 years old ($M=14.7$). Of the sample in grade 7, 32 students were native speakers of Dutch; the other 31 students were non-native speakers of Dutch with various ethnic-linguistic backgrounds. Students diagnosed with a learning or behavioral disorder (e.g. dyslexia, ADHD), were excluded from our sample in order to ascertain that differences in literacy development were not related to specific learning or behavioral disorders. From each class 6 to 7 students were selected. During the period of 3 school years in total 11 students dropped out of the study for several reasons. Of these students one became chronically ill, one changed school without possibility for following him and 9 dropped out because they felt too burdened by the requirements of research participation. Ultimately, the sample for which we had complete data consisted of 52 students distributed over 28 classes and 11 schools in grade 9. Table 3.2 reports some descriptive characteristics of our sample.

Table 3.2 Numbers of schools, classes, students and teachers in the sample for each grade

	Grade 7 (2007-2008)	Grade 8 (2008-2009)	Grade 9 (2009-2010)
Number of schools	9	9	11
Number of classes	10	12	28
Number of students	63	55	52
Gender (boys : girls)	36:27	31:23	30:22
Ethnic-linguistic background (native Dutch: non-native Dutch)	32:31	28:27	26:26
Number of language arts teachers	9	10	24
Gender (men : women)	2:7	2:8	8:16
Years of teaching experience	$M=9.7; SD=10.2$	$M=7.7; SD=4.9$	$M=17.8; SD=13.5$
Number of social studies teachers	9	10	18
Gender (men : women)	6:3	6:4	7:11
Years of teaching experience	$M=6.1; SD=9.9$	$M=4.3; SD=3.1$	$M=10; SD=9.8$

3.4.2 Measures

The following measures were used in this study. First, a reading and writing proficiency test was developed to examine students' literacy development. Second, an observational scheme was developed to register detailed information about the instructional practices and the level of students' engagement. Supplementary to the classroom observations, the textbooks used were inspected in terms of focus and setting as they are important tools for learning and teaching. Also, a teacher interview guideline was composed to acquire information about the schools' language policies and coordination between subject domains. As insights from the textbook analyses and teacher interviews are only used for interpreting the results from the classroom observations, information and results from the textbook analyses and teacher interview are reported in Appendix A en B.

3.4.2.1 Reading comprehension proficiency

The SALT reading comprehension proficiency test (Van Steensel, Oostdam, & Van Gelderen, 2012.) was specifically designed for Dutch students in the lowest tracks of secondary education. It consists of nine tasks comprising one or two texts and comprehension questions about those texts (multiple choice and short-answer formats). The texts cover four different genres: narrative, argumentative, expository, and instructive. They were selected from four media types which students are likely to come across in their daily lives: (school) books, newspapers and magazines, official documents, and the internet. With respect to text format, a distinction was made between continuous texts and discontinuous texts (containing also graphs, pictures and figures). The topics of the texts were selected on the basis of their relevance for students' socio-cultural and educational reality. They cover personal issues (negative stereotyping, self-confidence), school subjects (history), human interest, social issues (crime, the environment), rules and regulations, and leisure time activities. The test items were based on the distinction between lower, intermediate and higher levels of understanding, labeled as 'retrieving', 'interpreting', and 'reflecting', respectively (Van Steensel et al., 2012; OECD, 2003). The test consisted of 65 items and the Cronbach's alpha was .79 in grade 7, .85 in Grade 8 and .82 in grade 9. Next, sum scores representing reading comprehension proficiency across grades 7 to 9 were computed. The measurement of reading comprehension proficiency across grades shows good reliability (Cronbach's alpha is .90).

3.4.2.2 Writing proficiency

The writing proficiency test consisted of three writing assignments in which students were asked to write a text. Each assignment specified a realistic communicative task

connected to young people's daily lives. The selection of assignments was based upon a pretest among a group of students from the same population, containing more diverse writing assignments. Students commented on these assignments and the assignments that were received most positively were selected for the final test. The three assignments covered a range of text types (instructive, argumentative and narrative). In Assignment 1, students were asked to write a letter to two students from Belgium who were going to visit the Netherlands as part of an exchange program. Their task was to provide instructions on where to meet, what to bring, etcetera. In Assignment 2, students were asked to imagine they were taking part in a competition for which they were saving coupons on candy bar wrappers in order to receive two free cinema tickets. However, they were unable to find wrappers with coupons, even though the deadline had not passed. The assignment was to write a letter to the candy bar factory, arguing that it was not their fault they were not able to send the required number of coupons and convincing the recipient to send them the cinema tickets. In Assignment 3, students were asked to write a short sequel to a story they had read, with a given start end closing sentence.

Each assignment was rated by two independent raters using a primary trait scoring procedure (Lloyd-Jones, 1977). For each assignment, the central communicative objective – or primary trait – was formulated. On the basis of this primary trait, a set of rating criteria were specified (e.g. 'letter conventions', 'line of reasoning', and 'consistency with original story'). The raters had to use these criteria to assign each student a single score. To arrive at this score, raters were provided with a scale of five benchmark texts. This scale was developed in a separate session in which a sample of forty texts was rated by two independent raters, following a procedure based on Blok (1986) and adopted in Schoonen et al., 2011). The five scale points represented the 10th, 25th, 50th, 75th and 90th percentiles of these forty texts. The final interrater reliability of the scores was satisfactory: For Assignment 1, $r = .89, .82$, and $.77$ in grade 7, 8 and 9 respectively; for Assignment 2, $r = .88, .83$ and $.75$ in grade 7, 8 and 9 respectively; and for Assignment 3, $r = .88, .86$ and $.75$ in grade 7, 8 and 9, respectively. Across all three years, one rater remained the same in order to avoid differences in severity of rating and to make the ratings comparable over years. Writing proficiency in every grade was represented by a sum score of the scores for assignment 1, 2 and 3 (grade 7 Cronbach $\alpha = .69$, grade 8 Cronbach $\alpha = .71$, grade 9 Cronbach $\alpha = .52$). Next, a sum score representing writing proficiency across grades 7 to 9 was computed. The reliability of this score was good (Cronbach $\alpha = .83$).

3.4.2.3 Engagement in literacy contexts

In each grade, 2 language arts lessons and 2 social studies lessons were selected for observation. We consulted with the teachers giving the lessons for this selection to make sure that literacy activities would take place in a regular way (as opposed to special activities such as tests or out-of-class activities).

To examine students' exposure to and behavioral engagement in literacy activities in language arts and content area classrooms, real-time classroom observations were conducted in language arts and social studies lessons. Based on a review of the relevant literature, an observational coding system and accompanying manual to document students' exposure to and behavioral engagement in literacy learning contexts was developed for the present study (Connor, Morrison & Petrella, 2004). Observations were conducted at the student level in 1.5-min blocks (time-sampling) in which five aspects for every target student present (ranging from 1 to 7 students per class) were coded in a stepwise way. Researchers identified: (1) the occurrence of literacy activities (reading, writing or other academic or non-academic activities), (2) the setting of the activities (whole-group, small groups or individual seat work), (3) the focus (explicit literacy instruction or content-oriented literacy practices) and specific contents of the activity (spelling and grammar, vocabulary, metacognitive knowledge, text reading, text writing, integrated practices, and finally (4) students' behavioral engagement (on-task or off-task). A description of the codes from the coding manual is included in Table 3.3.

By summing the number of episodes (of 1.5 minute) in which instructional activities were provided by the teacher and in which students were engaged (on-task), it was possible to compute how often the six literacy contexts occurred and how much time students were engaged in each of them. Episodes for which it was not clear whether students were engaged or were not engaged were excluded from the analyses. Since the duration of lessons varied over schools, the observation times differed for individual students. Therefore, the engagement scores were corrected for observation time. First, time spend on a particular literacy activity was divided by the total observation time. Next, the time that students were engaged in the particular literacy activities was multiplied with the quotient of the time for the activity and total observation time¹².

¹² An example of how the scores were corrected for observation time: Student 1's time-on task in literacy activity = time observed: 50 minutes; time allotted to literacy activity: 30 minutes; time engaged in literacy activity: 15 minutes = $(30/50)*15 = 9$ minutes. Student Y's time engaged in literacy activity = time observed: 100 minutes; time allotted to literacy activity: 30 minutes; time engaged in literacy activity: 15 minutes = $(30/100)*15 = 4.5$ minutes.

Table 3.3 Codes and explanations from the observation manual

1) Activities. Activities students need to be engaged in. Typically, these reflect the instructional demands given by the teacher.
<ul style="list-style-type: none"> • <i>Nonacademic activities.</i> Activities that have no academic focus or value. E.g. activities concerning order or organization, such as paperwork or transition. • <i>Other academic activities.</i> Activities having an academic focus or value, but are not concerned with the improvement or acquisition of literacy-related skills and knowledge. • <i>Literacy academic activities.</i> Activities directed at reading comprehension, writing or skills such as spelling, grammar, vocabulary, genre knowledge, and strategies in reading and writing.
2) Setting. Setting of activities which typically reflect the instructional demands given by the teacher.
<ul style="list-style-type: none"> • <i>Whole-class.</i> Situations in which the teacher is the primary director of students' attention. • <i>Group.</i> Refers to situations in which students are working towards common goals independently. The teacher is supervising and coaching the students. E.g. students work in pairs on a project or textbook assignment. • <i>Individual.</i> Refers to situations in which students are working alone independently. The teacher is supervising and coaching the students. E.g. students complete worksheets individually.
3) Focus. Embedding and the types of content of the literacy activities.
<ul style="list-style-type: none"> • <i>Explicit skills instruction.</i> Explicit instruction and exercise of spelling, grammar, vocabulary, dictionary use, text characteristics, strategies, text analysis and writing. <ul style="list-style-type: none"> ◦ <i>Spelling, grammar and punctuation.</i> ◦ <i>Vocabulary</i> (vocabulary, idiom, and dictionary use). ◦ <i>Metacognitive knowledge</i> (knowledge of strategies for reading and writing and of text characteristics). ◦ <i>Isolated training of reading and writing skills</i> (reading and writing exercises without connection to the understanding of contents of texts or composition goals). • <i>Content-oriented literacy activities.</i> Reading and writing with a focus on comprehension or communicating contents. E.g. reading a novel or writing a summary in preparation of a test. <ul style="list-style-type: none"> ◦ <i>Content area textbook reading and writing.</i> Activities exclusively concerned with reading and writing short passages in content area textbooks to acquire and demonstrate content knowledge. ◦ <i>Instrumental reading</i> (reading for understanding contents; reading is instrumental instead of the object of instruction). ◦ <i>Instrumental writing</i> (writing for producing comprehensible texts; writing is instrumental instead of the object of instruction). ◦ <i>Instrumental reading and writing</i> (combined reading and writing with a focus on contents).
4) Behavioral engagement. Participation level of the student.
<ul style="list-style-type: none"> • <i>On-task.</i> The student is participating. E.g. the student is working on a task, continuing an activity, answering a question, listening to the teacher or a classmate making an on-task contribution. • <i>Off-task.</i> The student is not participating. E.g. the student is disrupting a classmate or interrupting the teacher with nonacademic issues, participating in a classmate's off-task behavior or visiting the toilet. • <i>Doubtful.</i> It is not clear whether the student is participating or not. E.g. the student is staring aimlessly.

Observations of lessons were conducted by the researcher and trained research assistants during regular lessons throughout the school day depending on students' timetable. Across a total of 167 hours of real-time observation, 8 hours were coded simultaneously by two independent observers. This means that 267 1.5-min segments were coded twice (5% of a total of 6,680 1.5-min segments). The inter-observer reliabilities were high (Cohen's Kappa was .89 for literacy activities, .87 for content, .93 for learning structure, and .80 for behavioral engagement). There were no indications of systematic observer differences or decay in observers' reliability over time. On average, each student was observed for a total of 12 hours across grades 7 to 9.

3.4.3 Procedure

The SALT reading comprehension test and the 3 writing assignments were administered three times: in Grade 7 (spring 2008), in Grade 8 (spring 2009) and in Grade 9 (spring 2010). They were administered to whole classes. The reading comprehension test took three sessions of 45 minutes; the writing assignments were administered in two sessions of 45 minutes. Administration time was calculated to assure that all students were able to complete the test and writing assignments within the allotted time. All sessions were introduced by a researcher or a trained test assistant and were also attended by a teacher to assist in maintaining order.

Furthermore, in each grade (7-9), one regular lesson in the fall semester and one regular lesson in the spring semester of both subjects were observed. Subsequently, the teachers were yearly interviewed. At the end of the three-year data collection, the textbooks for language arts and social studies were analyzed.

3.4.4 Missing data

Of the dataset 8.7 percent was missing due to students being absent at one or more points of measurement as a result of illness, problems at school or at home and moving. EM estimation was used to estimate and impute the missing data on the dependent variables: reading and writing proficiency. For the independent variables (engagement in literacy instruction), the scores were averaged over grades. Students, who participated only in grade 7, received the score of grade 7 as their average. As a check, all analyses were conducted both with and without imputed missings ($N=52$ versus $N=63$). In all the analyses the patterns were similar.

3.4.5 Statistical analyses

Because the 63 students taking part in this study come from 10 different classes from 9 different schools¹³, it was first checked whether multi-level analyses were necessary (Rasbash et al., 2000). Results showed that adding a class level to the student level does not result in a significant improvement of the model fit. Therefore, analyses were carried out with only the student level.

Associations of engagement with development in reading and writing proficiency were tested for each instruction variable separately using linear regression. In all analyses, proficiency in reading (or writing) in grade 7 was entered as the first variable in explaining proficiency in grade 9. Change scores were not used to analyze development, since several studies have shown the regression approach to be superior (Allison, 1990; Pike, 2004; Senn, 2006; Tu, Gunnell & Gilthorpe, 2008). Effects of engagement on development were tested for three time spans: grade 7 to 8, grade 8 to 9, and grade 7 to 9. The dependent variables in each analysis were the proficiency posttest scores (grade 8 or 9).

3.5 Results

3.5.1 Literacy instruction

Table 3.4 gives an overview of the time spend on the six literacy contexts in language arts and social studies lessons and the time that students were engaged (on-task) in these contexts.

In regard to setting, the results in Table 3.4 show that in the language arts lessons most time was spent on individual activities (64% of total observed time) followed by whole class activities (30%). Little time was spent on group activities (6%). Similarly, in the social studies lessons the largest proportion of the time was reserved for individual activities (78%). Contrary to the language arts lessons, however, in the social studies lessons less time was spent on whole class activities (9%) and more time was assigned to group activities (13%). Concerning the focus of the activities, the results in Table 3.4 show that in the language arts lessons about three quarter of the time was spent on explicit skills instruction (76%). A quarter of the time (24%), activities were content-oriented. In the social studies, these proportions were quite different. The instructional practices were nearly exclusively content-oriented (92%). About 8% percent of the time was spent on explicit skills instruction. When the setting and focus are combined into literacy contexts, the results in Table 3.4 show that the instructional practices in language arts lessons consisted mainly of individual and whole class

¹³ School and class level practically coincide in this study, since 10 classes come from 9 different schools, so testing for a school level next to a class level is not feasible.

explicit skills instruction (44% and 28% respectively) next to individual content-oriented instruction (20%). The instructional practices in social studies lessons consisted predominantly of individual content-oriented instruction (75%) combined with some group content-oriented instruction (12%).

Table 3.4 Average time in two lessons in each of the grades (in minutes) spent on the six literacy contexts in language arts and social studies lessons in grades 7 to 9 and average time in which students were engaged (on-task).

Literacy Contexts (Setting x Focus)	Language arts (N=60) ^a		Social studies (N=63)	
	Mean (SD)	% of total time	Mean (SD)	% of total time
(WE) Whole class x Explicit skills				
Time spent	7.5 (6.1)	28	1.0 (1.5)	4
Time engaged	7.0 (5.8)	36	0.8 (1.1)	5
% Time engaged	93		80	
(GE) Group x Explicit skills				
Time spent	0.8 (2.4)	4	0.2 (0.8)	1
Time engaged	0.2 (0.7)	1	0.2 (0.7)	2
% Time engaged	25		100	
(IE) Individual x Explicit skills				
Time spent	11.9 (9.5)	44	0.6 (1.5)	3
Time engaged	7.5 (6.0)	39	0.4 (1.1)	3
% Time engaged	63		67	
(WC) Whole class x Content-oriented				
Time spent	0.4 (0.9)	2	1.1 (1.3)	5
Time engaged	0.4 (0.9)	2	1.0 (1.2)	6
% Time engaged	100		90	
(GC) Group x Content-oriented				
Time spent	0.4 (1.9)	2	2.5 (6.2)	12
Time engaged	0.4 (7.7)	2	1.9 (4.6)	12
% Time engaged	100		76	
(IC) Individual x Content-oriented				
Time spent	5.8 (6.5)	20	16.2 (12.0)	75
Time engaged	3.9 (4.6)	20	11.1 (9.0)	72
% Time engaged	67		69	

a) For language arts the sample consists of 60 instead of 63 students because 3 students were absent during classroom observations in Grade 7 and ultimately dropped out of the study.

Concerning the level of engagement achieved (% time engaged), the results in Table 3.4 show that in both subjects the levels of engagement were highest in the whole class instruction settings. On average, students were engaged 90 percent of the time

spend on this setting¹⁴. The lowest levels of engagement were obtained during individual seat work. In this setting, students were only two third of the time engaged (67%) on average. During group seat students were engaged for about three quarter of the time (75%). Furthermore, the results in Table 3.4 show that the level of engagement was somewhat higher in activities that were content-oriented (84%) than in activities involving explicit skills instruction (71%).

To obtain a better understanding of the types of literacy activities enacted within the contexts, in Figure 3.1, the scores underlying the focus dimension (see Table 3.3) are depicted. For language arts lessons, the figure shows that explicit skills instruction concerned mostly aspects of spelling and grammar (35%) followed by completing text book assignments for isolated training in reading and writing proficiency (23%), metacognitive knowledge (16%), and vocabulary (6%). These findings point to a substantial amount of explicit literacy instruction that is more focused on exercise in decoding, fluency, spelling and grammar than on meaning-making activities, such as the use of flexible strategies, knowledge about characteristics of text genres and the explanation of difficult vocabulary in context.

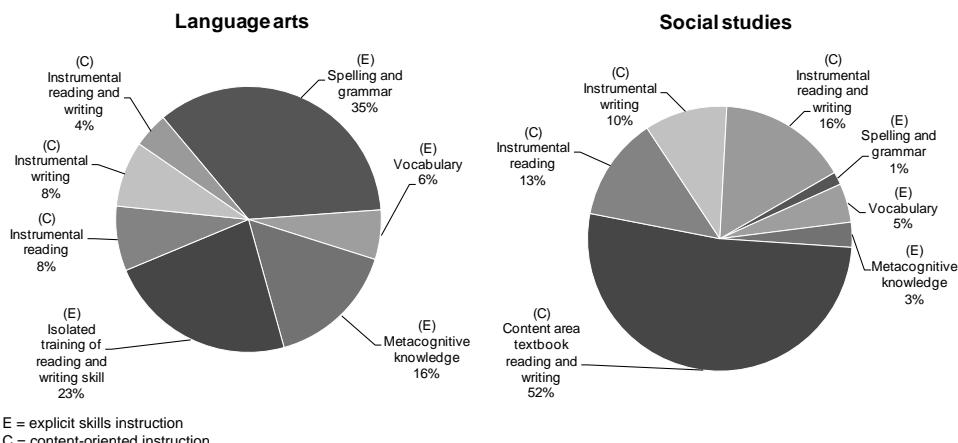


Figure 3.1. Distribution of types of literacy activities to content in language arts and social studies lessons across grades 7 to 9.

Furthermore, Figure 3.1 shows that content-oriented literacy activities in the language arts lessons consisted mostly of separate instrumental text reading and writing (16%). To a lesser extent instrumental reading and writing were combined (4%). For social

¹⁴ Average of time engaged in WE language arts, WE social studies, WC language arts and WC content areas = 93% + 80% + 100% + 90% = 90%.

studies, the results in Figure 3.1 show that the content-oriented activities consisted predominantly of content-area textbook reading and writing (52%). In addition, some time was spent on assignments in which student read or write more extensive texts to acquire or demonstrate their content knowledge such as writing reports or summaries using multiple written sources (39%). Some time was reserved for explicit skills instruction. If this was the case, time was spent on instruction about subject-specific vocabulary (5%) and metacognitive knowledge (3%). Little time was directed at instruction in spelling and grammar (1%).

3.5.2 Engagement in literacy instruction in relation to literacy development

To answer our second research question, it was first tested whether students progressed in reading and writing proficiency through the grades. Repeated measures ANOVA were conducted with the scores for reading comprehension proficiency and writing proficiency in grades 7-9 as dependent variable. The results show that students progressed in reading comprehension proficiency from grade 7 to grade 9 ($F_{(2,124)}=37.87, p=.000$, partial $\eta^2=.38$). Within subject contrasts show that also the difference between grade 7 and grade 8 is significant ($F_{(1,62)}=6.65, p=.012$, partial $\eta^2=.09$). In addition, the difference between grade 8 and grade 9 is significant ($F_{(1,62)}=43.17, p=.000$, partial $\eta^2=.41$). The effect sizes indicate that growth in reading comprehension proficiency is quite strong, especially from grade 8 to 9. But students improved in reading comprehension proficiency in each grade. Also for writing, the results show that students progressed in writing proficiency from grade 7 to 9 ($F_{(2,124)}=16.123, p<.001$; partial $\eta^2=.206$). Within subject contrasts (repeated) show that also the differences between grades 7 and 8 is significant ($F_{(1,62)}=16.60, p<.001$; partial $\eta^2=.211$). In addition, the difference between grade 8 and 9 is significant ($F_{(1,62)}=4.552, p<.05$; partial $\eta^2=.037$). The effect sizes indicate that growth in writing proficiency is rather strong, especially from grade 7 to 8. But students improved in writing proficiency in each grade.

Following, the associations of the engagement variables in the six literacy contexts with growth in reading and writing proficiency were analyzed separately by means of linear regression for three time spans (7-8, 8-9, and 7-9). For reading comprehension proficiency in all analyses, results showed that the scores in the previous grade predicted later proficiency significantly and quite substantially (reading: growth 7-8 $r^2=.49, p< .001$, growth 8-9 $r^2=.69, p<.001$, growth 7-9 $r^2=.54, p<.001$). The residual variances in reading comprehension proficiency for all three time spans were not significantly explained by students' engagement in any of the six literacy contexts. These results indicate that engagement in any of the literacy instruction contexts

neither in language arts lessons nor in social studies contributed to reading comprehension development.

For writing proficiency, in all analyses, results showed that the scores in the previous grade predicted later proficiency significantly and quite substantially (writing: growth 7-8 $r^2=.53$, $p<.001$; growth 8-9 $r^2=.23$, $p<.001$; growth 7-9 $r^2=.17$, $p<.001$). Furthermore, the findings indicated that engagement in all but one instruction context did not add significantly to the regression equation. However, engagement in whole class isolated skills instruction (WI) in language arts predicted growth between grade 8 and 9 ($Beta=.31$, $p=.003$, and between grade 7 and 9 ($Beta=.31$, $p=.005$). In both cases 10% of the variance was explained. A closer investigation of the contents addressed during the language arts lessons revealed that engagement in instruction that was directed at metacognitive knowledge explained 6% of the variance in writing proficiency ($Beta =.25$, $p=.022$), while engagement in instruction activities directed at spelling and grammar, vocabulary, separate training of reading and writing, or content oriented text reading and text writing did not contribute to the explanation of differences in writing development. In Figure 3.2, the developmental patterns are visualized based upon a medium split. Figure 3.2 shows that students who were more frequently engaged in whole class isolated skills instruction, and who were more engaged in activities involving metacognitive knowledge in particular, showed more improvement in writing proficiency between grade 8 and 9, than peers who were less frequently involved in these types of literacy instruction.

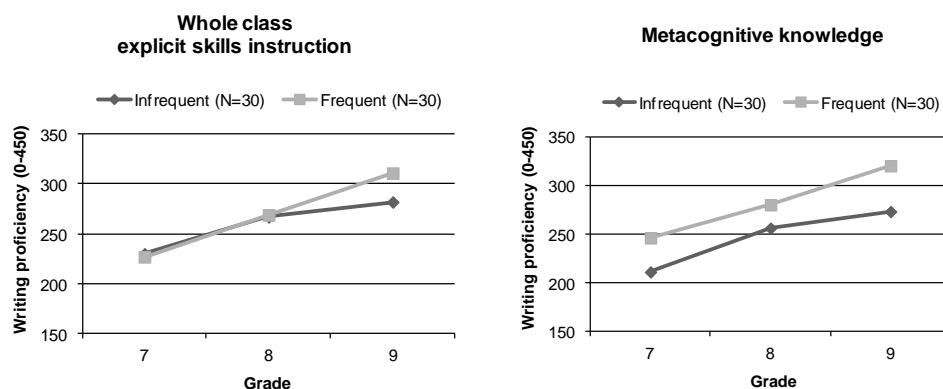


Figure 3.2. Writing development of highly and poorly engaged students in whole class explicit skills instruction (left) and in instruction directed at metacognitive knowledge (right) in language arts lessons.

For social studies, it was found that engagement in one instruction context explained writing proficiency development. Engagement in whole class content-oriented instruction (WC) explained 5% of the variance in writing improvement between grade 7 and 9, ($Beta=-.24, p=.05$). The standardized beta is negative, indicating that students who were more engaged in whole-class content-oriented instruction, showed smaller improvements in writing proficiency. Closer investigations of the specific contents addressed during the social studies lessons (e.g. vocabulary, metacognitive knowledge, content area reading etc.) did not show any specific contents having significant effects.

3.6 Conclusions and discussion

The main objective of this study was to examine the role of engagement in literacy instruction in development of reading and writing proficiency of low-achieving adolescents. In this study, special attention was given to specific types of instruction within language arts and social studies. Classroom practices were analyzed based on favorable features of literacy teaching to low achieving adolescents proposed in the literature. Although this literature is diverse and emphasizes different issues, such as Content-Based Language Learning, Concept-Oriented Reading Instruction, Self-Regulated Strategy Development and Balanced Literacy Instruction (Brinton et al., 1989; Bygate et al., 2001; Graham & Harris, 1993; Guthrie & Wigfield, 2000; Guthrie et al., 2004; Hajer & Meestringa, 2004; Langer, 2001; Pressley, 2006; Wigfield et al., 2008), the similarities are much larger than the differences. We identified several instructional features that are recommended such as coordination between language arts and content area lessons, interactive learning opportunities, content-oriented instruction of reading and writing and explicit skills instruction.

In line with other studies (Creese, 2005; Elbers, 2011; Raaphorst, 2007), the results of this study showed that the literacy practices observed did not manifest much of the abovementioned features. The language arts and social studies lessons remained quite separate domains in which literacy had a different role. Literacy instruction in language arts was characterized by a strong focus on explicit skills instruction, whereas the literacy practices in social studies were predominantly content-oriented and instrumental for learning subject matter. However, a quarter of the literacy activities in language arts lessons was content-oriented. Thus, literacy was not treated as a series of isolated skills only, but as something that needs to be practiced in a content oriented way too. Reversely, in social studies, students were sometimes engaged in language directed activities needed for understanding contents, such as difficulties with vocabulary or idiom. Furthermore, in both subjects literacy instruction was characterized by an emphasis on individual and whole class activities

and very little group activities. These findings correspond to other studies who found that whole-class instruction and individual seat work are dominant in daily classrooms (Bean, 2000; Langer, 2001; Bolhuis & Voeten, 2001; Veenman, Kenter & Post, 2000; Wade & Moje, 2000).

Results of the study showed that although the adolescents in our study are low-achieving and perform below levels required in school and at the workplace, they still improve in reading and writing proficiency in the first three grades of prevocational secondary education. Contrary to pessimistic views about literacy development of low-achieving adolescents (cf. Alvermann, 2001, Biancarosa & Snow, 2006; Graham & Perin, 2007; Inspectie van het Onderwijs, 2008; Hofman et al., 2009; Kucan & Palincsar, 2011), these findings are encouraging in light of the importance of literacy skills for youngsters' academic, professional and societal careers.

Because there was a marked growth in both reading and writing proficiency of the students', we could pursue the goal of this study, which was to investigate to what degree their growth in literacy proficiency can be explained by degrees of engagement in the distinguished types of instructional practices in literacy in language arts and social studies. Degree of engagement is assumed to be an important predictor of academic achievement (Appleton et al., 2008; Baker & Wigfield, 1999; Fredricks et al., 2004; Guthrie & Wigfield, 2000; Guthrie et al., 2012; Linnenbrink & Pintrich, 2003). This study allowed testing this assumption while taking into account differences in literacy learning contexts at school. Results showed that although low-achieving adolescents do progress in reading comprehension proficiency, the degree of engagement in instructional practices in language arts and social studies did not contribute to explaining reading comprehension development among them. Instead, reading comprehension development was strongly dependent of students' reading comprehension proficiency scores in the former grades (r^2 varied between .49 and .69), which means that the room for other factors to influence reading development was limited, however not too limited for engagement in instructional activities to make a difference. Apparently, these activities did not make that difference, suggesting that students who were more engaged in instructional practices do not profit from this engagement compared to students who were less engaged. This raises questions about the quality of the instructional contexts.

For writing proficiency, small amounts in students' growth could be explained, especially between grade 8 and 9. Engagement in whole-class explicit skills instruction in language arts lessons explained writing development to a small degree. Students who were more engaged in this type of instruction showed larger improvements in writing proficiency. Exploration of the more specific activities underlying this relation showed that particularly engagement in explicit instruction directed at metacognitive

knowledge was associated with improvement in writing proficiency. It is possible that metacognitive knowledge for writing in our group of low achieving students initially is very low, giving room for some improvement, especially in the last two years. A study of Trapman, Van Gelderen, Van Steensel, Van Schooten and Hulstijn (2012) showed that the low achieving students participating in this study possess little metacognitive knowledge. They are therefore likely to profit from explicit knowledge of how to use self-regulatory strategies and text characteristics. This finding supports the value that is attached to explicit strategies instruction for improving writing proficiency (Graham & Harris, 1993; Graham & Perin, 2007; Hillocks, 1984).

A negative association with writing development from grade 7-9 was found for engagement in whole class content-oriented instruction in social studies. Inspection of the form of this association showed that it resulted from the students starting with the lowest writing proficiencies in grade 7 to catch up with the most proficient writers in grade 9. For that reason, the result can be explained by the initial extreme low levels of writing of the low engagement group, given that a causal relation between low engagement and writing growth is highly unlikely. The extremely low writing level at the start of the study made it possible for this group to grow more in proficiency than the average. Therefore, we attach little value to this finding.

Together, the findings suggest that there were only significant associations between students' engagement in literacy instruction across the curriculum and their writing development, but not with their development in reading comprehension proficiency. That some variance in writing development could be explained does not alter the fact that overall little variance in literacy development could be explained by the students' engagement in instructional activities. Although empirical studies showing associations between engagement in the context of school instructions and literacy development over a period of several years are absent, many theorists assume that positive associations do exist.

There are several possible explanations for these findings. First, in language arts, only a small part of the instructional practices students were engaged in, were content-oriented. Inspection of the textbooks (Appendix A) showed that texts and task in the language arts connected to the school (theory texts, literary stories), social (e-mails, postal cards, travel guides) and future professional lives (application forms, recipes, prescriptions, manuals) of youngsters, but that the topics students read and wrote about remained quite arbitrary. Examples are exploring travel guides for an imaginary holiday or writing a report on a traineeship that has never been executed. It is questionable whether students perceive such tasks as interesting and functional at the time they are presented in the classroom. Also, during whole-class instruction in language arts, the topics or value of texts were only occasionally discussed. Rather,

language arts teachers paid attention to the skills of text reading and analysis by asking students to read the texts aloud (aimed at enhancing decoding and fluency) and posing question, such as “*What is the title of this text?* or “*How many paragraphs does this text have?*” So, although we found that the textbooks contain texts and tasks connected to the real world of youngsters, many literacy practices in language arts eventually concern literacy knowledge and skills in which technical aspects of language are the main target of instruction while the contents of texts disappear from the students’ sight. Frequent engagement in such practices may not be facilitating low-achieving adolescents’ literacy proficiency.

A second explanation may be that explicit instruction in language arts was directed for a large part at decoding and fluency, spelling and grammar (58%) and to a much lesser degree at vocabulary and metacognitive knowledge (22%). This contrasts with a number of studies showing that especially explicit instruction in vocabulary and metacognitive knowledge is important for literacy proficiency of low-achieving adolescent (Alfassi, 2004; Chambers Cantrell, Almasi, Carter, Rintamaa & Maden, 2010; De La Paz & Graham, 2002; Edmonds et al., 2009; Gersten, Fuchs, Williams & Baker, 2001; National Reading Panel, 2000; Palinscar & Herrenkohl, 2002; Snow, Lawrence & White, 2009; Swanson, 1999; Taboada & Guthrie, 2006). Explicit training directed to basic aspects, such as decoding, reading fluency and handwriting is regarded as more relevant in earlier stages of literacy development and of minor importance for adolescent literacy development (Biancarosa & Snow, 2006; Graham & Perin, 2007; Langer, 2001; Pressley, 2006; Van Gelderen et al., 2007). In regard to explicit traditional grammar instruction, such as naming word classes and parsing, small and even negative effects on writing improvement are found (Ellis, 2002; Graham & Perin, 2007; Hillocks, 1984), especially with low-achieving writers (Saddler & Graham, 2005). Such findings raise serious questions about the utility of traditional grammar instruction that was observed in our study. Other types of grammar instruction, such as sentence combining, are reported to be more effective than traditional grammar instruction. Fearn and Farnan (2007) found, for example, that teaching students to focus on the function and practical application of grammar within the context of writing texts produced strong and positive effects on students’ writing. In summary, the types of explicit instruction in which the low-achieving adolescents in our study were observed to engage in had little relation with meaning-making activities and therefore are unlikely to make a difference in their literacy development.

A third explanation may be that when students were engaged in content-oriented instruction, which was the case in social studies lessons, the materials may not have elicited effective practices for improving literacy proficiency. Inspection of textbooks for social studies revealed that the tasks consisted of short texts accompanied by many

filling-out-assignments and cut and paste jobs (Appendix A). By reducing the amount of extensive reading and writing tasks, publishers aim to remove language difficulties that impede understanding and remembering subject content. By excluding writing tasks in which students are challenged to use writing as a tool for understanding and analyzing subject-matter information, opportunities to teach and practice writing in meaningful and functional ways are missed. Apart from the nature of the textbooks, it was observed that social studies teachers provided little additional support in helping students to tackle language difficulties (9%). If it was observed, instruction was mainly directed at discipline-related idiom or consisted of reading texts aloud to ensure that students read the texts at all. It is likely that low-achieving students need more effective support in reading and writing in the content areas to benefit from frequent engagement in literacy practices outside the language arts classroom.

Ideally, coordination between language arts and social studies teachers takes place to provide such support for students' literacy development. From the interviews that were held with our teachers (Appendix B), it appears however that coordination between and even within subject domains is scarce. Although the majority of the language arts and social studies teachers stress the importance of coordination and shared responsibility for students' literacy development, they admit that these conditions are not met. Despite that most of our participating schools had a history with a language policy to facilitate collaboration between subject domains, only on one single school a language policy was actually enforced and cross-disciplinary projects were a fixed part of the curriculum. Initiatives for the development of a language policy were often dependent on the efforts of individual teachers running down when priority is given to other issues. On some of the participating schools, language policy even dropped-off the agenda completely due to a loss of support. Thus, at most participating schools cross-disciplinary collaboration directed to students' literacy was not systematically embedded in the school organization. Consequently, social studies teachers needed to rely on their own (limited) knowledge about literacy issues, and language arts teachers missed opportunities to use content-area materials to teach reading and writing. This may also explain why students who were more engaged in content-oriented instruction in social studies did not show improvements in literacy proficiency.

Fourth, the results may also be explained by the given that a substantial part of the instructional practices in both subjects were enacted in individual settings in which the lowest levels of engagement were achieved. Students were engaged in these settings two third of the time (67%). In comparison to whole-class settings (almost 100%) and in group settings (75%) this is clearly a poorer score. This suggests that students had most difficulties in focusing their attention to their work in individual

settings. While working individually, students are dependent on their own knowledge, skills and motivation. More interactive settings, such as whole-class and group settings, provide opportunities to produce language, to share ideas, for good and bad practices to be modeled, and to motivate each other (Guthrie, McRae & Klauda, 2007; Johnson & Johnson, 2009; Klenger et al., 2004; Palinscar & Herrenkohl, 2002; Rijlaarsdam et al., 2008; Swain, 2001; Vaughn et al., 2001; Yarrow & Topping, 2001). Furthermore, the frequency of individual settings, and especially the lack of group seat work, points to problems with realizing effective collaborative learning conditions apart from whole-class instruction. Such conditions include good classroom organization next to good regulative and communicative skills of both teachers and students (Goodwin, 1999). In addition, the textbooks may contribute to the limited amount of group work and the abundance of individual activities. Inspection of the textbooks in language arts and social studies (Appendix A) revealed that textbooks are designed in such a way that students are able to work autonomously. In most cases this means also individually. Only in some assignments, students are explicitly instructed to discuss their work with peers or to execute the task in collaboration with others.

A final explanation may be that literacy instruction to low-achieving adolescents is focused at raising students' confidence. This focus may result in a lack of challenging literacy activities. Students need to have confidence in their abilities to persist in the face of difficulties, but at the same time they have to realize the need of additional effort to succeed. When students feel overconfident (because not that much is expected from them), they fail to allocate such additional effort (Salomon, 1984; Sawyer, Graham & Harris, 1992). Our analysis of affective engagement reported in Part I of this thesis showed that although the students are low-achieving, they expressed considerable confidence in their reading and writing skills (being close to 4 on the scale ranging from 1 (not at all) to 5 (very much)). The high self-efficacy beliefs may signal that students are insufficiently challenged in literacy instruction, causing them to allocate insufficient additional effort. This may result in less growth in literacy than would have been possible in a more challenging educational context. The high self-efficacy beliefs are not unusual for low-achieving adolescents (Bandura, 1997; Klassen, 2002), and are likely to be fostered by their learning environment. As the participating students are enrolled in a tracked school system in secondary education, they are surrounded by classmates with comparable literacy abilities. Moreover, their literacy tasks are adapted to their abilities and their teachers are focused at fostering students' confidence. In such learning environments students are likely to overestimate their competence in literacy, despite their deficient literacy abilities.

In relation to this, the moderate intrinsic values reported by the students in Part I of this thesis may signal that they do not experience much enjoyment in the activities they have to perform at school. This is a pity, as studies have shown that highly intrinsically motivated students pursue deeper levels of processing. Frequent practice with deeper processing is needed to improve (Schiefele, 1991; Schraw & Lehman, 2001; Wang & Guthrie, 2004; Wigfield & Guthrie, 1997). Regarding the moderate intrinsic values reported, it is questionable whether those deeper levels of processing are being elicited with this group of low-achieving students.

In sum, this study showed that our group of low-achieving adolescents progressed in literacy skills over the first three grades of secondary education. However, we could not establish empirically that this progress is explained by different degrees of engagement in specific literacy practices in language arts and social studies, although theorists assume that positive associations do exist. The findings suggest that different degrees of engagement in literacy instruction are hardly associated with low-achieving adolescents' literacy development. This does not imply, however, that engagement in literacy instruction does not contribute in general to low-achieving adolescents' literacy development. In fact, we found an indication that there is a positive contribution of instruction in metacognitive knowledge to students' writing development.

Our exploration of the instructional practices using features of effective literacy development provides a list of points for improvement that seem promising. In a nutshell, the above explanations for not finding significant associations can serve as a first agenda. More attention to cross-disciplinary collaboration between language arts and content area teaching and more use of, interactive, content-oriented and explicit (but not isolated) literacy instruction, but also more challenging and relevant literacy tasks in the classrooms (for example by embedding such tasks in larger projects) are the most important recommendations that come across. Offering this type of literacy instruction, demands for a more flexible and creative use of existing textbooks. The key to success is dependent of how well curricula fit to the specific needs and attributes of students, and of the choices teachers make collectively within and across subject domains (see also the educational implications in the general Summary and Discussion of this thesis).

While we believe that this study makes a unique contribution to the field of literacy development and the role of engagement in instruction, we also acknowledge some limitations. First, the small sample size and the Dutch context call for caution in generalizing our conclusions to the whole group of low-achieving adolescents in the Netherlands and abroad. Replication of this study using other samples of low-achieving adolescents is needed to validate our findings. Second, the number of lessons

observed was limited to two observations per subject per grade. Therefore, the conclusions about how time is spent on activities and how much time students were engaged in particular contexts may not be representative for their whole curriculum. This means that replication of our findings in future studies in respect to time spent on literacy activities for low achieving adolescents (both in Dutch schools and abroad) is necessary to become more certain about the robustness of our findings. Third, this study did not examine the role of overall classroom quality and interpersonal relationships between teachers and students, which are also likely to influence students' engagement and the impact of instruction offered (Appleton et al., 2008; Brekelmans, Sleegers & Fraser, 2000; Den Brok, 2001; Guthrie & Wigfield, 2000; Fredricks et al., 2004). The effect of these aspects needs to be addressed in future investigations. Apart from these remarks, we still believe that this longitudinal exploration of students' engagement in a variety of literacy contexts has made an important contribution to increasing our understanding of instructional practices for improving low achieving adolescents' literacy and the role of their engagement in instructional practices in language arts and social studies.

Part III

**Academic reading and writing:
differences in approach and success**

Chapter 4

Self-regulated reading in relation to reading task performance¹⁵

This study examines the relationship between types and sequences of self-regulated reading activities in task oriented reading with quality of task performance of 51 low-achieving readers in grade 8. The study used think aloud combined with video observations to analyze the students' approach of a content area reading task in the stages of orientation, text reading and answering questions. Results show that in general these low-achieving readers are infrequently monitoring their text comprehension or making connections with own prior knowledge. Nevertheless, important differences are found between types and sequences of self-regulated reading activities related to task achievement. The low-achieving readers showing a straightforward linear approach to the task (orientation, reading the whole text and finally answering questions) yielded more success. In addition, readers demonstrating more activities directed at connections between text contents and prior knowledge during reading showed better task achievement. Implications of these findings for literacy education of this special group of students are discussed.

¹⁵ This chapter is based on:

De Milliano, I., Van Gelderen, A., & Sleegers, P. (under review). Types and sequences of self-regulated reading of low-achieving adolescent readers in relation to reading task performance.

4.1 Introduction

Along with writing skill, reading comprehension is an important factor for academic and professional success and a basic requirement for participation in the current information society. Although many adolescents acquire sufficient competence in reading comprehension without much difficulty, various studies have shown that a substantial part of the adolescent student population struggles with reading comprehension and performs below the levels required by the school curriculum (Alliance for Excellent Education, 2006; Hofman, Spijkerboer & Timmermans, 2009; Inspectie van het Onderwijs, 2008; OECD, 2003). These findings led to calls for a better understanding of the specific challenges of adolescent literacy, especially of low-achieving readers.

A great deal of research has been done showing how readers of diverging proficiency process a text and achieve text comprehension (Baker & Brown, 1984; Pearson, Roehler, Dole & Duffy, 1992; Pressley, 2000; Oakhill & Cain, 2007; Trabasso & Bouchard, 2002; Vidal-Abarca, Mañá & Gil, 2010). These studies show that less proficient readers have problems with one or more of the following: a) decoding words, including structural analysis; b) sufficient speed and accuracy (fluency); c) understanding the meaning of words; d) relating content to prior knowledge; e) applying self-regulation. The problems of low-achieving adolescent readers thus are diverse. Some low-achieving adolescent readers still have difficulty in reading words accurately, yet these students make up a minority. Most of them read words accurately, but have problems with comprehension as a result of knowledge deficits (vocabulary, grammar, metacognitive knowledge, genre and conceptual knowledge) and with self-regulation of reading, roughly defined as purposeful activities carried out by readers in order to steer and control their approach of the reading task (Alvermann, 2001; Biancarosa & Snow, 2006; Kucan & Palincsar, 2011; Vidal-Abarca, Mañá & Gil, 2010). Such self-regulation is based on personal knowledge about the task, about the own competence to carry it out, and the motivation to succeed (cf. Zimmerman & Riesemberg, 1997).

To enhance our understanding of adolescent literacy, more knowledge is needed of how students approach reading that is normal in education. Reading in secondary education, is embedded in all school subjects and informative and expository text genres become of increasing importance (Fang & Schleppegrell, 2010). In the content areas, students usually read one or more documents, knowing in advance that they have to perform a task for which the documents are crucial and available source of information, which makes this type of task-oriented reading different from for

example leisure reading. The self-regulation of reading in these situations requires not only comprehension of the text but also of the task and of the execution of the task involved.

Although differences concerning self-regulation among low-achieving adolescent readers have been mentioned in the literature, not much is known from in-depth studies of how low-achieving adolescent readers actually approach task oriented reading. Therefore, there is still little knowledge of their approaches to such task and the self-regulative activities they use. In addition, it is not clear whether and which differences in their approaches are relevant for explaining differential task achievement *within* the group of low-achieving adolescent readers. In this study, we therefore explore types and sequences of self-regulated reading activities in relation to reading task performance. We focus on the self-regulated reading activities as it is a very important element of reading achievement and studies have shown that readers who employ a diversity of self-regulatory activities achieve better (Baker & Brown, 1984; Pressley & Afflerbach, 1995). This study not only makes a contribution to the literature on reading processes and the role of self-regulation, but it also offers insights in designing educational interventions to improve the reading of adolescents struggling with reading.

4.2 Theoretical background

4.2.1 Self-regulated reading of content area reading tasks

Several studies identified a variety of self-regulated reading activities directed at text comprehension, such as 1) *predicting*: activation of prior knowledge based on clues within the text such as graphics and (sub)headings, 2) *inferring*: connecting text contents to own ideas and knowledge, 3) *self-questioning*: drawing on content knowledge to investigate the text and to monitor comprehension, 4) *skimming*: glancing through the text to gain a general impression of the content, 5) *scanning*: locating specific details such as names, dates and places, 6) *determining importance/summarizing*: deciding what is most important, 7) *paraphrasing*: putting information in the text into own words, 8) *rereading*: rereading words or sentences to clarify meaning, 9) *reading on*: jumping over unfamiliar words to determine meaning from the context, 10) *consulting*: using a dictionary or knowledgeable others to determine word meanings (Duke & Pearson, 2002; Meijer, Veenman & Van Hout-Wolters, 2006; Pressley, 2000).

Two characteristics of task oriented reading have important consequences for the way readers approach the texts in question. First, only information conditional for executing the task successfully is relevant for the reader which may result in readers

selecting some parts of the text to read, instead of reading it in its entirety. Second, readers need to change their focus of attention from text to task several times, until the task is carried out properly. Carrying out this type of reading tasks is a complex cyclic process that requires active self-regulation next to efficient decoding skills, adequate vocabulary, interest and familiarity with the topic and text genre (Baker & Brown, 1984; Guthrie & Wigfield, 1997; Pressley, 2000). Vidal-Abarca, et al (2010), for example demonstrated that poor readers in grades 7-8 did not only give poorer answers to questions to such reading tasks, but were also less successful in deciding at what occasions they should consult the text or not, compared to their more proficient classmates. Such findings point to differences in self-regulatory skill between poorer and more proficient adolescent readers.

Self-regulation means that students plan, execute and control their behavioral and cognitive activities (Boekaerts & Simons, 1993). For successful task achievement, readers need not only to orient on the information the text provides, but also on task requirements, the goal of the task and approaches to attain this goal. In addition, readers need to monitor their text comprehension and their execution of the task (finding appropriate answers to each of the questions). Comprehension of the questions involves the integration of propositions within the question in combination with the information provided by the text to construct a coherent representation of the questions' demands (Cataldo & Oakhil, 2000; Rouet, 2006). After understanding the question, readers have to decide whether they can answer it immediately or whether consultation of the text is needed. Once readers have decided to search the text to answer the question, they have to select and process relevant information from the text, which also involves self-regulation (Cerdán & Vidal-Abarca, 2008; Vidal-Abarca, Mañá & Gil, 2010). In sum, task oriented reading is a cyclic process in which readers have to monitor and evaluate activities conducted and have to adapt their approaches based on the outcome of these processes.

Biancarosa & Snow (2006) suggest that difficulties with self-regulation are not the same for all low-achieving adolescent readers. For some, the problem may be that they do not read with sufficient fluency inhibiting self-regulated activities directed at comprehension. Others may lack a repertoire of self-regulated activities to help them comprehend what they read (how to grasp the gist of a text, to notice and repair misinterpretations and to change their approach based on the purpose of the reading task). Still other low-achieving adolescent readers employ self-regulated activities but have difficulties in using them effectively as a result of little practice and in a limited range of texts, genres and contexts. Finally, some low-achieving adolescent readers may not go beyond construing a textbase instead of connecting this textbase to their prior knowledge (Kintsch & Kintsch, 2005). Initial access to the written text is necessary

to construe the so-called ‘textbase’. Readers use the text to achieve a basic understanding of the literal meaning. However, to achieve text comprehension that is useful, a reader must construct a so-called ‘situation model’ by integrating the textbase with prior knowledge (Kintsch & Van Dijk, 1978). Rapp et al. (2007), report finding two different types of processing by low-achieving adolescent readers in this respect, some oriented solely towards literal representation of segments of text, while others were trying to connect text segments with prior knowledge which, however, was not applicable or incorrect. The use of activities to connect text contents with existing knowledge enables readers to comprehend text in a way useful for task oriented reading (Chambers Cantrell, Almasi, Carter, Rintamaa & Madden, 2010; Graesser, 2007).

4.3 The present study

Differences concerning self-regulation among low-achieving adolescent readers have been proposed in the literature (Alexander & Murphy, 1998; Bianacarosa & Snow, 2006), but it is not clear what differences can be empirically found and to what degree they are also relevant for task achievement. Although such differences have been demonstrated between readers of lower and higher proficiency (Vidal-Abarca, Mañá & Gil, 2010), it is useful to know whether differences in task achievement *within* the group of low-achieving adolescent readers are also related to differences in regulation. If so, it is informative to know which types and sequences of self-regulated activities are related to more successful task achievement. Such understanding is not only of scientific interest but also informative for interventions directed at reading strategies of this particular group of students. This study focuses on the types of self-regulation activities in three stages of a content area reading task: orientation on the task, text reading and answering questions. In addition, it explores sequences of self-regulation related to task achievement. The following questions are addressed in this study:

- 1) What types of self-regulated activities do low-achieving adolescent readers engage in most frequently in task oriented reading?

Based on the previous literature it is expected that low-achieving readers predominantly use self-regulative activities directed at the construction of a text base, and show few activities directed at connecting their text base to prior knowledge in order to create a situation model of the text.

- 2) What relationships exist between the types of self-regulation activities in the different stages of task oriented reading and task achievement?

It is expected that low-achieving readers who show more self-regulation directed at connecting the text contents to prior knowledge will have more success than their classmates.

- 3) Which differences in sequences of self-regulated reading exist between low-achieving adolescent readers who obtain highest, average and lowest achievement?

Given the lack of empirical data in the literature, there are no specific expectations about particular sequences leading to better task achievement. For that reason this question is treated as explorative.

4.4 Method

4.4.1 Participants

Low-achieving adolescent readers are defined in this study as students in the lowest 30-percentile of academic skills as measured by an aptitude test measuring language, reading and mathematics skills prior to admission of Dutch secondary education. In the Netherlands these low-achieving readers are enrolled in the two lowest tracks of secondary education. The study involved a sample of 51 students (22 girls and 29 boys) from 11 eighth grade classrooms from 10 ethnically mixed schools in these lowest tracks of secondary education in the Netherlands. The students were between 13 and 15 years old ($M=14.7$) of whom 24 students had a monolingual Dutch background. The other 28 students were bilinguals with various ethnolinguistic backgrounds. Most of them had Moroccan or Turkish backgrounds, the remainder had Surinamese, Antillean, Cape Verdian and Chinese backgrounds. All but five of the bilingual students were born in the Netherlands and are thus second generation immigrants. Immigrant children who had visited a Dutch primary school for less than three years were excluded in order to keep the immigrant sample homogeneous with respect to previous schooling experiences and the related occasions for acquisition of Dutch. Furthermore, students diagnosed with a learning or behavioral disorder (e.g. dyslexia, ADHD), were excluded from the sample in order to ascertain that self-regulatory activities were not related to specific learning or behavioral disorders. The participating students were involved in a broader (longitudinal) study in which reading comprehension proficiency was measured by a reading achievement test (Van Steensel, Oostdam & Van Gelderen,

2012). The monolingual and bilingual students in this studies did not differ in reading comprehension ($F_{(1,51)}=1.384, p=.25$).

4.4.2 Measures

4.4.2.1 The reading task

The reading task was designed for studying the normal task approach of low-achieving readers in a setting typical of their school curriculum. The observational study of the target group in part II of this thesis revealed that reading in content-area subjects is typically embedded in tasks in which brief texts containing pictures, maps and graphics are used as sources of information to answer questions about topics to be learned. Therefore, the task described below was modeled to be similar to such tasks found in social studies textbooks used in the students' classrooms. In addition, the students were asked to approach the task in the same way as similar tasks at school or as homework. In accordance, the students were explicitly given the freedom to use any approach and any sequence that seemed reasonable to them. The task consisted of an introduction explaining the assignment, a text and text comprehension questions (see Figures 4.1 and 4.2). The text and questions remained available to them all of the time.

The text was an informative article about the war in Afghanistan and the Dutch military mission in the province of Uruzgan. The text was retrieved from a news website directed to young people, but some features were added to meet principles of a good study text (Land, Sanders & Van den Bergh, 2008) and to meet the study's purposes: 1) the text was adapted to make it appealing for both boys and girls; 2) pictorial information was added (a map of the region and photographs of soldiers at work); 3) some difficult vocabulary items were added, and 4) following the *Error Detection Paradigm* (Hacker, 1998) an inconsistency was added to analyze comprehension monitoring processes. The inconsistency involved the suggestion that the Americans would appreciate another attack by Al Qaida (see third sentence in the translated text in Figure 4.1). Based on schema theory (Kintsch & Van Dijk, 1978), it was assumed that integrating ideas within the text with prior knowledge would result in detection of the faulty proposition and lead to observable fix-up activities to repair comprehension. Five questions were designed to assess three main aspects of reading task achievement, derived from the PISA taxonomy (OECD, 2003) and similar to the taxonomy used by Vidal Abarca et al (2010): 1) retrieving information, 2) interpreting text and 3) reflection/evaluation (see Figure 4.1). The first question asked for the main idea of the text to assess whether the reader was able to state the gist of the text (reflection/evaluation). The second and fourth questions asked for interpretations. This type of question requires an inference based upon a part of the text, tapping the

Introduction of the assignment

In 2001 American and British troops invaded Afghanistan. Since a couple of years Dutch troops are in Afghanistan too. The assignment is about this topic. Answer the questions and use the text.

Tell your answers to the experimenter.

1.Tell in your own words what the text is about.

2.Why did the Americans attack Afghanistan?

3.For what purpose are the Dutch troops in Afghanistan?

4.What is the dilemma?

5.Where would you find this type of text. Explain your answer.

Standards for good answers

1. The text is about the war in Afghanistan (1). The Dutch army is in Afghanistan to secure safety and for reconstruction (1). That work is important but dangerous. Therefore there is discussion whether the Dutch soldiers should stay or leave (1).

2. Osama Bin Laden (Al Qaida) was suspected of the attacks in New York and Washington (1). The US thought that they were hiding somewhere in Afghanistan (1). To find and arrest them, the US attacked (1).

3. The Dutch troops are in Afghanistan to secure safety (1) and for reconstruction (1).

4. The dilemma is to stay (1) or leave Afghanistan (1).

5.This type of text can be found in newspapers (1), because of the topic, style and layout (1).

Afghanistan: An awkward dilemma

(ANP) By our reporter

Amsterdam- On the day of September 11 2001 the assaults in New York and Washington took place. Hundreds of innocent Americans were killed, the Twin Towers were destroyed and the Pentagon was heavily damaged. According to the Americans, the terrorist Osama Bin Laden is responsible for these murderous attacks. The Americans want this to happen again and went looking for the suspect. In October 2001 the Americans and British invaded Afghanistan. They thought that Bin Laden and his accomplices of Al Qaida were hidden in the mountainous desert of that country.

The Dutchmen in Afghanistan In the year 2009 there are still foreign soldiers in Afghanistan, because Bin Laden still hasn't been found yet. There are not only American and British troops, but also the Dutch military is assisting. By far most Dutch soldiers are camping near Deh Rawood and Tarn Kowt, in the province of Uruzgan (see map). The Dutch peace mission is dominated by the need to improve safety and for reconstruction. And they help constructing new roads, drilling water wells and building schools. Thanks to them, more and more Afghan people again have clean drinking-water and a lot of children can go to school again. Yet it is not going as well as hoped for. The lack of safety is the biggest problem. Because of the continued combats many Afghan civilians still feel very unsafe.

Stay or leave? It is clear that the soldiers have an important task but that it also is a very dangerous one. On the one hand Afghanistan is far from safe and foreign aid is sorely needed. On the other hand, there are many Afghans who view the foreign soldiers as enemies. This makes the work dangerous. Insurgent Afghans plant mines and commit assaults with roadside bombs to cross the soldiers. In the meantime already eighteen Dutch soldiers have died. Some were very young, like 20-year old Timo Smeethuizen. Because of the danger and the risks many Dutch people wonder whether it is wise for the Dutch military to stay in Afghanistan. Public opinion is divided. Sergeant Bas Visser (23 years), just returned from Uruzgan, thinks they should. He says: "We started this job, so we should finish the contract. Halfway ceasing the mission is a bad idea. The Afghan youth deserves just as good a future as we have". Timo Smeethuizen's girl friend thinks different. She says: "I feel terrible that Timo isn't there anymore. Family and friends of other soldiers should be spared such grief". So, an awkward dilemma. What is the best decision? That the soldiers finish the job they started? Or that they return home unharmed as soon as possible?

Caption 1 (above left): Dutch soldiers on patrol

Caption 2 (above right): Dutch soldiers distribute toys

Caption 3 (below): Important cities in Afghanistan

Figure 4.1. The reading task (translated) and standards for good answers.

In 2001 vielen de Amerikanen en Britten Afghanistan binnen.

Sinds een paar jaar zijn er ook Nederlandse soldaten in Afghanistan. De opdrachten gaan hierover.

Maak opdracht 1 en 2 en gebruik hierbij de tekst.

Veel succes!

Opdracht 1 – Afghanistan: een lastig dilemma

Vertel je antwoorden tegen de onderzoeker.

1. Vertel in je eigen woorden in het kort waar de tekst over gaat.
2. Waarom hebben de Amerikanen Afghanistan aangevallen?
3. Met welk doel zijn de Nederlandse soldaten in Afghanistan?
4. Wat is het dilemma?
5. Waar zou je deze tekst kunnen tegenkomen? Waarom?

Afghanistan: Een lastig dilemma

(ANP) Door onze verslaggever

Amsterdam - Op 11 september 2001 waren de aanslagen in New York en Washington. Honderden onschuldige Amerikanen werden gedood, de Twin Towers verwoest en het Pentagon werd zwaar beschadigd. Volgens de Amerikanen is terrorist Osama Bin Laden verantwoordelijk voor deze bloedige aanslagen. De Amerikanen willen dat dit weer gebeurt en gingen op zoek naar de vermoedelijke dader. In oktober 2001 vielen de Amerikanen en Britten Afghanistan binnen. Ze dachten dat Bin Laden en zijn handlangers van Al Qaida zich in de bergachtige woestijn van dit land hadden verstopt.

Nederlanders in Afghanistan
Anno 2009 zijn er nog altijd buitenlandse soldaten in Afghanistan, omdat Bin Laden nog steeds niet gevonden is. Er zijn niet alleen Amerikaanse en Britse troepen, ook Nederlandse militairen helpen mee. Veruit de meeste Nederlandse soldaten zijn gelegerd in kampen die liggen bij Deh Rawood en Tarin Kowt, in de provincie Uruzgan (zie kaart). De Nederlandse vredesmissie staat in het teken van veiligheid en wederopbouw. De militairen zijn er om de veiligheid te herstellen. En ze helpen bij het aanleggen van nieuwe wegen, het slaan van waterputten en de bouw van scholen. Dankzij hen hebben steeds meer Afghaanse weer schoon drinkwater en kunnen heel wat kinderen weer naar school. Toch gaat het nog niet zo voorspoedig als gehoopt. Het gebrek aan veiligheid is het allergrootste probleem. Vanwege de aanhoudende gevechten voelen veel Afghaanse burgers zich nog steeds erg onveilig.



Nederlandse soldaten op patrouille



Nederlandse soldaten delen speelgoed uit

Blijven of weggaan?

Het is duidelijk dat de soldaten een belangrijke taak hebben, maar dat die ook zeer gevaarlijk is. Aan de ene kant is Afghanistan nog lang niet veilig en is de buitenlandse hulp hard nodig. Aan de andere kant zijn er veel Afghaan die de buitenlandse soldaten als vijanden zien. Dit maakt het werk gevaarlijk. Opstandige Afghaan leggen mijnen en plegen aanslagen met berm bommen om de soldaten te dwarsbomen. Inmiddels zijn al achttien Nederlandse soldaten gestorven. Sommige waren erg jong, zoals de 20-jarige Timo Smeehuijzen. Vanwege het gevaar en de risico's vragen veel Nederlanders zich af of het verstandig is dat de Nederlandse militairen nog langer in Uruzgan blijven.

De meningen zijn verdeeld. Sergeant Bas Visser (23 jr.), net terug uit Uruzgan, vindt van wel. Hij zegt: "We zijn aan deze klus begonnen, dus moeten we het karwei ook afronden. De missie halverwege staken is een slecht idee. De Afghaanse jeugd verdient net zo goede toekomst als wij." De vriendin van Timo Smeehuijzen denkt er anders over. Zij zegt: "Ik vind het vreselijk dat Timo er niet meer is. Dit verdriet moet familie en vrienden van andere militairen bespaard worden." Een lastig dilemma dus. Wat is nu het beste besluit? Dat de soldaten het werk waaraan ze zijn begonnen afronden? Of dat ze zo snel mogelijk heelhuids terugkomen naar Nederland?



Belangrijke steden in Afghanistan

Figure 4.2. The original text lay-out.

richness of the readers' situation model. The third question asked for literal retrieval of information from the text. This question tapped the readers' text base. The fifth question asked after the origin and genre of this type of texts (reflection/evaluation). Together, the five questions allow a quite general evaluation of the success of the students' reading task performance.

4.4.3 Procedure

For the investigation of self-regulated reading, a think-aloud study was conducted in combination with analysis of video recordings of students executing the reading task. All sessions were individual and took place in scheduled hours during a school day. To obtain an understanding of students' normal reading behavior in educational content area contexts, the students were told that the researchers were interested in their usual approach toward reading assignments for school. They were also told that they were free in how they wanted to proceed. Students were allowed to use a dictionary. They were asked to verbalize their thoughts and actions while executing the task (Ericsson & Simon, 1993). In addition, students were asked to read aloud enabling observation of some important activities such as rereading, pausing or reading headings¹⁶. To clarify the idea of thinking aloud, a short demo clip was shown in which an adolescent boy reads a newspaper article and verbalizes what he is reading, doing and thinking. When students kept silent for more than five seconds, the experimenter encouraged them to keep thinking aloud. The experimenter used prompts like: 'Keep on talking, please'. However, prompting to think aloud was rarely necessary. If students asked for help, the experimenter was allowed to help them since asking for help is a self-regulating activity in itself. However, the experimenter was not allowed to prompt answers to one of the questions of the assignment. In most cases students asked for meanings or pronunciation of words.

4.4.4 Scoring

The students' task approach was analyzed using a scheme describing indicators of self-regulated reading activities. The literature about self-regulation is quite ambiguous about the role of conscious processing (Dinsmore, Alexander & Loughlin, 2008).

¹⁶ Research on the effects of reading mode (aloud or silent) on comprehension and the reading process is equivocal (Kragler, 1995; McCullum, Sharp, Bell & George, 2004) and gives no clear reasons for selecting one or the other mode for this study. Reading aloud was preferred, because it allowed us to register students' reading activities in a more detailed fashion than silent reading would. In lessons directed at these students we observed that they were familiar with reading aloud (part II). For that reason it may be assumed that the activity was quite familiar to them. To avoid inference of reading aloud on comprehension processes, the students were told explicitly that they would not be evaluated on the quality of their articulation or pronunciation.

In addition, on the basis of mere observation of verbal and non-verbal activities of readers, it is not possible to make a clear distinction between activities that are preceded by a conscious decision to act and activities that are not. For that reason, all behavioral, cognitive and metacognitive activities that seem to be purposeful in the context of task oriented reading were defined as self-regulated. Even when there is no observable decision that precedes them, such activities are regarded as driven by a conscious or unconscious ('routine-like') decision to act. Given that the students were instructed to proceed as they themselves thought useful, this seems an appropriate definition of what we call 'indicators of self-regulation'. These indicators included verbal behavior (for example, "*Uhm, I don't know that anymore, I'm going to look that up in the text*") and non-verbal behavior (for example, watching the pictures in the newspaper article or using the dictionary). To examine the sequence of task execution and its importance for task achievement, the task approach was divided into three different stages. The first stage is orientation, in which readers focus on the purpose of the task and the topic of the text, and select an approach for executing the task. The second stage concerns reading (substantial parts of) the text. The third stage is answering the questions either by relying on the text representation already obtained or by searching parts of the text specifically for the purpose of question answering. The stages prescribe no presumed sequence. It was for example possible to skip the first stage and even the second stage completely and start with answering the questions. Students quite often went back and forth between the stages of text reading and answering questions. In such cases, students were involved in the text reading stage for several times.

The coding scheme was based on taxonomies of reading processes such as those of Coiro and Dobler (2007), Meijer et al. (2006), and Pressley and Afflerbach (1995). In addition, a pilot study was carried out among 10 low-achieving adolescent readers who did not participate in the present study to track down indicators of self-regulated activities that may occur in the assignment used. All indicators encountered were added to the coding scheme to assure a full coverage of all occurring self-regulated task related activities. First, all activities were coded in categories that described them as objective as possible (such as 'skimming the task', 'silent for 6 seconds' and 'reading text aloud' (see Tables 4.1-4.3). Verbal activities were scored on the utterance level: each complete utterance was scored as one instance of an activity; non-verbal activities were scored as one complete instance. Second, to every single code labels representing the aforementioned three stages were attached ('orientation', 'text reading' and 'answering'). Finally, labels differentiating a few general categories within each of these stages were assigned (see Tables 4.1-4.3). To enable a complete reconstruction of all sequences of activities, four codes were added to the scheme for

actions that were not regarded as self-regulated. First, the code ‘silence’ was included for the moments in which students fell silent for more than three seconds. Second, the codes ‘reading text aloud’, ‘reading question aloud’ and ‘answering question aloud’ were added. By coding these ‘default activities’ it was possible to analyze when mere task execution was interrupted by self-regulatory activities. In addition, students’ reactions to the inconsistency were coded. Three reactions were distinguished: 1) reading on, 2) hesitation, and 3) hesitation followed by a fix-up activity.

To determine inter-rater reliability, video recordings of 10 students (20 percent) were coded by two independent raters. In total, 80 percent of all indicators of self-regulation, silence, reading aloud and answering aloud, were coded identically. This agreement is regarded as sufficiently high for the present purposes of analysis. All differences in coding were resolved after discussion.

For the evaluation of task performance, the quality of the answers to the questions was examined. Responses to the five questions were assigned points using sample answers prepared by the experimenter as a standard (see Figure 4.1). Correct answers consisted of several aspects. For each correct aspect mentioned, students received points (total of 12 possible points). All responses to the five questions were scored by two independent raters. The correlation between the scores of raters was high (q1 $r=.69$, q2 $r=.76$, q3 $r=.71$, q4 $r=.94$, q5 $r=.95$). The scores of raters were averaged and summed. Task achievement on average was 6.77 ($SD=1.96$). The highest score was 10 points; the lowest score was 2.5 points.

4.4.5 Analysis

Frequencies were computed for all indicators of self-regulated activities in the three stages of the task. Pearson correlations were computed to investigate the relationships between the self-regulated activities and task achievement. Finally, in order to shed light on the sequences of the self-regulatory activities of these low-achieving readers, the sequences of students with the extreme scores were compared. For this comparison, the six students with the highest and the six students with the lowest achievement scores were selected. In addition, six students with scores just above and just below the mean score were selected. The task achievement scores of the three groups differed significantly from one another ($F_{(2,17)}=305.95$, $p<.001$).

4.5 Results

4.5.1 Stage of orientation

We first examined the indicators of self-regulated activities observed in the stage of orientation. The frequency, range and mean of indicators coded in this stage are presented in Table 4.1.

Table 4.1 Examples, frequency, range and means of self-regulatory indicators in the orientation stage (N=51)

	Frequency	Range	Mean (SD)
1 Total indicators of orientation	177	0-13	3.4 (2.6)
1.1 Task orientation	156	0-8	3.0 (2.0)
• Skimming the task	46	0-1	.9 (.3)
• Reading the text comprehension questions	28	0-2	.5 (.6)
• Questioning the goal of the task <i>e.g. "Do I need to read this text?"</i>	26	0-4	.5 (.8)
• Reading the introduction to the task	25	0-1	.5 (.5)
• Planning task approach <i>e.g. "First, I take a look at the questions, then I will check whether I can find answers to the questions while reading"</i>	9	0-4	.2 (.7)
• Indicating comprehension of the goal of the task <i>e.g. "Okay, I see."</i>	6	0-1	.1 (.3)
• Restating the goal of the task <i>e.g. "So I need to read the text and make the task."</i>	4	0-1	.1 (.3)
• Asking for help <i>e.g. "Do I need to complete this task?"</i>	4	0-4	.1 (.3)
• Asking for confirmation of task performance <i>e.g. "Is it okay that I used a red pencil?"</i>	1	0-1	.0 (.1)
• Commenting on the nature or goal of the task <i>e.g. "Do I really have to execute this task?"</i>	1	0-1	.0 (.1)
1.2 Text orientation	21	0-7	.4 (1.2)
• Taking a look at illustrations in the text	10	0-3	.2 (.7)
• Activating prior knowledge about the topic of the text <i>e.g. "When I see the title, I know that it is about Afghanistan, a place where a war is going on for years"</i>	4	0-1	.1 (.3)
• Reading the title of the text	4	0-1	.1 (.3)
• Reading the subheadings in the text	3	0-3	.1 (.4)
Other activities			
• Silence	1	1	.0 (.1)

Results in Table 4.1 show that the students demonstrated a variety of indicators of self-regulation in the orientation stage. From the 177 indicators in the orientation stage, 156 indicators were directed at the task and 21 indicators were directed at the text. Apparently, the students were more frequently orienting on the task than on the text. The most frequent indicator directed at task orientation was ‘skimming the task’. The frequency of skimming the task ranges from 0 to 1, meaning that at least one student did not show any indication of skimming the task, while at least one student did so once. The mean frequency of skimming the task equals .88, indicating that almost all students skimmed the task (46 of 51 students). Other frequent activities were ‘reading the comprehension questions’, ‘questioning the goal of the task’ and ‘reading the introduction to the task’. Less frequent were indicators that students reflected about their task approach (such as ‘planning task approach’, ‘restating the goal’, ‘asking for help or confirmation’). Table 4.1 shows relatively few indicators that students orientated on the text by reading the title and subheadings or looking at the illustrations in the text. There were also few indicators of students’ activating prior knowledge about the topic of the text.

4.5.2 Stage of text reading

Table 4.2 shows descriptive statistics for indicators of self-regulation observed in addition to episodes in which students fell silent or were reading aloud in the stage of text reading. This stage was coded from the moment when students started reading the first sentence of the text.

Table 4.2 shows a variety of indicators with large differences in frequency. By far most of the 681 indicators were directed to text processing (638) and to a much lesser extent to task execution (43). The text processing indicators consisted for a substantial part of rereading activities (351). At the same time, the ranges of the rereading activities reveal large differences among this group of low-achieving adolescent readers. For one third of the rereading activities, we were able to discern their purpose on the basis of students’ verbalizations: decoding (108) or comprehension (8). Decoding was coded, when it was obvious that students were having trouble with word recognition (e.g. reading errors). Comprehension was coded when it was obvious that students did not understand the passage chosen for rereading. However, two thirds of the rereading activities could not be interpreted as belonging to each of the two purposes and were therefore coded separately. Other frequent text processing indicators involving comprehension were ‘reading the subheadings in the text’ (119), ‘taking a look at the illustrations’ (68), ‘reading the title’ (39) and ‘indicating incomprehension of a word or phrase’ (24). These activities point to students’ efforts in gaining access to the text and point to efforts in achieving text comprehension.

Table 4.2 Examples, frequency, range and means of self-regulatory indicators in the text reading stage (N=51)

	Frequency	Range	Mean (SD)
2 Total indicators of text reading	681	0-42	13.1 (6.5)
2.1 Text Processing	638	0-39	12.3 (6.1)
2.1.1 Decoding	115	0-15	2.2 (2.8)
• Rereading for decoding	108	0-14	2.1 (2.6)
• Asking for help for decoding e.g. (Al Qaida) "What is written here?"	4	0-1	.1 (.3)
• Asking for help with pronunciation e.g. (Deh Rawod) "How do you pronounce this?"	3	0-2	.1 (.3)
2.1.2 Comprehension	288	0-15	5.5 (3.0)
• Reading the subheadings in the text	119	0-6	2.3 (1.0)
• Taking a look at the illustrations	68	0-3	1.3 (1.3)
• Reading the title	39	0-1	.8 (.4)
• Indicating incomprehension of a word or phrase e.g. "I do not understand this sentence."	24	0-5	.5 (.9)
• Elaborating on the content e.g. "...I think it is important that they return to Holland. I read that already 18 soldiers have died, I would not to take the risk....."	10	0-5	.2 (.8)
• Rereading for comprehension	8	0-1	.2 (.4)
• Asking for help for comprehension e.g. "What does 'dilemma' mean?"	6	0-2	.1 (.4)
• Indicating comprehension of a word or phrase e.g. "Oh, I see."	6	0-2	.1 (.5)
• Paraphrasing a phrase e.g. "Oh, so they only talk about Dutch soldiers".	6	0-2	.1 (.4)
• Consulting the dictionary	2	0-1	.0 (.2)
2.1.3 Other text processing			
• Rereading for which the purpose is unclear	235	0-11	4.5 (2.7)
2.2 Task Execution	43	0-5	.8 (1.2)
• Switching to answering questions	15	0-2	.3 (.6)
• Commenting on task execution e.g. "Yes, this was it."	10	0-2	.2 (.4)
• Asking for help e.g. "Can I look this up in the dictionary?"	9	0-2	.2 (.5)
• Indicating comprehension of the task e.g. "Okay."	4	0-2	.1 (.3)
• Indicating incomprehension of the task e.g. "Huh, do I need to summarize it?"	2	0-1	.0 (.2)
• Commenting on the task e.g. "Yawning."	1	0-1	.0 (.1)
Other activities			
• Reading Text Aloud	425	0-34	8.2 (5.6)
• Silence	36	0-9	.7 (1.5)

To a lesser extent indicators were observed that were more clearly directed at the construction of a situation model of the text, such as 'elaborating on the content of the

text' (10), 'rereading for the benefit of comprehension' (8) and 'paraphrasing a phrase' (6). Indicators of activities observed in studies with more proficient readers, such as predicting, inferring, summarizing, and self-questioning were not verbalized. Next to text processing, it was observed that other aspects of task execution were carried out during the stage of text reading. The most frequent indicator of this type was 'switching to answering the questions' (15). This activity was demonstrated by students who interrupted their text reading to answer questions. In addition, some students commented on their own task execution (10) or asked for help (9).

Students' response to the inconsistency included in the text, provides information about comprehension monitoring among low-achieving adolescent readers. We found that almost half of the students (24 out of 51 students) did not seem to notice the inconsistency because they read on without noticeable hesitation, such as silence or hesitation. About one third (16 out of 51 students) seemed to notice something because they hesitated, but showed no indications of subsequent self-regulation by means of rereading, pausing or asking for help. However, one fifth of the students (11 out of 51) explicitly noticed the contradiction (e.g. *"Huh? I do not understand this sentence. It says that the Americans would appreciate another attack. This is not true."*) and applied a so-called 'fix-up activity' by means of rereading or asking for help from the experimenter. We can conclude that at least a minority of low-achieving adolescent readers checked whether their interpretation of the text was in line with their prior knowledge.

4.5.3 Stage of answering questions

Table 4.3 shows descriptive statistics for all indicators of self-regulation observed in the stage of answering questions, coded from the moment when students started answering one of the questions. Table 4.3 shows that in the Answering Questions stage 19 different types of self-regulation were observed. From the 301 indicators in this stage, 129 indicators involved the comprehension of the questions and 172 indicators involved the answering of these questions. The most frequent indicators of question comprehension were 'rereading the questions' (22), 'reading the introduction to the task' (20), 'indicating incomprehension of one of the questions' (19) and 'questioning the goal of the task' (16). That some students signaled not comprehending one the questions indicates that some students had difficulties integrating the propositions within the questions with information provided in the text. This suggests they also had difficulties with text comprehension and the construction of a situation model as well. In regard to answering the questions, Table 4.3 shows that 'consulting parts of the text to search the relevant answer' (62) and

'indicating not knowing the answer to one of the questions (44), were much more frequent than the other types of indicators.

Table 4.3 Examples, frequency, range and means of self-regulatory indicators in the answering questions stage (N=51)

	Frequency	Range	Mean (SD)
3 Total indicators of answering questions	301	0-19	5.9 (3.8)
3.1 Question comprehension	129	0-10	2.5 (2.4)
• Rereading the comprehension questions	22	0-1	.4 (.5)
• Reading the introduction to the task	20	0-1	.4 (.5)
• Indicating incomprehension of one of the questions e.g. " <i>What do they mean by this question?</i> "	19	0-2	.4 (.6)
• Questioning the goal of the task	16	0-3	.3 (.6)
• Asking for help for the benefit of comprehending the task e.g. " <i>Do I need to read the questions aloud?</i> "	15	0-3	.3 (.6)
• Indicating incomprehension of the general goal of the task e.g. " <i>I have no idea what they want me to do.</i> "	8	0-3	.2 (.5)
• Evaluating the task e.g. " <i>This is really difficult.</i> "	4	0-1	.1 (.3)
• Restating the goal of the task e.g. " <i>So, I need to tell the answers to you.</i> "	2	0-2	.0 (.3)
3.2 Answering	172	0-9	3.3 (2.5)
• Consulting parts of the text to search the relevant answer	62	0-5	1.2 (1.2)
• Indicating not knowing the answer to one of the questions e.g. " <i>I do not know the answer straight away, I need to find in the text.</i> "	44	0-4	.9 (1.0)
• Switching over to reading parts of the text for first time	17	0-2	.3 (.7)
• Indicating to know the answer to one of the questions e.g. " <i>I do not know the answer yet.</i> "	9	0-2	.2 (.5)
• Evaluating the process of answering the questions	9	0-2	.2 (.4)
• Generating the answer to one of the questions e.g. " <i>Uh the text is about a country named Afghanistan ...</i> "	8	0-3	.2 (.5)
• Taking a look at one of the illustrations in the text	8	0-3	.2 (.5)
• Consulting the dictionary	7	0-2	.1 (.4)
• Checking whether the answer is correct in the text	3	0-1	.1 (.2)
• Activating prior knowledge e.g. " <i>Al Qaida is that terroristic group.</i> "	2	0-1	.0 (.2)
• Evaluating the content of the text e.g. " <i>In that case, the text makes no sense anymore.</i> "	1	0-1	.0 (.1)
Other activities			
• Silence	38	0-4	.7 (1.1)
• Reading Question Aloud	255	0-8	4.9 (1.2)
• Answering Question Aloud	317	4-11	6.1 (1.6)

The means indicate that on average every student searched the text to search for answers and that almost all students gave indications of not knowing an answer to one of the questions. The ranges indicate, however, that there were quite some differences between the students. For example, at least one student did not return to

the text at all while answering the questions, whereas one student did so five times. Furthermore, it was found that some students switched to text reading in the stage of answering the questions 17 times. This was observed with students who did not read the text from beginning to end but interrupted their text reading for answering one of the questions.

4.5.4 Relationships with task performance

In order to answer the second research question, Pearson correlations were computed between task performance (the total score for answers on the comprehension questions) and the frequencies of the main self-regulatory categories. The results are reported in Table 4.4. The results in Table 4.4 show that low-achieving readers that were more active in self-regulation of any type (the total of all indicators) did not demonstrate better task performance. On the other hand, activities involving comprehension during text processing are positively associated with task performance ($r=.329, p<.05$). The more frequent low-achieving adolescent readers were directed at text comprehension, indicating active processing of text contents, the better were their answers to the questions. In addition, a negative correlation is found between the frequency of activities directed to task execution in the stage of text reading and task performance ($r=-.325, p<.05$). Apparently, the more low-achieving adolescent readers paid attention to task execution during reading, such as frequent switches from reading to answering questions, the worse were their answers to the questions. Finally, for the other main types of self-regulation in the stages of orientation, text reading and answering questions, the correlations with task achievement are not significant.

Table 4.4 Correlations of indicators of self-regulation with task performance (N=51)

	Task performance
Total of all indicators of self-regulation	-.05
1. Orientation	-.01
1.1 Task Orientation	-.002
1.2 Text Orientation	-.017
2. Text Reading	.127
2.1 Text Processing	.127
2.1.1 Decoding	-.018
2.1.2 Comprehension	.329*
2.1.3 Other Text Processing	-.065
2.2. Task Execution	-.325*
3. Answering Questions	-.194
3.1 Question Comprehension	-.218
3.2 Answering	-.088

*) significant at .05

4.5.5 Sequences of self-regulated reading

In order to shed light on the sequential patterns of the self-regulatory reading activities of low-achieving adolescent readers (third research question), the patterns in the stage of orientation and answering questions of 18 students who obtained the highest (6 best achievers), average (6 average achievers) and lowest scores for their answers (6 low-achievers) are visualized in Figure 4.3. In the figure, the transition between the different stages for each individual student is indicated by a bold vertical line. The self-regulated activities displayed during text reading are not incorporated in this figure, but analyzed separately (Figure 4.4). Text reading is marked with R-blocks. When more than one R-block is present, students switched between the stages of text reading and answering questions.

Figure 4.3 shows a distinct difference between the sequences in which the lowest achieving students passed through the reading task compared to the others. The best and average-achievers showed a comparable sequential pattern. They performed some orientation activities (O-blocks), after which they read the text from beginning to end (R-blocks).

Finally, they answered the questions one by one (A- and Q-blocks). When they did not comprehend the questions (Q?-blocks) or did not know the answer (A?-blocks), these students applied strategies that enabled them to continue executing the task. Only best achiever Megan and average achiever Robby deviated from this general sequential pattern by not reading the text in one episode. Megan, for example, started reading without any indication of orientation and interrupted her text reading for answering the questions. However, she reconsidered and adapted her task approach as soon as she found out that she couldn't answer the questions yet (*"Actually, I do not know the answer yet"*). The sequential pattern of the task approach of the six lowest-achievers is quite different from that of most other readers in Figure 4.3. Except for Brandon, all lowest achievers alternate several times between Text Reading (R-blocks) and Answering Questions (A- and Q-blocks). Although this is not necessarily a bad strategic approach, it requires quite some control over the task requirements and a good situation model of the text to switch at the right moments. In the absence of such control and text representation, these frequent switches between text reading and answering questions may have had a detrimental effect on task achievement.

Regarding the indicators of self-regulation involving orientation (O-blocks), Figure 4.3 shows that the self-regulatory patterns of the best, average and low-achievers did not differ much in terms of frequency. All groups included students demonstrating few (e.g. Megan, Kayla and Johnny) and many self-regulatory activities during orientation (e.g. Sahar, Alicia, and Munira).

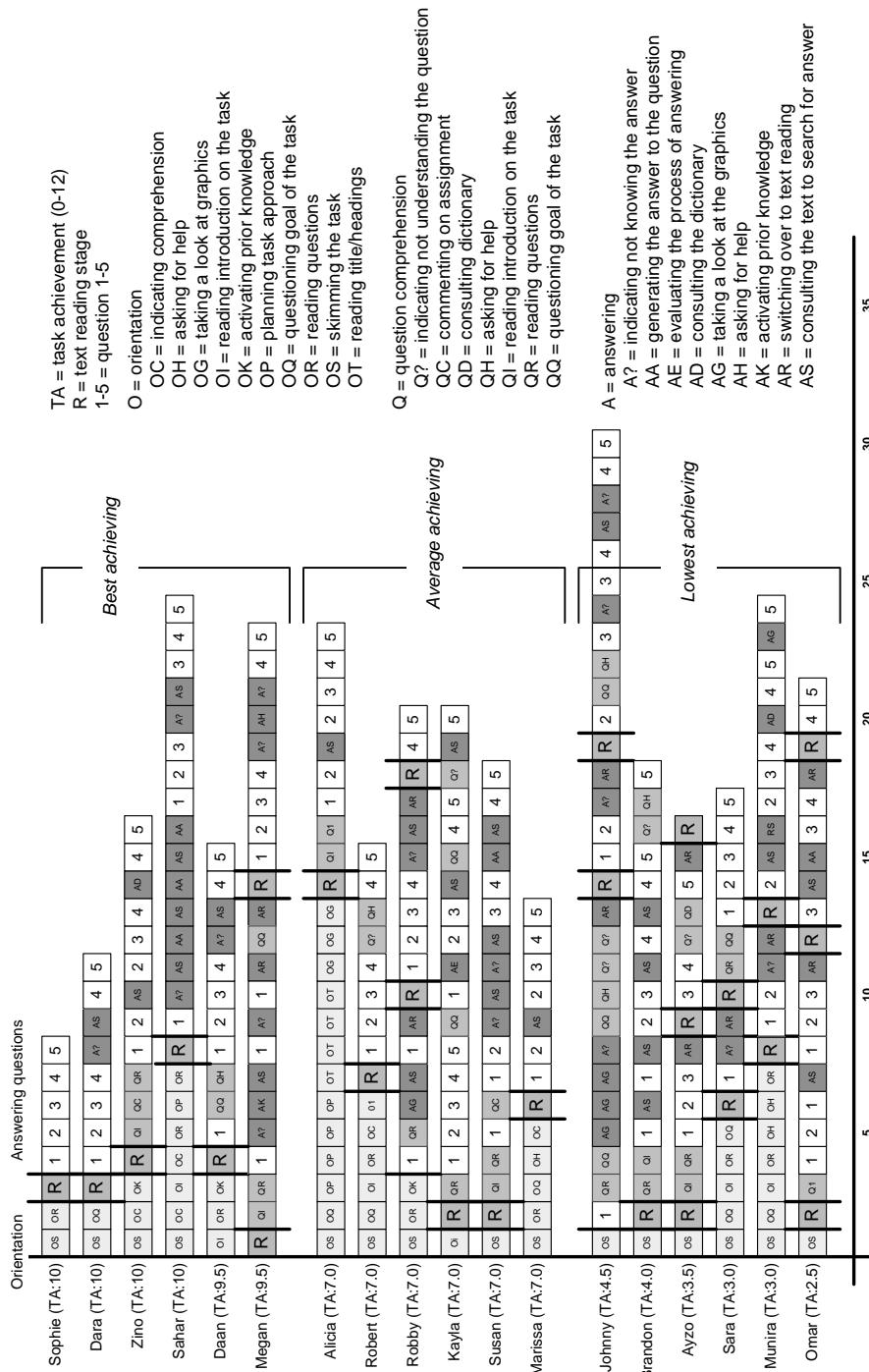


Figure 4.3. Sequences of self-regulated activities in the orientation stage and in the answering questions stage of 18 students who obtained the highest, average and lowest performance scores.

In regard to the nature of the activities some differences were found, however. Four of the six low-achievers were only skimming the task (OS-blocks), while most average and best achievers also read the introduction to the task (OI-block) and/or the questions (OR-block). It is possible that reading these parts directed the better achieving students to their more straightforward approach of the task, sketched above. In the introduction, students were told to use the text and in the first question students are asked to tell what the text is about. Students who did not read these parts of the task missed these hints.

With regard to question comprehension (the Q-blocks), Figure 4.3 shows that the lowest achievers showed more indicators of self-regulation concerning question comprehension (19 Q-blocks) than the average (12 Q-blocks) and best achievers (8 Q-blocks). A closer look at the protocols showed that many of these indicators arose because the lowest achieving students had difficulty with relating questions to the text contents. Johnny, Sara and Brandon for example, had not read parts of the text to which the questions referred to. Consequently, they were not able to match the questions with their situation model of the text (e.g. Sara: "*Uhm, I do not understand this question. I suppose I need to read on.*") . They tried to solve this by switching to text reading (Johnny and Sara) or asking for help (Brandon). The better achieving students had fewer indicators dealing with this type of difficulty. For example, the self-regulatory activities concerning question comprehension of Zeno, Daan and Alicia involved careful reading of the questions and understanding of what they were supposed to do (e.g. Daan: "*Am I supposed to answer the question orally to you?*")

Regarding the A-blocks, Figure 4.3 reveals few differences between the different groups. In all groups students gave indications of not knowing the answer to questions (A?-blocks) and in most cases they consulted specific parts of the text to search for relevant information (AS-blocks) or read parts of the text they did not read before (R-blocks). A closer look at the protocols revealed that most of the best and average achievers succeeded quite well in finding answers, because they knew where to find relevant information, presumably as a result of a more complete situation model of the text.

Finally, the self-regulatory activities in the text reading stage (R-blocks) were compared for the three groups. Because the results of the correlation analyses showed significant relations of regulation involving Text Processing directed at comprehension (2.1.2) and Task Execution (2.2) with task achievement, it is focused on these aspects. Figure 4.4 represents how the activities performed during text reading were divided over the main categories (left pie) and were divided over the different types of text comprehension activities (right pie). The histogram shows how the activities were divided over the different types of task execution activities.

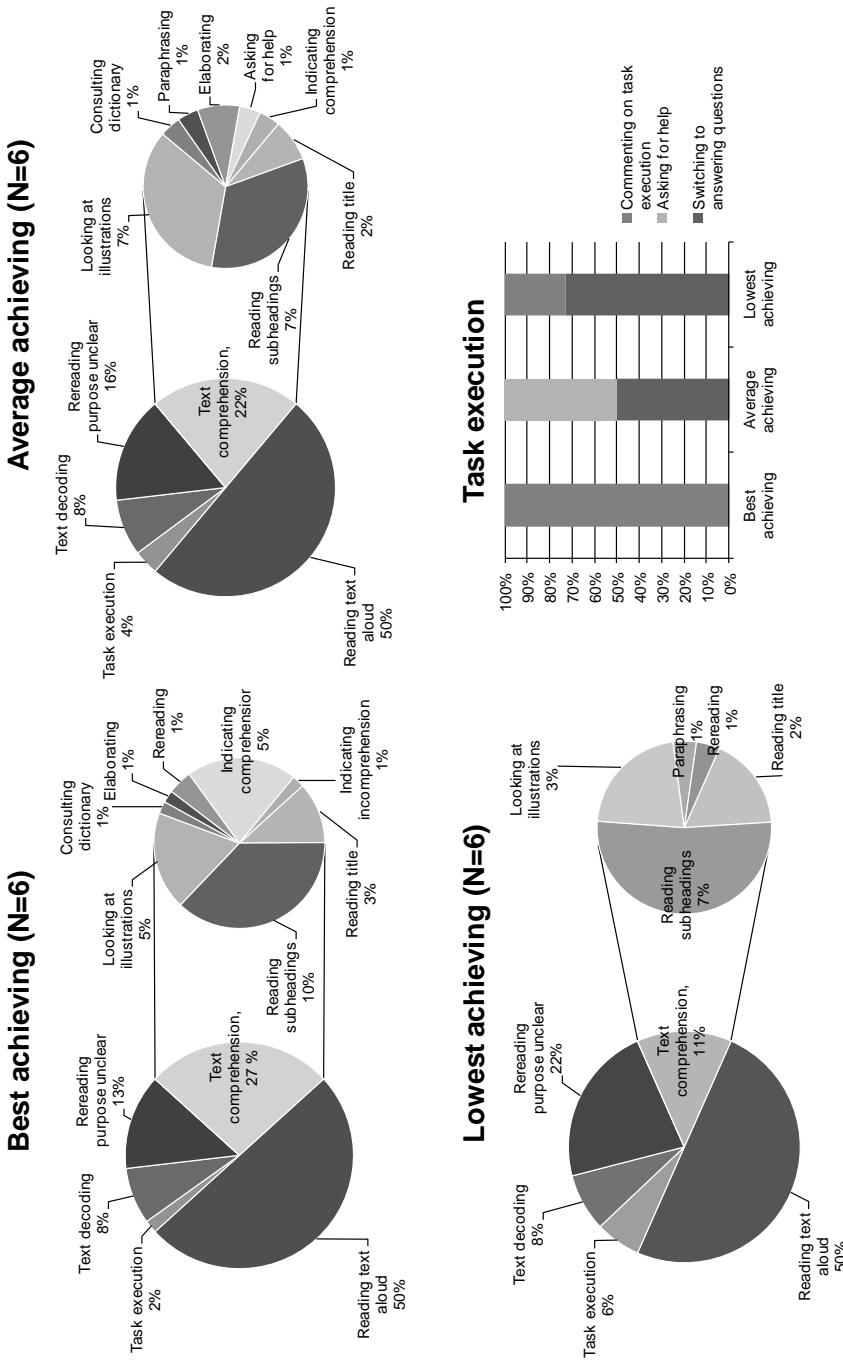


Figure 4.4. Default and self-regulated activities in text reading stage of 18 students who obtained the highest, average and lowest performance scores.

Figure 4.4 shows that the best and average achieving students' indicators of text processing directed at comprehension differed from the lowest achieving students. A larger proportion of the activities performed by these students during text reading were directed at text comprehension; respectively 27% and 22% opposed to 11%. Moreover, the profiles of the best and average achieving students show more variation in the type of activities used for regulating text comprehension. Finally, the best achieving students showed more indications of comprehension and incomprehension than the average and low-achieving students. Together this suggests that the best and average achieving students monitored their text comprehension more actively compared to the low-achieving students, which probably resulted in better task achievement. For Task Execution, Figure 4.4 shows that the best and average achievers show fewer switches between text reading and answering the questions than the lowest scoring students. These findings suggest that the decision of students to start answering questions during text reading may have had a negative impact on their task performance.

4.6 Conclusions and discussion

The objective of this study was to determine types and sequences of self-regulation activities in the approach of task oriented reading of low-achieving adolescent readers and to relate these activities to the quality of their task performance. It was found that low achieving adolescent readers carried out several types of self-regulatory activities during the three stages of task oriented reading. A large majority of the readers performed task orientation activities. Most of these activities were directed at the task (skimming, reading the questions, questioning the goal et cetera). A few were directed to the text (activating prior knowledge, looking at illustrations or at headings). The findings with regard to self-regulation in the stage of text reading concur with what can be expected from the literature about differences between poor and more proficient adolescent readers (Biancarosa & Snow, 2006; Cerdán & Vidal-Abarca, 2008; Cataldo & Oakhill, 2000; Pearson, et al., 1992; Pressley, 2000; Oakhill & Cain, 2007). Most self-regulation activities during text reading were directed at constructing a text base and to a much lesser extent at text comprehension directed at constructing a situation model (Kintsch & Kintsch, 2005). Indications of self-regulation found in analyses of more proficient readers, such as predicting, inferring, summarizing and self-questioning) were completely absent in the behavior of the readers observed in this study. In the stage of answering questions, students showed various indications of monitoring comprehension of the questions and regulating the answering process. When questions were not understood or when students were not able to answer the

questions, they returned to the text to search for answers, reading parts of the text again or asked for help.

Although the results point towards the existing image of low-achieving adolescent readers being mainly oriented towards building a text base, also support was found for the expectation that there are relevant differences in regard to self-regulation within the group of adolescent low achieving readers (Biancarosa & Snow, 2006; Rapp et al., 2007). Differences in frequency of self-regulated activities in the stage of text reading were related to task achievement, while those directed at task orientation and answering questions were not. In other words, the difference in reading task performance among adolescent low-achieving readers was determined in the text reading stage and not in the other two stages of task oriented reading. More specifically, students showing more indications for regulating their text comprehension obtained higher task achievement scores, whereas students who paid more attention to task execution during text reading obtained lower scores. These results are important, because they suggest that, although most adolescent low-achieving readers are mainly focusing on creating a text base, self-regulation directed to comprehension and the creation of a useful situation model for task achievement is within the reach of some of these low-achieving readers. In addition, when confronted with an inconsistency, about one fifth of the low-achieving readers applied self-regulatory activities directed at monitoring their comprehension. Furthermore, these findings suggest that successful task performance is characterized by knowing when to execute what types of self-regulating rather than simply applying a lot of self-regulation.

A close look at the sequential nature of self-regulatory patterns of the best, average and lowest achieving readers provided a better understanding of their relationship with task achievement. The best and average achieving students in the group of low-achieving readers showed a sequential pattern that can be characterized as follows. They performed task orientation activities first, after which they read the complete text from beginning to end and finally answered the questions one by one. In contrast, the lowest achievers in the sample started with task orientation as well, but subsequently alternated between the stages of text reading and answering the questions. These different patterns point to a difference in approach of the task: while the low-achieving readers who received higher achievement scores read the introduction to the task or the assignment directing students to read the complete text, the lowest achievers missed these hints or decided not to follow them. Therefore, these students interrupted text reading for reading and answering the comprehension questions several times. These interruptions probably inhibited the construction of a complete situation model and therefore impeded task achievement. By their more straightforward approach the best and average low-achieving readers were able to

build a more complete situation model and therefore faced fewer difficulties in understanding and answering the questions. Thus despite that the task orientation activities were not related to task achievement in the correlation analyses, the sequential analyses point to the importance of the type of self-regulated activities performed in this stage of task oriented reading. Although we are cautious not to imply causation, it seems to be plausible that differences in task achievement might be better explained by types and patterns of self-regulation rather than by frequency of self-regulation.

The differences found between low-achieving readers seem to correspond with two of the reader profiles distinguished by Alexander & Murphy (1998). In their attempt to characterize reading processes and text comprehension of readers of diverging proficiency, they distinguished the following reader profiles: highly competent, seriously challenged, resistant, effortful and non-strategic. Based on the findings, it can be concluded that readers in this study with the best and average task performance had some characteristics of effortful processors. Although reading was difficult for them, these readers managed to formulate satisfactory answers to the questions posed. In addition, their self-regulation focused not only on forming a text base, but also on attempts to relate the text to their prior knowledge. This was demonstrated by their attempts to monitor their comprehension and to repair problems when encountered. In contrast, the readers with the poorest task performance have some of the characteristics of non-strategic processors, because they demonstrated significantly fewer comprehension related activities in the text reading stage. In addition, compared to the best and average performing low-achieving readers, they showed an ineffective and quite disorderly task approach, resulting in insufficient text comprehension to find satisfactory answers to the questions posed.

In contrast to the image arising from studies comparing low-achieving with proficient adolescent readers, the results of this study support the idea that within the group of low-achieving readers there are important differences in self-regulatory activities. Some of these low-achieving readers put effort in comprehension monitoring and giving meaning to text contents by relating them to prior knowledge about the topic, while others do not show signs of such construction of a situation model of the text. In addition, the low achieving readers in the first group were more likely to receive relatively high scores for task performance than their peers. This suggests that even for low-achieving readers who have to rely on limited resources for reading (such as genre knowledge, topic knowledge, linguistic knowledge, reading fluency, and metacognitive knowledge), active self-regulation of comprehension directed processes is effective. Whether we can discern different 'profiles' of low-

achieving readers and to what extent the observed differences are task-specific manifestations of self-regulatory activity, dependent on motivation, prior knowledge or other contextual factors cannot be determined on the basis of this study, however, but should be subject of future investigations.

Notwithstanding the differences found, the repertoire of self-regulative activities for adolescent low-achieving readers turned out to be still limited. Strategies directed at text comprehension that are often reported for more proficient readers, such as predicting, inferring, summarizing and self-questioning, were not found in the analysis. In addition, several approaches taken by these low-achieving readers, especially interrupted reading of text and jumping into the questions, turned out to be ineffective. Although the specific reading task in this study did not contain concrete rewards for the students to show high task achievement, it is not believed that this influenced the results in a significant way. First, the students in general appeared quite motivated in performing the reading task in front of an encouraging and motivating researcher. The students also knew the researcher well, because they were involved in a broader (longitudinal) study in which she had collected data from them for more than a year. Therefore, students felt quite at ease and were not shy in expressing their thoughts during task achievement. In addition, few self-regulatory activities directed to constructing a situational model of the text are also reported in other studies of the reading process of low-achieving adolescent readers (Chambers Cantrell et al, 2010; Graesser, 2007). Consequently, it is assumed that the low frequency of indications of predicting, inferring, summarizing and self-questioning is a valid characteristic of these students' reading.

There is thus ample reason to stress the importance of teaching self-regulatory strategies to adolescent low-achieving readers. Several studies indicate that instruction directed at self-regulation of reading can enhance reading skill (Chambers Cantrell et al., 2010; Edmonds et al., 2009; Paris, Wasik & Turner, 1991; Mason, 2004; Pressley, 2000). Emphasis on self-regulatory skills for reading education to adolescent low-achieving readers is warranted. A focus on self-regulation directed at text comprehension (paraphrasing, making inferences, comprehension monitoring, summarizing) seems particularly promising for these students. Instruction directed at task orientation and planning an orderly task approach also seems to be promising. For example, teaching students to pay careful attention to the assignment in its entirety before starting to read the text may help low-achieving readers to adopt a more successful task approach. Since reading tasks for adolescents become increasingly long and complex, students should also become familiarized with activities such as scanning, determining importance and coordination of multiple text sources. In addition, it is not always efficient to read texts from beginning to end. It was observed

that some low-achieving readers in this study took a different approach to the reading task, alternating text reading and answering of questions. This seems to indicate that they attempted a more advanced reading approach than they are ready for. Nevertheless, they may be ready for instruction directed at these more advanced strategic task approaches, in which they have to consider their own limited resources in the context of the demands posed by the reading task. Such instruction can consist of explicit description of strategies alternated with guided practice and independent use in individual or collaborative settings. In addition, several scholars suggest embedding such strategy instruction in the context of content area teaching (Biancarosa & Snow, 2006; Duke & Pearson, 2002; Graesser, 2007; Guthrie & Wigfield, 1997; Palinscar & Herrenkohl, 2002; Kamil, Borman, Dole, Salinger & Torgesen, 2008).

Finally, it is recognized that this study has limitations. The self-regulatory activities were analyzed using one specific reading task. Therefore, it is not known to what degree the approaches taken by the students were task-specific or more generalizable. Future studies will have to clarify what roles low-achieving readers' topic and vocabulary knowledge play in the type of self-regulatory activities these students engage in while executing reading tasks. In addition, we have no insight in the influence think aloud procedures might have on low-achieving students' task achievement. In future studies, a comparison with reading task achievement of students with and without think aloud instruction must inform us whether the verbalizing of thought is likely to influence the quality of their performance in one or other way (for worse or for better). Nevertheless, it is believed that the in-depth exploration of the types and sequences of self-regulated activities has added valuable information to the body of research into reading processes of low-achieving adolescent readers.

Chapter 5

Self-regulated writing in relation to text quality¹⁷

This study examines the relationship between patterns of cognitive self-regulatory activities and the quality of texts produced by adolescent struggling writers (N=51). A think-aloud study was conducted involving analyses of self-regulatory activities concerning planning, formulating, monitoring, revising and evaluating. The study shows that the writing processes of adolescent struggling writers have much in common with 'knowledge-telling' as defined by Bereiter and Scardamalia (1987). Nevertheless, there are interesting differences between the individual patterns. First, it appears that adolescent struggling writers, who put more effort in planning and formulation, succeed in writing better texts than their peers. Furthermore, self-regulation of these better achieving writers is quite varied in comparison to the others. Therefore, it seems that within this group of struggling writers self-regulation does make a difference for the quality of texts produced. Consequently, some recommendations for stimulation of diverse self-regulatory activities in writing education of this special group of students can be made.

¹⁷ This chapter is based on:

De Milliano, I., Van Gelderen, A., & Sleegers, P. (2012). Patterns of cognitive self-regulation of adolescent struggling writers. *Written Communication*, 29 (3), 303-325.

5.1 Introduction

Learning to write well is a necessity for young people (Graham & Perin, 2007). Along with reading comprehension, writing skill is an important factor for academic and professional success and a basic requirement for participation in the current information society. Yet, studies in a range of countries have signaled that many adolescents struggle with literacy and that large numbers of adolescents are unable to write at the levels required by the school curriculum and future employers (Alliance for Excellent Education, 2006; Baumert, et al., 2001; Hofman, Spijkerboer & Timmermans, 2009; Inspectie van het Onderwijs, 2008; OECD, 2003). A great deal of research has focused on writing processes (Alexander, Graham & Harris, 1998; Bereiter & Scardamalia, 1987; Englert, Raphael, Fear & Anderson, 1988; Flower & Hayes, 1980; Graham, 2006; McCutchen, 1995). Nevertheless, few studies focus on adolescent writers with poor writing skills (Juzwik et al., 2006). Consequently, there is little understanding of what differences within this group of struggling writers exist and whether differences in approaching writing are related to differences in the quality of writing. In this study, we explore frequencies and patterns of cognitive self-regulatory activities in relation to the quality of the text produced. We focus on the cognitive aspects of self-regulation as it is a very important element of writing and studies have shown that writers need to employ a diversity of cognitive self-regulatory activities (Bereiter & Scardamalia, 1987; Englert et al, 1988; Graham & Harris, 2000). This study not only makes a contribution to the literature on writing processes and the role of cognitive self-regulation, but it also offers insights in designing educational interventions to improve the writing of struggling adolescent writers.

5.2 Theoretical background

5.2.1 Cognitive self-regulation

Writing is commonly viewed as a difficult and demanding problem-solving task requiring skills of text production (handwriting and spelling), knowledge of genres and writing conventions and extensive self-regulation to manage the writing environment, the constraints imposed by the writing task and the processes involved in composing (Graham & Harris, 2000). Particularly, in the writing models of Hayes and Flower (1980), and Bereiter and Scardamalia (1987), the cognitive and self-regulatory aspects of composing are emphasized. Flower and Hayes (1980), for instance, noted that “a great part of the skill in writing is the ability to monitor and direct one’s own composing process” (p. 39). Cognitive processes refer to the mental operations employed during writing and divided into the sub-processes of planning, formulating

and reviewing. Writers monitor these sub-processes and decide when to go from one to the other (Hayes & Flower, 1980; Hayes, 1996). The strategies for executing and coordinating writing processes are referred to as cognitive self-regulation (Torrance, Fidalgo & Garcia, 2007; Zimmerman & Risemberg, 1997). From the existing studies on self-regulation a variety of cognitive self-regulatory activities have been identified that writers use for planning (establishing goals, selecting and organizing contents), formulation (translation of ideas into language), monitoring (checking whether writing goals are met), reviewing (checking the text produced so far), revising (modifying text) and evaluating (assessing the quality of the text written) (Graham & Harris, 2000).

In addition, writing is commonly viewed as a recursive process in which writers monitor the success of activities conducted and continuously modify what they are doing, based on the outcome of this process. Van den Bergh and Rijlaarsdam (1999) emphasize that the different self-regulation activities do not occur in a random order. They stress that the nature of the writing process depends on how text composing proceeds and that different types of self-regulation are dominant during different stages of the writing process. They found that writers who planned in the beginning of their writing process wrote better texts than those who planned at later moments in the writing process. In studying writing processes it is therefore not only important to examine the type and frequencies of self-regulatory activities, but also the moment and the distribution of the different types of self-regulation over the writing processes. In this light, it is informative to look at sequential patterns of self-regulatory activities next to exploring the frequency of separate processes.

5.2.2 Differences between more and less proficient writers

A great deal of research has been done regarding writing processes and texts produced by writers of diverging proficiency. Some studies were directed to the comparison of novice and expert writers (Bereiter & Scardamalia, 1987; Graham, 2006; Sitko, 1998). Other studies focused on specific grades or age-groups and compared the writing processes and products of peers with lower and higher writing proficiency (Graham, Schwartz & MacArthur, 1993; Van den Bergh & Rijlaarsdam, 1999; Van Gelderen, 1997). Still other studies specifically focused on individuals with high writing proficiency, identified as expert or professional writers (Flower & Hayes, 1980; Ransdell & Levy, 1996; Wellington, 2010) or writers with low writing proficiency referring to struggling or disabled writers (De La Paz, Swanson & Graham, 1998; Englert et al., 1988; Graham, 1997).

From these different types of studies three general tendencies are visible. First, it is found that proficient writers (both in same-age as in different-age comparisons) know more about aspects of writing than less proficient writers. They know more

about the topics they are writing about (Kellogg, 1987), have more knowledge about genres and writing conventions (Englert et al., 1988; Graham et al., 1993; McCutchen, 1986) and know more about the use of language as a symbol system, including spelling, grammar and punctuation (Applebee, Langer, Jenkins, Mullis & Foertsch, 1990). Some researchers also argue that linguistic fluency (i.e. lexical and grammatical fluency) reduces the cognitive load associated with formulation, allowing writers to spend more attention to text quality (Van Gelderen, Oostdam & Van Schooten, 2011; Van Gelderen & Oostdam, 2005) and to produce longer stretches of language without pausing (Chenoweth & Hayes, 2003; Hayes & Chenoweth, 2007).

Second, developing writers become more self-regulated with age and schooling. Older writers are more experienced and competent in writing than younger ones resulting in a more extensive repertoire of self-regulative strategies and knowledge about writing and an increase in self-regulatory activities. As writers gain competence, both quantitative and qualitative shifts are observed. Self-regulatory activities that were initially inefficient are refined to make them more effective (Alexander et al., 1998). Furthermore, some studies suggest that the use of self-regulatory control directed at lower-level aspects of task execution declines because these lower level activities are becoming automatized, whereas the use of other self-regulatory activities increases as a result of the increase in complexity and difficulty of tasks (Alexander et al., 1998).

Third, it is found that individual differences in self-regulation are related to individual differences in the quality of the text written. Writers with less self-regulatory activities typically produce texts of poorer quality than more self-regulated writers (Bereiter & Scardamalia, 1987; Braaksma, Rijlaarsdam, Van den Bergh & Van Hout-Wolters, 2004; Graham et al., 1993). Differences were primarily found in the activities of planning and revision. More proficient writers devote more attention to planning their writing. They do not only plan what they write but also how to write it, establish goals for writing, organize ideas and consider the needs of the intended readers. For less proficient writers, it is not uncommon to start writing immediately or to spend little time on planning (Bereiter & Scardamalia, 1987; McCutchen, 1995). When these writers are prompted to plan in advance, their plans are very limited. Like planning, revision plays a limited role in the writing process of less proficient writers. More proficient writers (both in same-age as in cross-age comparisons) revise for meaning and make sentence- and topic-related changes, whereas the revisions of less proficient writers are limited to lower level aspects, such as spelling and grammar (Van Gelderen, 1997).

The writing of less proficient writers is often characterized by the model of knowledge telling (Bereiter & Scardamalia, 1987). Knowledge telling basically involves

retrieving content relevant to the topic from long-term memory and writing it down (Harris et al, 2009). In the stage of generating and formulating ideas little attention is directed to rhetorical goals, constraints imposed by the assignment, needs of intended readers or text organization. This is not to say that this knowledge-telling process is thoughtless. Rather it is primarily forward moving with little recursive interplay among writing processes observed with proficient writers (Flower & Hayes, 1980; Graham & Harris, 2000). It seems likely that the writing processes of adolescent struggling writers show much similarity to the knowledge-telling process. This expectation is largely based upon research directed at rather heterogeneous populations in terms of age and proficiency. Consequently, there is little in depth understanding of differences in self-regulative activities employed *within* the group of adolescent struggling writers. Therefore, it is also not clear whether there are differences within this group of writers that are related to differential quality of their writing. If so, it is of interest to know which self-regulated activities are used by writers who write texts of better quality and whether these differences are limited to activities directed to planning and revision, or that also other self-regulatory activities are involved (directed to formulation, monitoring or evaluation). Most studies have focused only on planning and revision. This study aims at the relationship between the frequency of cognitive self-regulatory activities and the quality of texts produced by adolescent struggling writers. In addition, it explores the sequential patterns of cognitive self-regulation activities of these writers that are related to the quality of their performance.

5.3 The present study

This study aims at the relationship between the frequency of cognitive self-regulatory activities and the quality of texts produced by adolescent struggling writers. In addition, it explores the sequential patterns of cognitive self-regulation activities of these writers that are related to the quality of their performance. The following questions were studied:

- 1) Which cognitive self-regulation activities are adolescent struggling writers most frequently engaged in prior to and during text production?
- 2) What are the relationships between frequency of different cognitive self-regulation activities and text quality for adolescent struggling writers?
- 3) What sequential patterns of cognitive self-regulation discriminate adolescent struggling writers who write texts of highest, average and lowest quality?

We are particularly interested in the question to what degree the cognitive self-regulation activities of these adolescent struggling writers reveal signs of knowledge telling, as described above, and whether there are differences between these students related to the quality of texts they produce (e.g. in frequency of planning or revision activities, or the timing of these activities in relation to other types of cognitive self-regulation).

5.4 Method

5.4.1 Participants

Adolescent struggling writers in this study were Dutch students in the lowest 30-percentile of general academic skills as measured by an academic aptitude test (language, reading and mathematics) taken prior to admission of secondary education. In the Netherlands, these struggling writers are enrolled in the lowest tracks of prevocational secondary education. The study involved a sample of 51 students (22 girls and 29 boys) from 10 eighth grade classes from 9 ethnically mixed schools in the lowest track of secondary prevocational education in the Netherlands. The students were between 13 and 15 years old ($M=14.7$). Students diagnosed with learning or behavioral disorders (e.g. dyslexia, ADHD) were not included in our sample, in order to ascertain that cognitive self-regulation patterns observed were related to poor writing proficiency per se and not to these specific behavioral disorders.

5.4.2 Writing assignment

For the investigation of cognitive self-regulation, a think-aloud study was conducted which involved the detailed analysis of videotapes of students executing a writing assignment. This assignment involved a task quite representative of tasks in the school curriculum of these students. The assignment consisted of a text and a writing task in which students were asked to express their opinion by writing a piece for the school paper. The text was designed according to the principles of good study texts (Land, Sanders & Van den Bergh, 2008): involving a current topic, appealing to the interests of boys and girls and including facts and figures (photographs and map). The text was a newspaper article about the war in Afghanistan in which special attention was given to the nature and state of the Dutch military mission in the province of Uruzgan in Afghanistan.

Each student wrote a text with think-aloud instruction. Prior to the experiment all students received a think-aloud instruction. To clarify, a short demo was shown in which a young man reads another newspaper article and verbalizes what he is doing and thinking. When students kept silent for more than 5 seconds, the experimenter encouraged them to report their thoughts. Prompting to think aloud was hardly

necessary, because students rarely fell silent. In providing feedback, the experimenter avoided steering or influencing the course of the reading and writing process. Each student wrote a persuasive text about continuation or ending of the Dutch military mission in Afghanistan. Students were allowed to use the newspaper article, a dictionary and scratch pad. In addition, they were told that they were completely free in how they wanted to proceed, what to do first and what means to use. The students were told that we were interested in their usual approach towards such writing assignments for school. Students could take as much time as they wanted to complete the task. All sessions were individual and took place in scheduled hours during a school day. The average length of the texts produced was 50 words ($SD=24$). The complete writing process lasted 285 seconds on average ($SD=156$), of which the stage before text writing lasted 78 seconds on average ($SD=59$) and the stage during text writing 208 seconds on average ($SD=128$).

5.4.3 Scoring and analyses

The complete writing process was registered using videotapes, and subsequently analyzed by using codes for each indicator of self-regulatory activities that was audible or visible. A scheme was developed describing all of these indicators of self-regulation. The indicators of self-regulation included both verbalized behavior (for example: "*I see that my text does not consist of 10 lines.*") and non-verbalized behavior (for example, watching the pictures in the newspaper article or using the dictionary). For coding, the writing process was divided into two different stages: 1) self-regulation indicators displayed before the stage of actual text production (e.g. reading the assignment or asking questions about it) and 2) self-regulation indicators displayed from the moment that the writer started writing. The coding scheme was inspired on previous analyses of writing processes such as those of McCutchen (1995) and Van den Bergh and Rijlaarsdam (1999). In addition, we carried out a pilot study among 10 adolescent struggling writers who did not participate in the present study to track down specific indicators of self-regulatory activities that may occur in the specific assignment used (e.g. reading the assignment, forming an opinion, consultation of newspaper article, rereading text fragment). All of these indicators were added to our coding scheme to assure a full coverage of all occurring self-regulative activities. First, we coded all activities in categories that described them as literally as possible, as in the examples given above. Verbal activities were scored on the utterance level (each complete utterance was scored as one instance of an activity); non-verbal activities were scored as one complete instance. Second, we attached labels to the specific activities, representing more general processes of self-regulation (planning, formulating, monitoring, revising and evaluating). To reconstruct a complete overview of all writing

activities two codes were added to the scheme. First, the code 'silence' was included for the moments in which students fell silent for more than 3 seconds. Second, the code 'transcription' was included when students were transcribing the text on paper. These codes indicate activities of the writer that are not directly regarded as cognitive self-regulation, but are useful for reconstructing the sequential nature and patterns of self-regulatory activities. By coding transcription, it was possible to analyze how often text production was interrupted by self-regulatory activities, which is an important indicator for the degree to which knowledge telling processes occur. Overviews and examples of the codes are displayed in Tables 5.1 and 5.2. The videotapes of 10 students were coded by two independent trained research-assistants. The agreement was fairly high. For the indicators of types of self-regulation, silence and transcription 89 percent were identically coded. Differences in coding were resolved after discussion.

For the evaluation of text quality of the text written, we used a method based upon Primary Trait Analysis (PTA) (Lloyd-Jones, 1977). PTA enables a holistic view of text quality derived from the specific objective stated in the specific writing assignment under investigation. This method probably alleviates problems with holistic scoring of writing products such as low construct validity, low inter-rater reliability, sequencing effects and stability (Tedick & Mathewson, 1995). First, a primary trait was defined describing the ideal text in regard to goal orientation, structure and organization, audience orientation, and language and style. Next, we constructed a five point interval scale consisting of five texts selected from all texts produced adopting a procedure described in Blok (1986) and applied in Van Gelderen et al. (2010). Every individual text received a score on the primary trait by comparison to the five texts forming a 'ruler' with fixed scores of 10, 25, 50, 75 and 90. Two independent trained research-assistants marked all texts independently. The correlation between the scores of raters was high (.91). In the final rating (the mean of the scores of the two raters), scores ranged between 4.5 and 95.5. The average score was 36.1 ($SD=24.7$). In Figure 5.1 English translations of the texts with the highest (text 1), average (text 2) and lowest (text 3) scores are presented. These examples illustrate the writing ability of the adolescent struggling writers in our sample and give an impression of the differences that exists among them.

Text 1 - Best achieving (95.5 points)

Neverending war

For many years Afghanistan and America make war. When will this stop? When do you think when there will be peace between America and Afghanistan? And what about the Dutch people in Afghanistan? Despite that there are many people killed should they stay there or not? I think that the Dutch soldiers should return to The Netherlands, because the Afghan soldiers are capable to take care of the safety of their own citizens. What do you think? Send your response to us.

Written by student Fleur 2B

February 10th, 2009

Text 2 – Average achieving (32 points)

It is okay that they stay in Afghanistan, but it is also very dangerous there.
It is okay that they stay there to help.
But that they come home to be with their family and friends every period.

Text 3 – Lowest achieving (4 points)

They should stayed, because it is going very miserable over there. it is the soldiers' own problem (choice)

Figure 5.1. Translations from Dutch (including language errors) of the texts with the highest (text 1), the average (text 2) and the lowest quality scores (text 3).

5.5 Results

5.5.1 Self-regulation in the stage of pre-writing

We first examined the types and frequencies of all indicators of cognitive self-regulation observed prior to text production. The types of indicators coded in this stage of task execution, their frequency, range and mean are presented in Table 5.1.

Results in Table 5.1 show that from the 313 self-regulatory indicators before writing, 304 indicators were directed to planning. The most frequent planning indicator was 'forming of opinion'. The number of indicators for 'forming of opinion' ranges from 0 to 14, meaning that at least one student did not show any indication of 'forming of opinion', whereas at least one student did so fourteen times. The mean number of 'forming of opinion' equals 3.0. Furthermore Table 5.1 shows that the different types of self-regulatory indicators are not equally frequent in the pre-writing stage; 'reading assignment', 'informing about the task purpose' and 'local planning of the writing process' were clearly more frequent than the other planning indicators. Relatively few indicators were found that students planned the writing process in a more advanced way by orientation on the organization of the text, the type of

discourse, the medium for publication or the needs of intended readers. These findings indicate that the students were primarily generating ideas and orienting on what to write down next. Additionally, Table 5.1 shows that few indicators of monitoring were found. Monitoring became manifest by utterances of (in)comprehension, comments on own task execution and asking for feedback.

Table 5.1 Examples, frequency, range and mean of self-regulatory indicators in the pre-writing stage (N=51)

	Frequency	Range	Mean (SD)
Total indicators of pre-writing	313	0-18	6.08 (4.3)
Planning	302	0-17	5.8 (4.0)
• Forming of opinion	156	0-14	3.0 (3.7)
e.g. <i>"I think it is up to the soldiers whether they want to risk their lives for the people in Afghanistan."</i>			
• Reading assignment	58	0-3	1.12 (.6)
• Informing task purpose	36	0-3	.69 (.9)
e.g. <i>"Do I have to write a text on my opinion?"</i>			
• Local planning writing process	33	0-3	.60 (.9)
e.g. <i>"First, I am going to read the assignment."</i>			
• Planning text structure	5	0-3	.10 (.5)
e.g. <i>"Because this is a school paper article, I start with a heading and the place-name, and then I give my opinion."</i>			
• Commenting on task	4	0-2	.08 (.3)
e.g. <i>"I execute such writing tasks no so often."</i>			
• Activating prior knowledge	3	0-3	.06 (.4)
e.g. <i>"Usually, these texts start with a heading."</i>			
• Exploring pictures newspaper	3	0-3	.06 (.4)
• Goal setting	3	0-1	.06 (.2)
e.g. <i>"Thus, I have to write a text on my opinion about the Dutch military mission in Afghanistan."</i>			
• Exploring task quickly	2	0-1	.04 (.2)
• Exploring newspaper quickly	1	0-1	.02 (.1)
Monitoring	9	0-3	.17 (.6)
• Utterance of (in)comprehension assignment	5	0-3	.10 (.5)
e.g. <i>"Okay, I understand."</i>			
• Commenting on own task execution	3	0-2	.06 (.3)
e.g. <i>"This is what I can think of right now, maybe I will think of more during writing."</i>			
• Asking for feedback on activities performed	1	0-1	.02 (.1)
e.g. <i>"Do I skip anything?"</i>			
Other indicators			
• Being silent	9	0-2	.17 (.4)

5.5.2 Self-regulation in the stage of text production

Table 5.2 shows the descriptive statistics for all indicators of self-regulation (and also the episodes in which students fell silent or were busy transcribing) coded during text production, i.e. after students started composing their first sentence.

Table 5.2 Examples, frequency, range and mean of self-regulatory indicators in the text production stage (N=51)

	Frequency	Range	Mean (SD)
Total indicators of text production	328	0-27	10.25 (6.3)
Planning	135	0-20	2.6 (3.7)
• Forming of opinion	97	0-18	1.9 (3.2)
e.g. <i>"I think that whether the soldiers should stay or leave depends on what they have accomplished so far". Or "I think that the soldiers should stay in Uruzgan, because they should protect the innocent people of Afghanistan".</i>			
• Consulting newspaper article	14	0-2	.27 (.5)
• Questioning goal of the task	6	0-2	.12 (.4)
e.g. <i>"Do I need to write more than this?"</i>			
• Reading newspaper article	6	0-3	.12 (.5)
• Examination of pictures in newspaper article	4	0-1	.08 (.3)
• Reading the assignment	3	0-1	.06 (.2)
• Planning of text structure	3	0-2	.06 (.3)
e.g. <i>"I start this text with a title".</i>			
• Planning of the writing process	1	0-1	.02 (.1)
e.g. <i>"Shall I write this down here already?"</i>			
• Prior knowledge activation	1	0-1	.02 (.1)
e.g. <i>"I think of Afghanistan, of what I can write about it".</i>			
Formulation	33	0-5	.63 (1.1)
• Translating ideas into language	23	0-5	.45 (1.0)
e.g. <i>"Dutch people, oh no I need to say Dutch troops."</i>			
• Consultation of orthography in dictionary or newspaper article	10	0-1	.19 (.4)
Monitoring	88	0-7	1.7 (1.9)
• Rereading own text	35	0-5	.67 (1.0)
• Commenting on writing process	28	0-3	.54 (.9)
e.g. <i>"I do not know what I can write apart from this."</i>			
• Asking for feedback on activities performed	8	0-2	.15 (.5)
e.g. <i>"I need to say 'fighting', isn't it?"</i>			
• Asking for help or explanations	4	0-2	.08 (.3)
e.g. <i>"Is this one sentence or do I need to split it up?"</i>			
• Signaling (in)comprehension of the assignment	4	0-1	.08 (.3)
e.g. <i>"Ohm, wait a minute I read it again."</i>			

(Table 5.2 continued)	Frequency	Range	Mean (<i>SD</i>)
• Counting the number of lines own text	2	0-1	.04 (.2)
• Signaling (in)comprehension own text e.g. <i>"I need to read it again because I do not understand what I have written."</i>	2	0-1	.04 (.2)
• Signaling (in)comprehension newspaper article e.g. <i>"Ohm, 'dilemma' refers to the choice of the soldiers to stay or leave".</i>	1	0-1	.02 (.1)
Revision	18	0-3	.35 (.7)
• Revisions on word or sentence level (local)	14	0-2	.27 (.6)
• Revisions on a more global level	4	0-1	.08 (.3)
Evaluation	54	0-3	1.04 (.7)
• Commenting on own text e.g. <i>"Ohm, I am something forgotten."</i>	48	0-3	.92 (.7)
• Commenting on assignment e.g. <i>"It looks like a language game."</i>	3	0-2	.06 (.3)
• Commenting newspaper article e.g. <i>"The newspaper article contained few difficult words."</i>	3	0-1	.06 (.2)
Other indicators			
• Transcribing text	175	1-9	3.50 (2.0)
• Copying draft text	1	0-1	.02 (.1)
• Being silent	54	0-6	1.04 (1.3)

Table 5.2 shows that indicators of planning were the most frequent. In this stage, the planning indicators consisted mainly of activities that we can assume to be directed to content generation (forming of opinion, consultation of the newspaper article, reading parts of the newspaper article and examination of the pictures in the newspaper article). Occasionally, the assignment was reread or there were indicators of planning the text structure. Table 5.2 also shows that we found some indicators of self-regulation directed to formulation (translating ideas into language and consultation of sources for orthography). Several students used the newspaper article to find out how to write 'Afghanistan' correctly, for example. Table 5.2 shows that few indicators of monitoring were found. Monitoring processes during writing were manifested by rereading the text written so far and by commenting on the writing process. With regard to revision Table 5.2 shows that indicators of revision were also quite rare. When they are found, they consisted of local revisions directed to a word or maximally a sentence. Revisions on a global level were rarely found. Indicators of evaluation were less rare than indicators of revision, but they were very brief. Evaluation was directed to the text as a whole, and expressed that the writers were satisfied with the result.

5.5.3 Relationships with text quality

In order to answer the second research question, Pearson correlations were computed between text quality and the sum scores of the main self-regulatory processes. The results are reported in Table 5.3.

Table 5.3 Correlations of indicators of cognitive self-regulation with text quality (N=51)

	Total	Pre-writing	Text production
All indicators of self-regulation	.37**	.26, $p=.07$.28*
Planning	.36**	.26, $p=.06$.21
Formulation			.41**
Monitoring	-.03	.06	-.02
Revision			-.00
Evaluation			-.09

*) significant at .05, **) significant at .01

Results in Table 5.3 show that struggling writers that were more active in self-regulation of whatever sort composed texts of better quality ($r=.37; p<.01$). If we look in more detail to the type of self-regulatory activities that make a difference, the results show that planning activities are associated with (or related to) the writing process of adolescent struggling writers ($r=.36; p<.01$), particularly in the pre-writing stage. Furthermore, a significant correlation exists between self-regulatory activities directed to formulation and text quality ($r=.41; p<.01$) indicating that the more students paid attention to problems of formulation (translating ideas into continuous language and attention to orthography) the better was the quality of their texts. Finally, for monitoring, revision and evaluation correlations with text quality are of negligible magnitude. The findings indicate that within the group of adolescent struggling writers monitoring, revision and evaluation are not related to text quality.

5.5.4 Patterns of self-regulation

In order to shed light on the sequential patterns of the self-regulatory activities of these struggling writers (third research question), the patterns of the 6 best, average and lowest achieving writers are visualized in Figure 5.2. In this figure, the transition from the pre-writing stage to the stage of text production for each individual student is indicated by a bold vertical line.

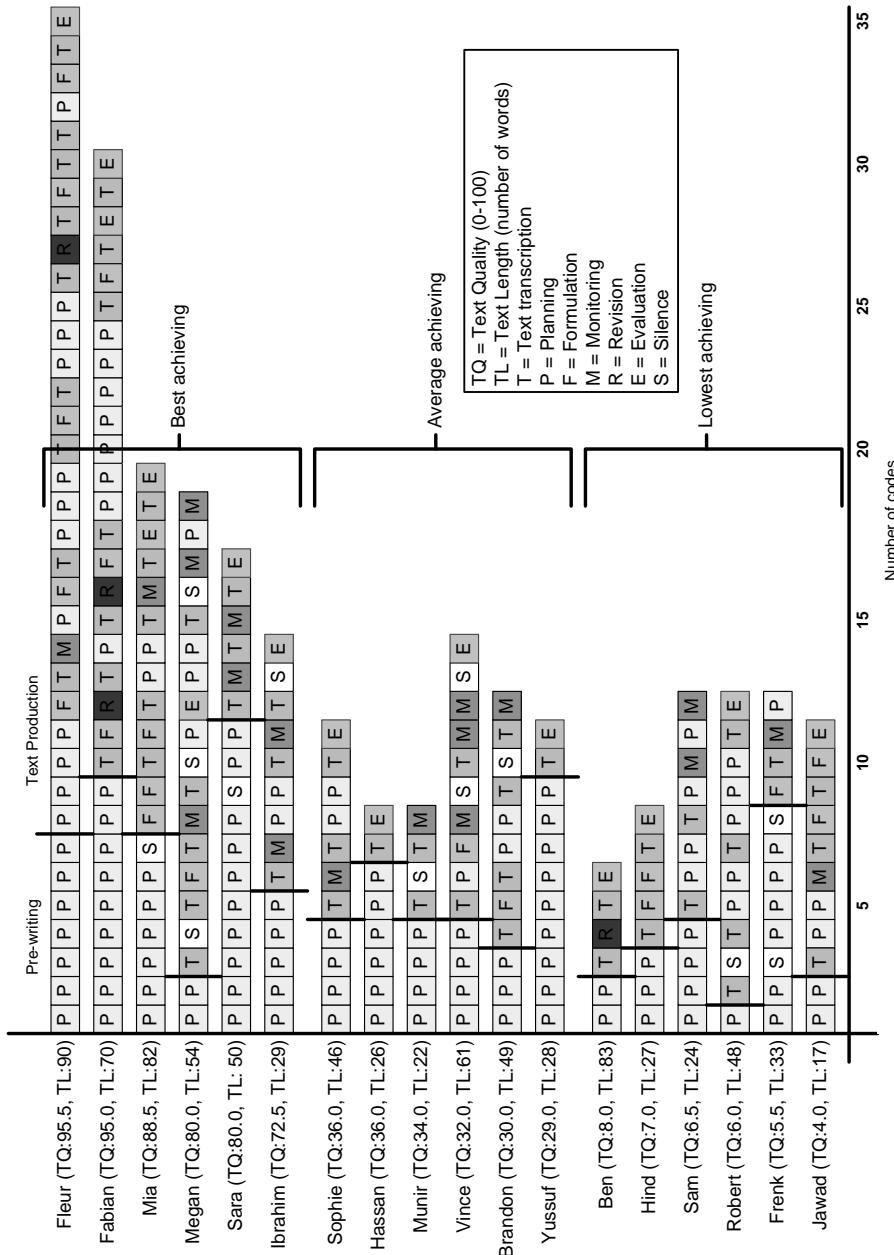


Figure 5.2. Patterns of self-regulation of 18 writers who obtained the highest, average and lowest quality scores.

The transcription episodes (T-blocks) for each writer show when and how often text transcription was interrupted by self-regulatory activities (P-, F-, M-, R- and E-blocks) or silence (S-blocks). If we assume that all struggling writers are engaged in knowledge telling processes in the same degree, very few interruptions for all sequential patterns would be expected. However, Figure 5.2 shows that such interruptions of transcription are rather frequent for most students. In fact, only the patterns of Hassan and Yussuf¹ (both average achieving) show a pattern of uninterrupted transcription without indications of cognitive self-regulation. The one T-block in their pattern indicates that transcription of the whole text occurred without any interruption by other activities, such as reflecting about formulation, monitoring or revising. If we compare the 6 writers who received the highest scores for text quality to the others, it appears that they do not only show more self-regulation in the pre-writing stage (mainly planning activities), but they also transcribe their texts in separate blocks, which are interrupted by several self-regulatory activities directed to formulating, monitoring, revision, evaluating or (again) planning. Most of these more successful writers transcribed their text in 5 or more transcription blocks. In contrast, the writing of the students with average and lowest scores for text quality shows much less interruption of transcription. These writers have no more than 2 transcription episodes on average, suggesting that their writing mainly consists of knowledge telling processes (idea generation and writing ideas down) without much consideration of linguistic, conceptual or rhetorical issues.

In general, Figure 5.2 confirms our finding reported previously that the frequency of self-regulatory activities is positively related to text quality within this group of struggling writers: the best achieving writers on average demonstrate much more self-regulatory activities than the writers who produced texts of lower quality. More importantly however, the patterns also suggest a difference between the average and lowest achieving students. While the average achievers show more indications of planning prior to text production, the lowest achievers display more indications of planning *during* text production. This suggests that the lowest achievers might have started too early transcribing, with too little attention to what they actually wanted to communicate, forcing them to reconsider things after they already had produced a substantial part of their texts. For example Sam and Robert, were forced to generate new ideas after they already had written down ideas and were forced to plan anew in the midst of text production. In contrast, the average and best achieving students devoted more effort in planning before writing, presumably resulting in a more orderly writing process. This finding is comparable to results reported with more proficient adolescent writers by Van den Bergh and Rijlaarsdam (1999).

The patterns depicted in Figure 5.2 show no obvious differences between the three groups in self-regulation directed to monitoring. From our previous analyses, we already saw that all writers in this study showed very few indications of monitoring. Likewise, all our writers showed very little revisions activities. Figure 5.2 shows that the few revision activities that occurred directly succeeded a transcription (or formulation) episode. This suggests that they were directed to local issues (e.g. lexicon or spelling) only and did not concern more global text characteristics (a suggestion confirmed by our direct observation of these episodes in the students' writing). Finally, Figure 5.2 shows that in almost all cases evaluation was the last activity the students undertook. Inspection of these episodes showed that these evaluations were limited to the conclusion that they were satisfied with their text. Therefore, evaluation activities of struggling writers examined here can be characterized as quite superficial and without consequence. The lack of more frequent and more global cognitive self-regulation directed to monitoring, revision and evaluation of their writing is an indication that these writers' processes are still driven by knowledge telling processes. Differences between the better and poorer achievers may be primarily related to the extra effort that the first group invested during writing, breaking down their transcription episodes into smaller units, which allowed them to pay more attention to the quality of their formulation and local planning.

5.6 Conclusions and discussion

An important objective of this study was to determine to what degree the writing processes of adolescent struggling writers can be described by the knowledge telling process (Bereiter and Scardamalia, 1987). This process consists of producing each new sentence by consulting long term memory for new content elements, without paying attention to global text coherence, connections between sentences and rhetorical goals. We found that the writing processes of the writers in our study show many traces of knowledge telling, supporting findings of previous studies into writing processes of struggling writers (Alexander, Graham & Harris, 1998; Bereiter & Scardamalia, 1987; Englert et al., 1988; Flower & Hayes, 1980; Graham, 2006; Graham et al., 1993; McCutchen, 1995).

However, our study also shows that some of these adolescent struggling writers put quite some effort in regulating their writing processes. A main finding of our study is that struggling writers who spend much energy in (especially) planning and formulating succeeded in writing better texts than their low-achieving peers. Although we cannot conclude that this relation is causal, it certainly suggests that the amount of self-regulatory activity spend by these students is not in vain. This indicates that these

students have some sense of cognitive self-regulation and confidence in their abilities for improving their text by using that regulation.

A closer look at the self-regulatory activities of the best, average and lowest achieving writers revealed details of the sequential patterns of cognitive self-regulation of our struggling writers. It became clear that the group lowest on text quality spent little attention on planning before starting to write, in comparison to the average and highest group. Even more interesting was our finding that the higher achieving writers interrupted transcription episodes more often for self-regulatory activities during writing than the two other groups. This indicates that these students have a more reflective attitude towards transcription and formulation processes, than would be expected from the viewpoint of the knowledge telling model. Apparently, it seems to make a difference whether these struggling writers pay attention to what they have written and to what they intend to write next on a local level. Although we are cautious not to imply causation, it seems to be plausible that differences in the quality of texts produced might be explained by patterns of cognitive self-regulation.

In a second language writing context, Hayes and Chenoweth (2007) defined the concept of 'language bursts'. Such bursts are defined by uninterrupted writing of stretches of language and are seen as indicative of writing fluency in the L2. Although the concept of language burst might seem to be similar with our notion of uninterrupted transcription, the way Hayes and Chenoweth operationalized these bursts differs substantially from the operationalization of blocks of uninterrupted transcription in our study. Given our think aloud instructions, our struggling writers were encouraged to tell what they were thinking while writing. A block of uninterrupted transcription in our study indicates that there was no cognitive self-regulation for the writer to relate to (or at least that he/she wanted to relate). In many cases, these blocks concerned the complete text (see Figure 5.2) in contrast to 'language bursts' that are defined by production (typing) pauses of a certain duration and are therefore normally much shorter. The association of longer transcription episodes with poorer writing in our study can thus not be compared with the finding of Hayes and Chenoweth (2007) that longer bursts are associated with higher L2 writing proficiency (fluency).

Not surprisingly, the repertoire of self-regulative activities for most adolescent struggling writers in our study appeared quite limited. Although struggling writers put some effort in self-regulating activities directed to planning (mainly for content generation), more advanced planning activities and self-regulation directed to formulating, monitoring, evaluating, and especially revising were rather rare. Although the specific writing task in this study did not contain concrete rewards for the students to produce a well written piece, we do not believe this influenced our results in a

significant way. First, the students in general appeared quite motivated in performing the writing task in front of an encouraging and motivating researcher. The students also knew the researcher well, because they were involved in a broader (longitudinal) study in which she had collected data from them for more than a year. Therefore, students felt quite at ease and were not shy in expressing their thoughts during writing. In addition, few self-regulatory activities directed to monitoring, revising and evaluating are also reported in studies of the writing processes of more proficient writers of the same age (Bereiter & Scardamalia, 1987; Breetvelt, 1991; McCutchen, 1995; Van Gelderen, 1997). Therefore, we may assume that the low frequency of indications of monitoring, revising and evaluating is a valid characteristic of these students' writing. The fact that no relationship was found between these self-regulatory activities and text quality suggests that these struggling writers lack the expertise and/or confidence to adopt efficient strategies for monitoring, revising and evaluating.

Van den Bergh and Rijlaarsdam (1999) questioned whether frequency of self-regulatory activities relates to text quality. According to these authors, the distribution of self-regulatory activities over the writing process is far more important in explaining differences in text quality. In contrast, we found significant correlations between frequencies of self-regulation activities and text quality. As a preliminary explanation we propose that the discrepancy has to do with the distribution of writing proficiency in the samples studied. Whereas Van den Bergh and Rijlaarsdam (1999) studied more proficient writers in Dutch secondary schools, our sample consisted of adolescent struggling writers at the lowest end of the proficiency scale. Because we found quite large differences in the amount of self-regulatory activities between struggling writers, it is plausible that the ones that regulate more also produce texts of better quality. The difference between students of higher writing proficiency might be more related to the timing of their self-regulatory activities than to their sheer quantity.

Instruction directed at self-regulation of writing can enhance writing skills (De La Paz, 1999; Englert, 1992; Graham & Perin, 2007; Zimmerman & Risemberg, 1997). Therefore, in relation to the findings of this study, emphasis on cognitive self-regulatory skills in writing instruction for adolescent struggling writers seems warranted. A focus on self-regulation directed at formulating seems especially promising, given the results discussed above. But also instruction in self-regulation directed at global planning, monitoring, revising and evaluating seems valuable for this group of writers. Research evidence is accumulating that there are instructional practices that do meet these kind of needs for support of adolescent struggling writers, for example by teachers modeling cognitive self-regulation during writing and the type of training advocated by Graham (2006).

Finally, we have to point to an important limitation of this study. The writing processes were analyzed using one specific writing task assignment only. One characteristic of this assignment seems of particular importance. The writing assignment elicited brief compositions (about 50 words) and production times (about 5 minutes). Although this task is considered appropriate for our students, future research should establish whether the results are different for other types of assignments that elicit longer texts and longer production times. Nevertheless, we believe that the in-depth exploration of the frequencies and patterns of self-regulatory activities used by adolescent struggling writers has added valuable information to the body of research into writing processes and important recommendations for writing instruction aimed at this particular group of writers.

Summary and discussion

This thesis aimed to deepen our insights in the impact of motivational and educational factors on literacy proficiency and development of low-achieving adolescents. The construct of engagement was used to explore factors that can explain literacy proficiency and development of low-achievers. Three studies into low-achieving students' engagement in reading and writing tasks in language arts and social studies curricula were conducted involving 63 students who were followed for three academic years (grades 7 to 9). In the first two studies (Part I) the role of engagement was explored whereas in the third study (Part II) the role of literacy instruction was investigated. In addition, two in-depth studies were conducted into self-regulated reading and writing of 51 8th grade low-achieving adolescents, using think aloud methods with video observations (Part III).

In this chapter, the findings of the five empirical studies will be reviewed and discussed. We start with summarizing the main findings of the studies, followed by a discussion of some general conclusions concerning the impact of engagement on literacy proficiency and development of low-achieving adolescents. Next, suggestions for future research into the role of engagement in fostering literacy development of low-achieving students will be discussed. The chapter ends with some implications for educational practice.

Summary of main findings

Although a great deal of research has focused on factors that enhance reading and writing proficiency, few studies have focused on the group of low-achieving adolescents; adolescents who are not disabled but have many difficulties with text comprehension and text composing. As a consequence, there is little understanding of the educational (e.g. instruction, curriculum) and psychological (e.g. knowledge, engagement) factors that can improve literacy proficiency and development of these low-achieving adolescents. One concept that recently has received increased attention as an important factor is engagement.

In the first two studies (Part I), we examined the impact of low-achieving adolescents' engagement in reading and writing in school contexts in relation to reading and writing proficiency and development of a group of 63 students. Based on current definitions, we included affective, cognitive and behavioral aspects to measure the multidimensional construct of student engagement. In the course of grades 7 to 9, students' self-efficacy beliefs, intrinsic values, utility values, reported effort and reported self-regulation were investigated. In addition, the time students were on-task

in literacy activities in language arts and social studies lessons was observed. Furthermore, students' reading comprehension and writing proficiency was measured in each grade. Results showed that low-achieving adolescents participating in this study showed more signs of engagement in reading and writing than one would expect. Although the students are low-achieving, they expressed quite some confidence in their literacy abilities. The students also saw literacy as quite useful. Reading and writing seemed important to them for getting a job and for being successful in- and outside school. In regard to the intrinsic value of reading and writing, they had neither positive nor negative views. In regard to their efforts spent in reading and writing, students reported quite a moderate stance (neither much nor little). In response to questions about their use of strategies, students indicated to use them quite regularly. The positive self-beliefs concurred with quite positive time-on-task behavior of the students in the lessons for language arts and social studies. On average, they were on task for two thirds of the time that activities were literacy related. In general, our data show that, although students participating in this study do not read and write well, that does not mean that they have low self-efficacy beliefs, do not like reading or writing at all, do not see the value of these activities or are not willing to put mental effort in reading and writing and are not engaged in literacy activities at school.

Furthermore, results showed that intrinsic value and behavioral engagement in social studies explained differences both in reading comprehension and in writing proficiency among our group of low-achieving adolescents, whereas self-efficacy beliefs, utility value, reported effort, reported self-regulation and behavioral engagement in language arts did not explain either reading or writing proficiency. More importantly, it appeared that although the adolescents in our study are low-achieving; they improved significantly in reading comprehension proficiency as in writing proficiency from grades 7 to 9. However, not all low-achieving adolescents progressed to the same degree. Although in the literature engagement is regarded as an important predictor of literacy proficiency, none of the affective, cognitive and behavioral engagement aspects investigated could explain differences in reading and writing development among our low-achieving adolescents.

The first two studies (Part I) showed that the extent to which our low-achieving adolescents improved in literacy proficiency could not be explained by their observed engagement in reading and writing activities in language arts and social studies lessons. As engagement is considered to be responsive to variation in learning contexts, it is necessary that special attention is given to the different types of instructional activities within these subject domains. Therefore, the third study (Part II) examined the nature of instruction contexts in which low-achieving adolescents are

engaged, in a more detailed manner. Using insights from prominent theories about successful language and literacy instruction, six instruction contexts were distinguished using the focus (explicit skills instruction or content-oriented instruction) and setting of literacy activities (whole-class, group or individual seat work). The behavioral engagement (time-on-task) of our group of 63 low achieving students in these specific literacy activities was observed from grades 7 to 9 and was related to their development in reading and writing proficiency. The same measures of students' reading comprehension and writing proficiency were used as in the first two studies.

Results showed that literacy instruction was dominated by individual work consisting of explicit skills instruction in the language arts and content-oriented activities in social studies. More importantly however, it appeared that development in literacy proficiency of low-achieving adolescents was hardly associated with engagement in any of the specific literacy practices in the observed period. The degrees of engagement in neither of them contributed to explaining reading development among low-achieving adolescents. For writing proficiency, however, small amounts in students' growth could be explained, especially between grades 8 and 9. Engagement in whole-class explicit skills instruction in language arts lessons explained writing development to a small degree. Students who were more frequently engaged in this type of instruction showed larger improvements in writing proficiency. Explorations of the more specific activities underlying this relation showed that particularly engagement in explicit instruction directed at metacognitive knowledge was associated with students' improvement in writing proficiency.

Although studies have shown that good readers and writers employ a diversity of self-regulatory activities in contrast to poor readers and writers, not much is known yet from in-depth studies of how low achieving adolescent readers actually approach reading and writing tasks at school. There is little knowledge of their approaches of such tasks and the self-regulative activities they use. In the first two studies, *reported* self-regulation of 63 low achieving students was measured as an indicator of cognitive engagement. Results however showed that reported self-regulation could explain differences in neither reading development nor writing development. In the fourth study (Part III), we therefore examined the relationships between types and sequences of self-regulated reading activities in a concrete reading assignment with the quality of performance on that task of 51 low-achieving readers in grade 8. The study used thinking aloud combined with video observations to analyze the students' approach of a content area reading task in the stages of orientation, text reading and answering questions. The results showed clear relations between types and sequences of self-regulated reading activities and task achievement. The low-achieving readers showing a straightforward linear approach to the task (orientation, reading the whole text and

finally answering questions) yielded more success than students who adopted a more scattered approach, jumping from one stage to another in a less predictable way. In addition, readers demonstrating more activities directed at connections between text contents and prior knowledge during reading showed better task achievement.

In the fifth study (Part III), relations between types and sequences of self-regulatory activities and the quality of texts produced by the same 51 adolescent low-achievers was examined. A think-aloud study with video observations was conducted involving analyses of self-regulatory activities concerning planning, formulating, monitoring, revising, and evaluating. The results showed that the writing processes of low-achieving adolescents have much in common with "knowledge telling". This process involves the retrieval of contents relevant to the topic from long-term memory and writing it down while paying little attention to rhetorical goals, constraints imposed by the assignment, needs of intended readers and text organization. Nevertheless, interesting differences among the individual sequences were found. It appeared that students who put more effort in planning and formulation succeeded in writing better texts than their peers. Furthermore, self-regulation of these better-achieving writers was quite varied in comparison to the others. The findings suggest that within this group of low-achievers, types and sequences of self-regulation did make a difference for the quality of texts produced.

General conclusions and discussion

Literacy proficiency: the role of students' engagement

This thesis aims to deepen our insights into the roles of affective, behavioral and cognitive aspects of low-achieving adolescents' engagement in the classroom for improving their literacy proficiency. The findings of the first two studies showed that of the different aspects of student engagement studied, one aspect of affective engagement, intrinsic value, was positively related to differences in literacy proficiency of low-achieving adolescents. The more pleasure the low-achieving students experienced in reading and writing, according to their own reports, the higher were their scores for reading and writing proficiency. This finding supports the idea that what you like are the activities you also achieve in well and vice versa (Baker & Wigfield, 1999; Eccles, 2005; Guthrie & Wigfield, 2000).

Furthermore, it appeared that the level of engagement in literacy activities in social studies lessons was positively related to students' literacy proficiency, while being on-task or off-task in language arts lessons was not. The in-depth investigation of the instructional practices showed that the opportunities teachers offer in language arts and social studies differ. Literacy instruction in language arts was characterized by

a focus on explicit skills instruction, whereas literacy practices in social studies were predominantly content-oriented and instrumental for learning content knowledge. These findings are in accordance with claims that the role of students' engagement is sensitive to variation in learning contexts (Appleton et al., 2008; Finn & Rock, 1997; Fredricks et al., 2004; Furlong et al., 2003; Guthrie et al., 2012). It seems likely that the focus of activities is influencing the different associations between engagement and literacy proficiency. Literacy practices that are instrumental for obtaining knowledge about contents in the social studies may be more challenging and engaging for better readers and writers than for the poorer readers and writers in our classrooms, resulting in more time on-task in such practices of the better achievers. However, the positive association between engagement in social studies and literacy proficiency does not directly point to instrumental literacy practices causing *progression* in literacy proficiency. As explained above the direction of the relationship might be the reverse: more proficiency resulting in more engagement in instrumental literacy practices in social studies lessons. This explanation points to the premises of content-oriented language learning as proposed by the approaches of Content-Based Language Learning (Brinton et al., 1989; Bygate et al., 2001) and Concept-Oriented Reading Instruction (Guthrie & Wigfield, 2000; Guthrie et al., 2004). These approaches emphasize the importance of instrumental reading and writing experience for achieving higher levels of engagement.

Next to the positive relation found between intrinsic value and students' literacy proficiency, the findings showed that other aspects of affective engagement, including utility values and self-efficacy, were not related to differences in literacy proficiency of our low-achieving adolescents. Although the low-achieving students in our sample on average endorse the idea that reading and writing is important for success at school and in the workplace and have much confidence in their reading and writing abilities, affective engagement in reading and writing was not related to differences in reading and writing proficiency. These findings do not concur with the importance attributed to self-efficacy beliefs (Bandura, 1997; Chapman & Tunmer, 1995) and task values (Eccles, 2005) in the literature. The findings are neither in line with results from previous research in which students' self-efficacy beliefs and subjective task values of reading have been shown to be related to their performance (Anmarkrud & Bråten, 2009; Baker & Wigfield, 1999; Boscolo, 2012; Chapman et al., 2000; Graham et al., 2007; Greene et al., 2004; Guthrie et al., 1999; Guthrie et al., 2007; Katzir et al., 2009; Klassen, 2002; Lipstein & Renninger, 2007; Pajares, 2003; Pajares & Valiante, 2006; Wang & Guthrie, 2004). Most of these studies are directed at younger students and at students with broad ranges of proficiency. Our findings suggest that results from these studies may not hold true for the particular situation of low-achieving adolescents'

literacy development (Baker & Wigfield, 1999; Logan et al., 2011). It may be that low-achieving adolescents, who are motivated by the utility of literacy, do not consider their present level of literacy as something to work on. In combination with their quite high levels of self-efficacy it seems likely that they do not have much reason to worry whether they will be able to profit from their literacy abilities, now or in the future. In respect to our low-achieving students' high self-efficacy beliefs, it is appropriate to point at the Dutch tracked school system, in which all low-achieving students are brought together in classes for vocational education from grade 7 on. As a result, these students are surrounded by classmates with similar low literacy abilities. Moreover, literacy tasks are adapted to their abilities and their teachers intend to increase students' confidence. In such a learning environment, low-achieving adolescents may find themselves quite competent in reading despite the fact that they are poor readers compared with students with higher academic skills. Consequently, students' self-efficacy beliefs may not match their actual performance. At high levels of self-efficacy, students may feel overconfident resulting in a lack of effort needed for learning (Salomon, 1984; Sawyer, Graham & Harris, 1992). To conclude, our findings raise questions about the role of self-efficacy beliefs and utility value concerning literacy for the group of low-achieving adolescents targeted in this study. In particular, there are some indications that these aspects of affective engagement relate differently to literacy proficiency than expected from heterogeneous groups of students studied in the literature.

Finally, the relation between cognitive engagement and literacy proficiency of low-achievers was examined. The results showed that both reported effort and reported self-regulation were not significantly related with literacy proficiency (both reading and writing). Given the strong body of research demonstrating positive links between self-regulation and literacy achievement (Bereiter & Scardamalia, 1987; Duke & Pearson, 2002; Graham, 2006a; Kucan & Palincsar, 2011; McCutchen, 1995; Oakhill & Cain, 2007; Pearson, Roehler, Dole & Duffy, 1992; Trabasso & Bouchard, 2002) these findings were unexpected. Our findings may be explained by the way self-regulation was measured in the first two studies; we used self-reports and asked students to reflect on their reading and writing behavior. As discussed in the literature, self-reports may not always be interpreted as reliable information about actual behavior because students have limited awareness of many aspects of their behavior (Cromley & Azevedo, 2006; Veenman et al., 2006). It may be that the low-achieving students participating in this study are not very well aware of the self-regulative activities and strategies they use while reading and writing. Moreover, the self-reports concerned quite general indications of students' self-regulation of reading and writing. As self-regulation in many cases can be task and situation specific, such general questions

probably do not reflect students' actual self-regulation in reading and writing tasks at school. Results from the two think-aloud studies (part III) in which actual self-regulatory behavior of our group of low-achieving adolescents in specific reading and writing tasks was analyzed support this interpretation. These analyses showed that specific types and sequences of self-regulation were significantly related to successful reading and writing task performance. Low-achieving adolescents' more engaged in activities directed at making connections between text contents and their own prior knowledge or in critical review of their own writing during formulation episodes, obtained higher scores on the reading task and wrote texts of significantly better quality. In addition, in both the reading and the writing tasks, there were clear indications that students adopting a straightforward and thoughtful approach of these tasks were more successful than students with a more unpredictable approach, suggesting a lack of task planning. For these reasons, we can conclude that for our group of low-achieving students there is a clear association between the types and sequences of self-regulatory activities adopted and the quality of achievement in reading and writing tasks. Researchers should pay special attention to the instruments and methods they use to analyze self-regulative activities and strategies (low-achieving) students use when reading and writing.

Literacy development and student engagement: a complex relationship

This thesis also investigated whether low-achieving adolescents progress in literacy proficiency from grades 7 to 9 and to what degree literacy development can be explained by the abovementioned aspects of affective, cognitive and behavioral engagement in literacy. It appeared that although the adolescents in our study are low-achieving, they improved significantly in literacy proficiency from grades 7 to 9. On average there were no signals of stagnation or declination. This is an important finding, because it shows that students improve in reading and writing proficiency in the first grades of prevocational secondary education, despite that they are low-achieving. These findings are encouraging in light of the importance of literacy proficiency for youngsters' academic, professional and societal careers. Together with the insights on students' level of engagement, they help to nuance the stereotype of low-achieving adolescents as poorly engaged readers and writers whose literacy development has come to a halt. These conclusions are an important addition to insights yielded by research directed at heterogeneous student samples in which the achievements of low-achieving students appear in a quite negative perspective. In addition, our results counter a quite general belief about low-achieving students, often referred to as the "Matthew Effect" (the rich get richer and the poor get poorer). As we have found,

quite the reverse is the matter: our low-achieving adolescents make substantial progress in reading and writing proficiency from grades 7 to 9.

Furthermore, the findings showed that differences in literacy development among low-achieving adolescents could not be explained by any of the affective, cognitive or behavioral aspects of engagement investigated. In other words, more engaged low-achieving adolescents do not yield more progression in literacy proficiency in the first three grades of secondary education than their less engaged peers. These findings are similar to some results from earlier longitudinal research into the role of engagement for reading development. Several studies did not find effects of self-efficacy on reading development as well (Aunola et al., 2002; Chapman & Tunmer, 1997; Guthrie et al., 2007; Retelsdorf et al., 2011). In contrast however, studies into the impact of reading enjoyment on reading development in elementary schools showed that intrinsic value is positively related with students' growth in reading (Becker et al., 2010; Taboada et al., 2009; Guthrie et al., 2007; Retelsdorf et al., 2011). The predictive power of aspects of engagement for students' literacy development in elementary schools is also indicated in studies of Baker and Wigfield (1999) and Logan et al. (2011), but may not hold true for low-achieving students in secondary vocational schools.

Our findings suggest that engagement is a predictor of low-achieving adolescents' level of literacy proficiency while their literacy development is not predicted by their affective, cognitive or behavioral engagement. It seems as if the influence of these aspects of engagement at younger ages, that has been demonstrated in studies mentioned above, has somehow 'crystallized' by the time our low-achieving students enter the 7th grade of (prevocational) secondary education. This is a possible explanation for our failure to find effects of engagement on these students' continued literacy growth. This of course, raises questions about why such engagement ceases to be of significance for literacy development. Our findings showed that literacy proficiency in former grades (7th and 8th) turned out to be strong predictors of students' literacy proficiency in subsequent grades (8th and 9th respectively), but still there was sufficient room (at least 50% of variance) for other factors to be of influence. This calls into question whether the schools' contexts of literacy learning contain sufficient challenges for our low-achieving adolescents to be of influence. If students are not sufficiently challenged to put effort in their learning to comprehend texts and to produce comprehensible texts, it may not matter how engaged they are in these activities at school for their progress in reading and writing. In addition, other challenges may take over in the period of adolescence, competing with school challenges, such as important peer group activities outside school, leisure time hobbies, and awaking sexual interests. Given these 'distractions' for school learning,

probably the school contexts for literacy learning have to be much more pressing, meaningful and relevant for low-achieving adolescents than they were used to in elementary schools. For that reason we will go into the different roles engagement in school literacy can play in fostering literacy development of low-achieving adolescents, in the following sections.

The role of literacy instruction

In order to understand the impact of low achieving students' behavioral engagement in two subject domains (language arts and social studies) on their literacy development, several instructional features recommended for effective literacy instruction were identified. The insights point to features such as an emphasis on cross-disciplinary coordination between language arts and content area lessons, interactive learning opportunities, content-oriented instruction of reading and writing and explicit skills instruction. In line with other studies (Creese, 2005; Elbers, 2011; Raaphorst, 2007), the results of this thesis showed that the literacy practices for low-achieving adolescents do not show much of the abovementioned features. In addition, it was found that the degree of students' observed engagement in all literacy practices in language arts and social studies lessons did not contribute to explaining reading development among low-achieving adolescents. For writing, however, a small part of students' growth in proficiency could be explained (in particular by whole class metacognitive skills instruction in language arts). Overall, remarkably little variance in literacy development could be explained by observed engagement in literacy instruction across the curriculum. This does not imply, however, that engagement in literacy instruction cannot contribute to low-achieving adolescents' literacy development in general. In fact, it is believed that engagement can play a distinct role, both for reading and for writing development of low-achieving adolescents (Edmonds et al., 2009; Graham & Harris, 2012; Guthrie et al., 2012; Pressley et al., 2009). For engagement to play such a distinct role, a balanced mix of cross-disciplinary, interactive, content-oriented and explicit literacy instruction seems demanded. We therefore call for more research to test these assumptions. Special attention should be given to the impact of low-achieving students' behavioral engagement in various contexts in which literacy activities are enacted at school, including features that are recommended for effective literacy instruction.

Limited metacognitive knowledge and skills

Results of the two in-depth studies into self-regulated reading and writing of low-achieving adolescents showed that, although all students did put some effort in self-regulating their reading and writing, their repertoire of self-regulatory strategies was

quite limited. Especially, self-regulatory activities that enable deeper processing such as questioning, summarizing, and making inferences (for reading) and monitoring, formulating, revising and evaluating (for writing) were rarely observed. Most low-achieving adolescents lack the expertise to apply advanced self-regulatory strategies that are needed to deepen text comprehension and to enhance their proficiency in transferring ideas through written communication. A study conducted by one of our partner projects with the same sample of low-achieving adolescents (Trapman et al., 2012, and Trapman et al. submitted) showed that metacognitive knowledge about reading and writing strategies of low-achieving adolescents is quite limited. The students participating in the study had severe difficulties in indicating what is needed to succeed in text reading and writing and what can be done when task achievement breaks down. Students need this type of knowledge and expertise to get beyond the basic literacy skills often emphasized in the elementary grades, to the more elaborate literacy demands of the secondary school years (such as learning from textbooks and writing answers to essay questions). If students lack metacognitive knowledge and skills, it may hinder them in taking the next step in their literacy development. This emphasizes the important role metacognitive knowledge and skills may play in the literacy development of low-achieving adolescents, next to student engagement and literacy instruction in subject domains.

Suggestions for future research

This thesis makes a contribution to the knowledge base on literacy development and the role of engagement for enhancing literacy proficiency of low-achieving adolescents by providing in-depth insights in their literacy learning. The results and research methodology reveal a number of questions and issues that can provide suggestions for future research. In this section we discuss possible directions for future research.

The need for validation

This thesis investigated to what degree literacy proficiency and development of low-achieving adolescents can be explained by different aspects of affective, cognitive and behavioral engagement in reading and writing. By focusing on the particular situation of low-achieving adolescents, this thesis contributes to our current understanding of the role of literacy engagement. Our current understanding is primarily based upon research directed at students with broad ranges of proficiency or at students from elementary education. Together, the results of this study suggest that the role of engagement for students' literacy is different for low-achieving adolescents, compared to younger and heterogeneous groups of students, in several respects. However, the small sample size calls for caution in generalizing our conclusions to the whole group of

low-achieving adolescents. Therefore, replication of this study using larger or other samples of low-achieving adolescents is certainly needed to generalize our findings. Furthermore, future research is needed focusing on differences between low-achieving and high-achieving adolescents in secondary education. It is, for example, interesting to know to what degree students' engagement in literacy practices in vocational education (*MBO* in Dutch) or pre-university education (*VWO* in Dutch) is related to their literacy development. To explore such issues, research with multiple focused samples should be conducted. Findings from such research can provide more insight into the different roles of engagement in literacy for different groups of adolescents.

Literacy proficiency level and development: two sides of the same coin?

Our longitudinal studies have provided us with in-depth insights into the relationships between low-achieving students' engagement, their level of literacy proficiency and development. The results showed that, although some aspects of engagement were associated with *level* of literacy proficiency, differences in literacy *development* among low-achieving adolescents could not be explained by any of the affective, cognitive or behavioral aspects of engagement investigated. These findings suggest that different types of relationships may exist between students' engagement and literacy proficiency on the one hand and student engagement and literacy development on the other. In other words, correlations between proficiency and its predictors may help to understand why some students are more proficient than others, but they do not help us to predict students' progress in literacy. Although, there is some empirical evidence suggesting that better achieving students are more engaged than lower achieving students, there is no clear understanding yet of how students who yield more progression differ from students who yield less progression or stagnate, and how literacy development is related to engagement. Too often correlations between proficiency level and aspects of engagement are interpreted by scholars in terms of development, while our findings emphasize the importance of making a distinction between proficiency level and development in examining relationships between engagement and academic achievement. To bring our knowledge of adolescent literacy development another step forward, more longitudinal research is needed that explores different aspects of student engagement across grades, and relate them to students' literacy proficiency level and their literacy development separately.

Exploring the nature and dynamics of engagement

Based on contemporary definitions of engagement, three facets of the multidimensional construct of student engagement were investigated, including

affective, behavioral and cognitive engagement. Engagement is considered to be the joint functioning of motivational processes, cognitive strategies and behavioral activities. Affective engagement is what energizes students' behavior, whereas behavioral engagement indicates whether students are actually engaged. Cognitive engagement indicates the depth of students' engagement (the degree of cognitive effort invested). Although engagement is considered to be the joint functioning of motivational processes, cognitive strategies and actual participation, explorations of the joint effects of multiple facets of engagement on students' literacy development are not systematically examined in the literature. In our study, however, two-way interaction effects between the aspects of affective (intrinsic value, utility value, self-efficacy), cognitive (reported effort and reported self-regulation) and behavioral engagement (time-on task in language arts and social studies lessons) and the dependent variables (reading and writing proficiency and development) were analyzed. As none of the interaction effects appeared to be significant we did not report these analyses in the first chapters (Part I). Given our small sample size, we cannot conclude that such interaction effects on literacy proficiency or development do not exist. The results do suggest, however, that such effects in the case of low-achieving adolescents are probably not large. More research, using larger samples and diverse instruments for measuring engagement is needed to explore the size of interaction effects between multiple aspects of engagement on students' literacy proficiency and development. We recommend that more attention is paid in the measurement of engagement to the situation-specific nature of engagement, as it is considered to be quite variable across learning contexts.

Although this thesis focused on the most important aspects of engagement, not all distinguished aspects covered by the umbrella of engagement were included (Wentzel & Wigfield, 2009). We therefore call for more research to unravel the contribution of other aspects of engagement, such as students' perceived autonomy, goal orientations, extrinsic motivation, and social support (Deci & Ryan, 1985; Furrer & Skinner, 2003; Van Steenkiste, Lens & Deci, 2006; Pintrich, 2000; Wigfield, Eccles, Schiefele, Roeser & Davis-Kean, 2006). As most research has focused on affirming motivations, future research on the literacy development of low-achievers should also provide more insights in undermining motivations, such as task avoidance, lack of control and task difficulty. Studies found, for example, that when students believe that they are externally controlled in reading (feeling coerced), they are likely to find reading aversive and report high levels of work avoidance for reading and other school activities (Guthrie et al., 2007; Assor, Kaplan, Kanat-Mayon & Roth, 2005).

Finally, the relationship between engagement and competence are claimed to be reciprocal (Morgan & Fuchs, 2007). Although we believe that our longitudinal studies

have made an important contribution to our understanding of low-achieving adolescents' literacy development, the design and analyses used in our study do not make it highly unlikely that the effects found on literacy proficiency can be interpreted as unidirectional causal. Reciprocity is certainly the more plausible interpretation in our case. Future studies should address this issue by using more (quasi) experimental designs in which engagement is optimized. By doing this, these studies may help to increase our understanding of the dynamic nature of student engagement and its consequences.

Teacher-student interactions

In exploring the role of behavioral engagement for literacy development of low-achievers, we focused on features of effective literacy instruction in two subject domains. This thesis did not examine the role of overall classroom quality and interpersonal relationships between teachers and students, which are also likely to influence students' engagement and the impact of instruction offered (Appleton et al., 2008; Brekelmans, Sleegers & Fraser, 2000; Den Brok, 2001; Guthrie & Wigfield, 2000; Fredricks et al., 2004). A significant body of research has shown that the quality of teacher-student relationships affects both students' attitudes towards subjects taught and their achievement (Brekelmans, 1989; Den Brok, Levy, Brekelmans & Levy, 2005). Moreover, a recent research synthesis on the effects of interpersonal relationships between teachers and student has shown that for low-achieving students a good relationship with their teachers is even more crucial for their engagement and achievement than for high-achieving students (Roorda, Koomen, Spilt, & Oort, 2011). More research is therefore needed to explore the impact of interpersonal relationships on engagement and literacy development of students and how interpersonal relationships are related to engagement in literacy instruction across the curriculum. Findings from this research can add to our insights in educational factors explaining literacy development of low-achieving adolescents.

Implications for educational practice

For literacy engagement to be effective in daily school practice it is necessary that learning environments fit the specific needs of low-achieving adolescents and challenge them to spend effort in their reading and writing activities in school. Our study of students' engagement in language arts and social studies lessons indicated that such challenges may not be sufficient in the current learning situations. Therefore, we suggest aiming at creating more realistic self-efficacy beliefs, raising students' intrinsic values for reading and writing and expanding their repertoire of self-regulatory knowledge and skills for reading and writing. Although students' showed

progression in literacy proficiency through the grades, our results may indicate that by confronting them with more meaningful and relevant occasions for reading and writing low-achieving students have potential for much more gains in literacy.

Our exploration of the instructional practices using features of effective literacy development provides a list of points for improvement that seem promising. In a nutshell, the above explanations for not finding significant associations can serve as a first agenda. More attention to cross-disciplinary collaboration between language arts and content area teaching and more use of, interactive, content-oriented and explicit (but not isolated) literacy instruction, but also more challenging and relevant literacy tasks in the classrooms (for example by embedding such tasks in larger projects) are the most important recommendations that come across. Offering this type of literacy instruction, demands for a more flexible and creative use of existing textbooks. The key to success is dependent of how well curricula fit to the specific needs and attributes of students, and of the choices teachers make collectively within and across subject domains.

First, provide challenging literacy practices in the content areas to teach about reading and writing. Students should be supported in executing these practices by paying explicit attention to academic language and discipline-related idiom, and discuss text characteristics and self-regulatory strategies when they need to read and write in challenging tasks (Edmonds et al., 2009; Graham & Harris, 2012; Kintsch & Kintsch, 2005; Langer, 2001; Pressley et al., 2009; Van Gelderen, 1994; Wong et al., 1996). As content area teachers are no language teachers, this instruction should be coordinated with the language arts teachers, literacy coaches, and other subject-area teachers. Tools as graphic organizers, prompted outlines, structured reviews, guided discussions and other instructional tactics that help students understand and remember content teaching, can be used to support cross-disciplinary literacy development (Biancarosa & Snow, 2006).

Second, connect literacy instruction in language arts lessons to students' interests and activities (Brinton et al., 1989; Bygate et al., 2001; Guthrie et al., 2004; Hager & Meestringa, 2004; Langer, 2001; Pressley, 2006). For example, exercise writing application letters when students are really in search of traineeships or holiday jobs. Or give students texts to read and write about related to topics that they perceive as interesting and relevant at the time they are working on these tasks in the classroom. These activities provide a meaningful context to teach about self-regulatory strategies, vocabulary and to pay attention to spelling and grammar. In addition to engaging literacy tasks, opportunities for liberal and expressive literacy fostering enjoyment of reading and writing should be given as well (Gersten & Baker, 1999; Raijmakers & Remkes, 2004; Van Veen, 1996; Dumoulin, 1998). To make these practices a success, it

is important that tasks have a playful and personal character. Most textbooks contain potentially meaningful and creative literacy tasks, but they only become actually meaningful when they are executed at the right moment in the students' life. A well-considered and timed language arts curriculum is decisive for reaching high levels of engagement.

Third, there is a world to win by expanding the repertoire of self-regulatory knowledge and skills. For reading, a focus on self-regulation directed at text comprehension such as paraphrasing, making inferences, comprehension monitoring and summarizing seems worthwhile. Also instruction directed at task orientation and planning and orderly task approach seems to be promising. Low-achieving students even seem ready for instruction in a more advanced task approach in which they alternate text reading with answering questions. Since tasks at school and outside school become increasingly long and complex, students should also become familiarized with activities such as scanning, determining importance and coordination of multiple text sources. For writing, especially attention for formulating and monitoring of written production seems recommendable. Also instruction directed at advanced ways of planning, revising and evaluating seems valuable for this group of students. Research evidence is accumulating that modeling self-regulation during reading and writing is an effective way of teaching self-regulatory knowledge and skills (Alfassi, 2004; Graham, 2006; Palincsar & Brown, 1984; Palincsar & Herrenkohl, 2002). In this approach, teachers begin by introducing a strategy to the students explaining their purpose and use. A strategy is then taught through a series of dialogues between teacher and students. The teacher is the leader of these discussions and models strategy use generally in the form of thinking aloud. As soon as students become more knowledgeable, they can think aloud themselves and learn from observing each others' reading and writing behavior, which is referred to as reciprocal learning (Palincsar & Brown, 1984).

Finally, create sufficient opportunities for interaction between students and between students and teachers, ensuring expert behavior, stimulation, and control. (Guthrie et al., 2007; Johnson & Johnson, 2009; Palincsar & Herrenkohl, 2002; Vaughn et al., 2001; Klinger et al., 2004). Despite the fact that textbooks normally foster individual seat work, they are also suitable for use in small groups. It is important that higher achieving students work with lower achieving students. Teachers should provide support and feedback concerning students' learning processes rather than focus only on evaluation of their outcomes, and stimulate that students observe, discuss and check each others' work (Rijlaarsdam et al., 2008; Yarrow & Topping, 2001; Hansen & Liu, 2005, Hoogeveen, 2012).

Summary and discussion

Although this list of recommendations may not be completely new, the findings of this thesis suggest that it continues deserving our attention to improve literacy proficiency of many low-achieving adolescents. Hopefully, the combined efforts of researchers and teachers will result in this type of engaging learning situations for low-achieving adolescents at schools and bridge the gap between theory and practice.

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Appendices

Appendix A – Textbook analyses

Procedure

At the end of the three-year data collection (7-9), the textbooks Dutch Language and social studies used by the participating students were inspected. For language arts the origin and nature of tasks, and the opportunities for interactive learning were explored. In addition, the teacher manual was inspected on indications for a content-based approach. For social studies, the support in regard to vocabulary and the self-regulatory aspects of reading and writing were checked next to the opportunities provided for interactive learning.

Language arts

Across grades 7 to 9, 5 different textbooks for language arts were used: 1) *Nieuw Nederlands* (36% of the students), 2) *Taallijnen* (28%), 3) *Taaldomein* (22%), 4) *Op Nieuw Niveau* (12%), and 5) *Nederlands met Pit* (2%).

Focus on content. Examination of the text sources revealed that the different textbooks were rather similar in terms of the resources used. All textbooks contained ‘authentic’ texts that are derived from the context of school (e.g. instructional texts, literary stories), social contexts (e.g. e-mails, postal cards, travel guides) and future professional contexts of adolescents (e.g. recipes, prescriptions, manuals). The texts in textbooks 1, 2 and 5 were for 100% derived from such authentic sources, the texts in textbook 4 for 95% and the texts in textbook 3 for 70%. In addition, the chapters were organized around themes appealing to the interests of adolescents, (e.g. friendship, idols and animals), around different text genres (e.g. diagrams and maps, text book texts and forms) or communication goals (e.g. informing, instructing and persuading). In such ways, the contents of the textbooks tend to link to the world of youngsters at present and in the future.

Isolated skills instruction. In all textbooks, except textbook 5, the different aspects of language (reading, writing, spelling, grammar, vocabulary and literature) were discussed in isolated paragraphs in which the assignments are clearly focused at the explanation and exercise of theory while few assignments involved integration of different types of linguistic knowledge and skills. Only in so-called ‘total- or integration-assignments’ a meaningful context lies at the basis of the activities for which the use of different language skills is necessary (e.g. ‘design a leaflet with tips and tricks for first-formers’ or ‘write a neighborhood news paper with news reports

and gossip'). These integration assignments are however presented as an optional instead of fixed part of the curriculum. Only textbook 5 had an explicit content-based approach. In this textbook, the texts and assignments are completely derived from the subject domain of Care and Welfare, which is one of the curricular specialties students in the prevocational track can enroll in grade 9. In every chapter, the different language aspects are discussed by means of 3 cases that are directly derived from real-life professional situations. In these cases, students carry out different types of activities for which all sorts of literacy knowledge and skills are required. As such, reading and writing is more functional and meaningful in textbook 5 compared to the other textbooks. This textbook was however only used in grade 9 and only by 2 percent of the students in our sample.

Group or individual work setting. In the manuals, it was stated that learning materials were designed to stimulate students to work autonomously and to take responsibility for their own learning process. In line with this philosophy, students were instructed to execute assignments individually. Only in the 'total- or integration assignments', students were stimulated to work in groups and discuss each other's work. The major role of the teachers is planning and monitoring students' progression. The teachers are assigned a coaching and supportive role.

Social studies

In total nine textbooks were used over the grades. In grade 7 and 8, the same textbooks, classes used the same textbooks, whereas in grade 9 all classes switched to other textbooks because the focus shifted from historical, geographical and economic contents toward more societal topics like mass media, the job market, politics and the multicultural society. In grade 7 and 8 six textbooks were used, namely: 1) *Plein M* (49% of the students), 2) *Mundo* (21%), 3) *Sporen & Terra* (11%), 4) *Expeditie M&M* (10%), and 5) *Mega* (9%). In grade 9, five other textbooks were used that is to say: 1) *Thema's Maatschappijleer* (39%), 2) *Team Maatschappijleer* (35%), 3) *Maatschappijleer met Pit* (6%) 4) *Actua* (10%), and 5) *Blikopener* (5%).

Language support. It was found that although the students had different textbooks for social studies, they were rather similar in regard to the support the textbooks provided for vocabulary and self-regulatory aspects of reading and writing. All textbooks contained so-called jargon glossaries explaining important and difficult subject-specific concepts. With respect to self-regulative aspects, the textbooks hardly offered any support. If social studies teachers wanted to provide support for these aspects, they needed to rely on their own knowledge or on the support of their colleagues. The findings do not imply, however, that publishers have not considered the language obstacles students face. Instead of providing support, publishers

explained that language obstacles were removed by reducing the amount of reading and writing as much as possible. This resulted in the textbooks containing brief texts and very limited writing assignments (such as fill in the blanks).

Group or individual work setting. Social studies textbooks emphasized the autonomy of students' working on assignments. Teachers were attributed a supportive role. Most assignments were intended for individual work. Only in some cases, students were stimulated to discuss work with their classmates.

Appendix B – Teacher interviews

Procedure

After performing both classroom observations each year, the language arts and social studies teachers of the participating students were interviewed, using the interview guideline. The interviews were conducted individually during the school day and lasted 50 minutes at most. The answers of the teachers were transcribed and labeled. The most important questions and, answers from the teacher interview are reported in Table B.1.

Results

Table B1. Labeling of answers of language arts and social studies teachers of the participating students in regard to responsibility, coordination and collaboration for the schools' language policy in percentages.

	Language arts teachers			Social studies teachers		
	7 (N=9)	8 (N=10)	9 (N=20 ^a)	7 (N=9)	8 (N=10)	9 (N=15 ^a)
Which subjects do you think are responsible for literacy education?						
a) Language arts is responsible.	22.2%	20%	13.3%	0%	0%	0%
b) Language arts is mainly responsible but social studies has a supportive role.	55.6%	70%	70%	77.8%	80%	86.7%
c) Language arts and social studies have a shared responsibility.	22.2%	10%	16.7%	22.2%	20%	13.3%
Do you coordinate issues concerning literacy with colleagues from your own/ other sections?						
a) No coordination with colleagues from my own or other sections.	33.3%	50%	55%	33.3%	50%	80%
b) Incidental coordination with colleagues from own section.	33.3%	10%	10%	44.4%	0%	6.7%
c) Incidental coordination with colleagues from own and other sections.	0%	10%	0%	0%	0%	6.7%

	(Table B.1 continued)			Language arts teachers			Social studies teachers		
	7 (N=9)	8 (N=10)	9 (N=20 ^a)	7 (N=9)	8 (N=10)	9 (N=15 ^a)			
d)	Regular coordination with colleagues from own section.	33.3%	30%	5%	22.2%	50%	0%		
e)	Regular coordination with colleagues from own and other sections.	0%	0%	15%	0%	0%	6.7%		
Are you involved in interdisciplinary projects in which literacy education is combined and embedded in social studies education?									
a)	No, I am not involved in such projects	22.2%	20%	15%	22.2%	20%	40%		
b)	Yes, but incidentally (dependent on efforts of individual teachers)	55.6%	50%	65%	55.6%	70%	46.7%		
c)	Yes, they are a fixed part of the curriculum	22.2%	30%	20%	22.2%	10%	13.3		

a) Due to time limitations and absence of teachers at the time of interview, 4 language arts and 3 social studies teachers in Grade 9 have not been interviewed.

Nederlandse samenvatting

Lees- en schrijfontwikkeling van vmbo-leerlingen

De rol van betrokkenheid bij lezen en schrijven op school

Achtergrond en vraagstelling

Verschillende nationale en internationale onderzoeken laten zien dat wereldwijd een groot deel van de jongeren achterstanden heeft in lees- en schrijfvaardigheid (Alliance for Excellent Education, 2006; Bohnenn e.a. 2004; Hacquebord e.a., 2004; Hofman e.a., 2009; Inspectie van het Onderwijs, 2008; Salahu-Din e.a., 2008). Veel van hen zijn onvoldoende in staat om teksten te lezen en te schrijven op een niveau dat wordt vereist op school, in de beroepspraktijk en als burger in de hedendaagse informatiemaatschappij. In Nederland stemmen vooral de onderzoeksgegevens over de lees- en schrijfvaardigheid van leerlingen in de beroepsgerichte leerwegen van het vmbo weinig optimistisch. Zo blijkt uit onderzoek van Hacquebord (2007) en de Inspectie van het Onderwijs (2008) dat een kwart van de leerlingen in de basisberoeps- en kaderberoepsgerichte leerwegen over een te beperkte leesvaardigheid beschikt om de teksten uit hun schoolboeken zelfstandig te begrijpen. Deze bevindingen roepen vragen op over de ontwikkeling van lees- en schrijfvaardigheid van jongeren, en van vmbo-leerlingen in het bijzonder. In hoeverre boeken deze leerlingen vooruitgang in de loop van het vmbo? En zo ja, welke factoren kunnen onderlinge verschillen in lees- en schrijfontwikkeling verklaren?

De laatste jaren krijgt het begrip betrokkenheid (*engagement*) veel aandacht als een belangrijke voorspeller van schoolprestaties en leren. Betrokkenheid verwijst naar de gevoelens, het denken en het gedrag van leerlingen ten aanzien van leren of een schoolse activiteit in het bijzonder, zoals lezen en schrijven. In de literatuur omvat betrokkenheid affectieve, cognitieve en gedragsmatige aspecten (Appleton e.a., 2008; Fredricks e.a., 2004; Guthrie e.a., 2012; Linnenbrink & Pintrich, 2003). Affectieve betrokkenheid heeft betrekking op de gevoelens en emotionele reacties op een taak, het vertrouwen in eigen vaardigheid en de ideeën over het belang van en de interesse in taken. Cognitieve betrokkenheid verwijst zowel naar de bereidheid om taken uit te voeren als naar het gebruik van zelfregulatieve strategieën om het lees- en schrijfproces in goede banen te leiden. Gedragsmatige betrokkenheid heeft betrekking op de daadwerkelijke participatie van leerlingen tijdens de les. Betrokkenheid wordt gezien als het resultaat van de wisselwerking tussen een leerling en zijn leeromgeving. Betrokkenheid is dan ook gevoelig voor verschillen in leeromgeving en ontvankelijk voor interventies in de schoolomgeving. Deze eigenschap maakt betrokkenheid een

interessantere voorspeller van lees- en schrijfontwikkeling dan voorspellers waaraan door het onderwijs weinig te veranderen valt, zoals: geslacht, sociaal- economische status en etno-linguïstische achtergrond.

Ondanks dat betrokkenheid een aannemelijke voorspeller lijkt van lees- en schrijfontwikkeling is er nog weinig empirische evidentië voor het bestaan van deze relatie. Dit komt vooral door een gebrek aan longitudinaal onderzoek waarin een groep leerlingen voor langere tijd intensief gevolgd wordt in hun ontwikkeling. Daarnaast richt onderzoek zich vaak slechts op enkele aspecten van betrokkenheid, terwijl het informatiever is om de verschillende aspecten die betrokkenheid omvat samen in beschouwing te nemen. Nog meer behoeft is er aan onderzoek dat zich richt op de verschillen die bestaan tussen vmbo-leerlingen onderling. Van het onderwijs wordt immers verwacht dat het rekening houdt met de verschillen die *binnen* klassen bestaan. In het middelbaar onderwijs in Nederland betekent dit dat het onderwijs rekening houdt met de verschillen die tussen jongeren van hetzelfde opleidingsniveau bestaan. Onze huidige kennis over lees- en schrijfontwikkeling is echter vooral gebaseerd op onderzoek naar jongere kinderen of naar heterogene groepen jongeren waarin vaardigheidniveaus zeer uiteenlopen, zoals in onderzoek waarin vmbo-ers met vwo-ers worden vergeleken. In dit type onderzoek komen verschillen tussen vmbo-leerlingen niet gemakkelijk aan het licht, omdat ze verbloemd worden door de grote verschillen in vaardigheid tussen vmbo-ers en vwo-ers.

Ook is het niet vanzelfsprekend dat bevindingen voor jongere kinderen van toepassing zijn op de specifieke situatie van vmbo-leerlingen. Zo is de vroege adolescentie (periode tussen 10 en 15 jaar) een turbulente periode in de ontwikkeling van een kind. Er vinden allerlei sociaal-emotionele veranderingen plaats en leerlingen maken de overstap van het basisonderwijs waarin alle niveaus met elkaar onderwijs krijgen van een beperkt aantal docenten naar het gehomogeniseerde middelbaar onderwijs met veel verschillende vakdocenten. Ook de lees- en schrijftaken die leerlingen moeten uitvoeren worden steeds complexer en vragen om andere kennis en vaardigheden dan in eerdere fasen van de lees- en schrijfontwikkeling het geval is. Al deze factoren kunnen consequenties hebben voor de betrokkenheid van vmbo-leerlingen bij lezen en schrijven op school en hun ontwikkeling in schriftelijke taalvaardigheden.

Tegen deze achtergrond is in dit proefschrift de aard en het belang van betrokkenheid bij lezen en schrijven op school voor de ontwikkeling van lees- en schrijfvaardigheid van vmbo-leerlingen onderzocht. Allereerst is het doel van dit proefschrift een bijdrage te leveren aan onze kennis over lees- en schrijfontwikkeling en de rol van betrokkenheid. Daarnaast beoogt dit proefschrift gedetailleerde

inzichten te verschaffen in de daadwerkelijke lees- en schrijfontwikkeling van vmbo-leerlingen en wat er gedaan kan worden om die te verbeteren.

Het proefschrift bestaat uit vijf hoofdstukken die zijn geclusterd in drie delen. Deel I analyseert de aard en het belang van betrokkenheid bij lezen en schrijven op school voor het niveau van lees- en schrijfvaardigheid en de ontwikkeling ervan. In hoofdstuk 1 ligt de nadruk op lezen en in hoofdstuk 2 staat schrijven centraal. In Deel II wordt uitgebreid stilgestaan bij de rol van verschillende typen lezen en schrijven in het vmbo, waarbij wordt ingezoomd op de aard en het belang van gedragsmatige betrokkenheid in een variëteit aan instructiepraktijken in lessen Nederlands en Mens & Maatschappij. Tot slot wordt in Deel III de aard en het belang van zelfregulatie (onderdeel van cognitieve betrokkenheid) verder uitgediept. In dit deel is onderzocht hoe vmbo-leerlingen een schoolse lees- en schrijftaak uitvoeren en welke consequenties hun aanpak heeft voor het behaalde succes op de taak. Hoofdstuk 4 richt zich op zelfregulatie bij lezen. In hoofdstuk 5 staat zelfregulatie bij schrijven centraal.

Belangrijkste bevindingen

Deel I – De rol van betrokkenheid bij lezen en schrijven op school

Hoofdstuk 1 en **hoofdstuk 2** beschrijven twee longitudinale studies ($N=63$) naar de aard en het belang van affectieve, cognitieve en gedragsmatige betrokkenheid bij schools lezen en schrijven voor het niveau en de ontwikkeling van lees- en schrijfvaardigheid van vmbo-leerlingen. Op basis van de literatuur naar lezen en schrijven zijn in totaal zes veel besproken indicatoren van betrokkenheid onderscheiden die samen de drie facetten van betrokkenheid representeren. De affectieve dimensie werd vertegenwoordigd door plezier in en nut van geletterde activiteiten en vertrouwen in eigen lees- en schrijfvaardigheid. De cognitieve dimensie werd vertegenwoordigd door zelfgerapporteerde inzet en gebruik van zelfregulatieve strategieën om het lees- en schrijfproces te sturen. De gedragsmatige dimensie werd gerepresenteerd door deelname aan lees- en schrijfactiviteiten tijdens de les. Aangezien betrokkenheid gevoelig is voor variatie in de leeromgeving was er speciale aandacht voor de context waarin lezen en schrijven op school plaatsvinden. In de taalvakken ligt de focus meer op het verbeteren van de schriftelijke taalvaardigheid, terwijl in de zaalklassen schriftelijke taalvaardigheid wordt ingezet om vakkenkennis te verwerven. Om die reden is gedragsmatige betrokkenheid gemeten tijdens zowel taal- als zaalklassen.

Gedurende een periode van drie schooljaren (vmbo 1 – vmbo 3) zijn 63 leerlingen van 10 verschillende etnisch gemengde scholen uit de Randstad elk schooljaar

geobserveerd tijdens twee reguliere lessen Nederlands en Mens & Maatschappij. Tijdens de geobserveerde lessen werd van alle leerlingen individueel gecodeerd hoeveel tijd zij participeerden tijdens lees- en schrijfactiviteiten. Daarnaast is elk jaar met vragenlijsten de affectieve en cognitieve betrokkenheid van de leerlingen in kaart gebracht. Tot slot is elk schooljaar de lees- en schrijfvaardigheid gemeten met behulp van een uitgebreide speciaal op de doelgroep afgestemde leestoets (Van Steensel e.a., 2012) en bijbehorende schrijfopdrachten. Vervolgens zijn met behulp van regressieanalyses de relaties tussen enerzijds de aspecten van betrokkenheid en anderzijds het niveau en de ontwikkeling in lees- en schrijfvaardigheid onderzocht.

De resultaten laten zien dat vmbo-leerlingen meer indicaties van betrokkenheid bij lezen en schrijven op school vertoonden dan werd verwacht. Ondanks dat de leerlingen moeite hebben met lezen en schrijven uitten ze gemiddeld veel vertrouwen in hun eigen lees- en schrijfvaardigheid. Ze beschouwden lezen en schrijven ook als betrekkelijk nuttig. Ze achten lees- en schrijfvaardigheid van belang voor het krijgen van een baan en om succesvol te zijn in hun toekomstige beroepspraktijk. Wat lees- en schrijfplezier betreft, hadden de jongeren gemiddeld geen uitgesproken negatieve of positieve gevoelens. Daarnaast rapporteerden ze gemiddeld bereidheid om moeite te investeren in geletterde activiteiten en gaven ze aan regelmatig strategieën te gebruiken om hun lezen en schrijven te reguleren. Er bleek tevens gemiddeld een tamelijk hoge mate van betrokkenheid tijdens de lessen Nederlands en Mens & Maatschappij. Voor gemiddeld tweederde van de tijd deden de jongeren actief mee in de aangeboden lees- en schrijfactiviteiten.

Ondanks dat in de onderzoeks literatuur betrokkenheid als een belangrijke voorspeller van lees- en schrijfvaardigheid wordt bestempeld, kon deze relatie voor veel aspecten van betrokkenheid niet worden vastgesteld. Alleen percepties van plezier in geletterde activiteiten en les participatie bij Mens & Maatschappij waren positief gerelateerd aan het niveau van lees- en schrijfvaardigheid. Dit wil zeggen dat vmbo-leerlingen die lezen en schrijven als plezieriger ervaren en meer participeren in lees- en schrijfactiviteiten bij Mens & Maatschappij, beter zijn in begrijpend lezen en het schrijven van teksten. De overige onderzochte indicatoren van betrokkenheid leverden geen significante bijdrage in het verklaren van lees- of schrijfvaardigheid van vmbo-leerlingen. Een belangrijkere bevinding was dat zowel hun lees- als hun schrijfvaardigheid in de loop van de drie schooljaren gemiddeld sterk verbeterde. Niet alle leerlingen verbeterden zich echter in dezelfde mate. Geheel tegen de verwachtingen in bleek geen van de onderzochte indicatoren van betrokkenheid verschillen in lees- en schrijfontwikkeling te kunnen verklaren.

Een mogelijke verklaring voor de beperkte rol van betrokkenheid in de verklaring van verschillen in niveau en vaardigheid, is dat de betrokkenheid zodanig is dat het

voortgang in lees- en schrijfvaardigheid van vmbo-leerlingen onvoldoende stimuleert. Zo hadden de leerlingen ondanks hun zwakke lees- en schrijfvaardigheid een tamelijk groot vertrouwen in hun eigen schriftelijke vaardigheden. Een hoog zelfvertrouwen kan er toe leiden dat leerlingen niet de noodzaak zien zich extra in te zetten om zichzelf te verbeteren, terwijl dit gezien hun feitelijke achterstanden wel nodig is (Salomon, 1984; Sawyer e.a., 1992). Het hoge zelfvertrouwen is niet ongebruikelijk voor zwakke leerlingen. Het kan een manier zijn om, om te gaan met moeilijke taken. Het is ook mogelijk dat het een gevolg is van het gehomogeniseerde onderwijsysteem waarin middelbare scholieren in Nederland zich bevinden. Vanaf de brugklas komen de zwakkere leerlingen bij elkaar in de basis- en kaderberoepsgerichte leerwegen van het vmbo. In deze leerwegen zijn leerlingen omringd met klasgenoten met vergelijkbare geringe schriftelijke vaardigheden en is lesmateriaal en instructie afgestemd op de capaciteiten en behoeften van de leerlingen. Als gevolg daarvan kunnen leerlingen de indruk krijgen dat zij voldoende competent zijn in het uitvoeren van hun lees- en schrijftaken, ondanks dat zij feitelijk gezien nog steeds zwakke lezers en schrijvers zijn. Dit kan veroorzaken dat percepties van eigen vaardigheid niet stroken met hun daadwerkelijke vaardigheid.

Wat lees- en schrijfplezier betreft, is het mogelijk dat verschillen in plezier op jongere leeftijd hebben bijgedragen aan verschillen in lees- en schrijfontwikkeling, maar dat dit effect niet meer werkzaam is op het moment dat leerlingen de overstap maken naar het middelbaar onderwijs. Dit is een mogelijke verklaring voor het gegeven dat wel relaties met lees- en schrijfvaardigheid gevonden zijn, maar niet met hun ontwikkeling vanaf de eerste klas van het vmbo. Dat verschillen in percepties van het nut van lezen en schrijven niet bijdragen aan verschillen in vaardigheid en ontwikkeling kan een gevolg zijn van het feit dat leerlingen dit nut niet direct betrekken op hun schoolse lees- en schrijfactiviteiten. Het is dan niet vanzelfsprekend dat leerlingen kennis en vaardigheden ontwikkelen die dieper tekstbegrip en betere schriftelijke communicatie mogelijk maken, terwijl dit wel nodig is om hun schriftelijke vaardigheden te verbeteren (Schiefele, 1999; Schraw & Lehman, 2001; Wang & Guthrie, 2004; Wigfield & Guthrie, 1997). Daarnaast lonken andere uitdagingen in de vroege adolescentie die concurreren met aandacht voor school, zoals omgaan met vrienden, andere vormen van vrijetijdsbesteding en ontluikende seksualiteit.

Aangaande het ontbreken van verbanden tussen enerzijds ontwikkeling van lees- en schrijfvaardigheid en anderzijds de cognitieve en gedragsmatige betrokkenheid, is het mogelijk dat deze aspecten van betrokkenheid onvoldoende specifiek gemeten zijn. Zo geven algemene indicaties van lesparticipatie in lessen Nederlands en Mens & Maatschappij en zelfrapportages over zelfregulatie en inzet geen informatie over de aard en de kwaliteit van de instructiepraktijken en de daadwerkelijke aanpak van lees-

en schrijftaken door leerlingen. Daarnaast zijn zelfrapportages niet altijd betrouwbaar ten aanzien van wat mensen daadwerkelijk doen (Cromley & Azevedo, 2006; Veenman e.a., 2006).

Deel II – De rol van lees- en schrijfinstructie

Aangezien betrokkenheid varieert over leeromgevingen is het belangrijk dat meer aandacht wordt geschenken aan de instructiepraktijken die plaatsvinden binnen de lessen Nederlands en Mens & Maatschappij. Daarom zijn in **hoofdstuk 3** deze instructiepraktijken nader onderzocht. Hoofdstuk 3 beschrijft een longitudinale studie naar de aard en het belang van gedragmatige betrokkenheid in een variëteit aan instructiepraktijken in taal- en zaakvakken voor de ontwikkeling van lees- en schrijfvaardigheid van vmbo-leerlingen. Met behulp van de inzichten uit modellen die richting geven aan het verzorgen van effectief taalonderwijs zijn zes instructiecontexten onderscheiden op basis van de focus (expliciete instructie van taalvaardigheden of instructie gericht op teksthouden) en de werkvorm (klassikaal, in groepjes of individueel).

Over een periode van 3 schooljaren (vmbo 1 – vmbo 3) zijn 63 leerlingen van 10 verschillende klassen elk schooljaar geobserveerd tijdens twee lessen Nederlands en twee lessen Mens & Maatschappij. Tijdens de geobserveerde lessen werd van alle leerlingen individueel gecodeerd hoeveel tijd zij participeerden in de zes instructiecontexten. Daarnaast is elk schooljaar de lees- en schrijfvaardigheid gemeten met behulp van dezelfde lees- en schrijftoets die in de eerste 2 hoofdstukken (Deel I) is gebruikt. Vervolgens zijn met behulp van regressieanalyses relaties tussen participatie in de verschillende instructiecontexten en de ontwikkeling in lees- en schrijfvaardigheid onderzocht.

De resultaten laten zien dat het lezen en schrijven op school voornamelijk plaatsvindt in individuele werkvormen. In de lessen Nederlands heeft dit voornamelijk betrekking op expliciet vaardigheidsonderwijs (woordenschat, grammatica en strategie-instructie) en in de lessen Mens & Maatschappij op het verwerven van teksthouden. Verrassend was de bevinding dat de leerlingen vooruitgang boekten in lees- en schrijfvaardigheid, maar dat participatie in de zes onderscheiden instructiecontexten in de taal- en zaakvakken nauwelijks bijdroeg aan het verklaren van onderlinge verschillen in vooruitgang. Alleen betrokkenheid in klassikale instructie gericht op expliciete taalvaardigheden bij Nederlands (vooral metacognitieve kennis), bleek een kleine bijdrage te leveren aan de verklaring van ontwikkeling van schrijfvaardigheid.

Een mogelijke verklaring voor deze bevindingen is dat het huidige onderwijs nog weinig kenmerken vertoonde van effectief taalonderwijs die in de literatuur worden

aanbevolen. Zo was er in de lessen Nederlands nog weinig sprake van inhoudsgericht taalonderwijs en werd er bij Mens & Maatschappij weinig taalondersteuning geboden. Bij Nederlands werd wel aandacht geschonken aan aspecten van technisch lezen en werd relatief veel tijd besteed aan spelling, woordbenoeming en zinsontleding. Uit onderzoek blijkt echter dat jongeren die moeite hebben met lezen en schrijven niet zozeer behoeft te hebben aan instructie op deze aspecten, maar vooral baat hebben bij expliciete aandacht voor woordenschat en metacognitieve kennis over strategieën en tekstsoorten (Biancarosa & Snow, 2006; Graham & Perin, 2007; Langer, 2001; Pressley, 2006; Van Gelderen e.a., 2007). Interactieve instructievormen werden in de lessen weinig geobserveerd. Interactieve instructievormen, zoals dat mogelijk is in klassikaal en groepsonderwijs, bieden juist de mogelijkheid tot taalproductie, het delen van kennis, voorbeeldgedrag en elkaar te motiveren (Guthrie, e.a., 2007; Johnson & Johnson, 2009; Klinger e.a., 2004; Palinscar & Herrenkohl, 2002; Rijlaarsdam e.a., 2008; Swain, 2001; Vaughn e.a., 2001; Yarrow & Topping, 2001).

Deel III – Lezen en schrijven op school: verschillen in aanpak en succes

Onderzoek heeft aangetoond dat goede lezers en schrijvers veel zelfregulatieve strategieën inzetten in tegenstelling tot zwakke lezers en schrijvers. Niettemin is nog weinig bekend over hoe vmbo-leerlingen een schoolse lees- en schrijftaak aanpakken en de type zelfregulatieve strategieën die ze daarbij gebruiken. **Hoofdstuk 4** en **hoofdstuk 5** zijn dieptestudies naar de aard en het belang van zelfregulatieve strategieën tijdens het uitvoeren van schoolse lees- en schrijftaken. De strategieën werden gerelateerd aan het behaalde succes op deze taken. In het tweede leerjaar hebben 51 leerlingen een combineerde lees- en schrijftaak uitgevoerd, gemodelleerd naar taken die leerlingen vaak tegenkomen in hun schoolboeken. Het leesgedeelte bestond uit het lezen van een tekst en het beantwoorden van vijf verwante begripsvragen. Het schrijfgedeelte bestond uit het schrijven van een korte betogende tekst voor de schoolkrant. De leerlingen werden gevraagd tijdens het maken van de taak hardop te denken. Het uitvoeren van de taak werd op video vastgelegd. Met behulp van correlatieanalyses zijn relaties tussen indicatoren van zelfregulatie en de prestaties op de taak onderzocht. Ook zijn sequenties van zelfregulatie van leerlingen met de beste, de gemiddelde en de laagste scores op de taak met elkaar vergeleken.

Voor lezen wijzen de resultaten uit dat leerlingen die starten met een oriëntatie op de taak en de tekst, vervolgen met het lezen van de hele tekst en tot slot de vragen beantwoorden, het meest succesvol waren. Zoals vaker wordt gevonden bij zwakke lezers kwamen de vmbo-leerlingen in onze studie niet veel verder dan oppervlakkig tekstbegrip (Cerdán & Vidal-Abarca, 2008; Cataldo & Oakhill, 2000; Kintsch & Kintsch, 2005; Pearson, e.a., 1992; Pressley, 2000; Oakhill & Cain, 2007; Rapp e.a., 2007). Dit

wil zeggen dat ze de tekst nauwelijks koppelden aan hun voorkennis en dat zij hun tekstbegrip tussentijds amper controleerden. In overeenstemming met de literatuur over leesprocesen (Chambers Cantrell e.a., 2010; Graesser, 2007; Kintsch & Van Dijk, 1978), vonden we dat leerlingen die tijdens het lezen meer koppelingen legden tussen de letterlijke inhoud van de tekst en hun eigen kennis, succesvoller waren in het beantwoorden van de begripsvragen.

Voor schrijven wijzen de resultaten uit dat het schrijfproces van vmbo-leerlingen veel overeenkomsten heeft met wat Bereiter & Scardamalia (1987) '*Knowledge telling*' noemen. Dit houdt in dat leerlingen kennis over het onderwerp uit hun geheugen ophalen en opschrijven zonder daarbij veel aandacht te besteden aan retorische doelen, de opdracht, de behoeften van lezers of de tekststructuur. Leerlingen die voor het schrijven uitgebreider nadachten over het doel van hun tekst en over de manier waarop ze dit wilden bereiken, schreven beduidend betere teksten. Hetzelfde gold voor leerlingen die tijdens het schrijven van de tekst meer stilstonden bij de manier waarop zij hun boodschap wilden verwoorden.

Dat het lezen en schrijven van de meeste vmbo-leerlingen nog veel kenmerken vertoont van een oppervlakkige verwerking is niet onverwacht en komt overeen met het beeld dat naar voren komt uit eerder onderzoek naar zwakke lezers en schrijvers (De La Paz e.a., 1998; Englert e.a., 1988; Graham, 1997; Pressley, 2000; Rapp e.a., 2007). Vermoedelijk ligt de beperkte metacognitieve kennis en ervaring met het toepassen van deze kennis in uiteenlopende lees- en schrijftaken ten grondslag aan de gevonden patronen (Graham, e.a., 1993; McCutchen, 1986). Onze observaties dat sommige leerlingen wel degelijk strategieën toepassen die leiden tot een dieper tekstbegrip en betere schriftelijke communicatie en zo beter presteren, geeft aan dat er nog een wereld te winnen is op dit terrein en dat ook vmbo- leerlingen klaar zijn om met ondersteuning een volgende stap in hun lees- en schrijfontwikkeling te zetten.

Conclusies en discussie

Een belangrijk doel van dit proefschrift is inzicht te verschaffen in de lees- en schrijfontwikkeling van vmbo-leerlingen. De studie laat duidelijk zien dat de vmbo-leerlingen vooruitgang boeken in hun lees- en schrijfvaardigheid in de periode tussen het eerste en derde leerjaar van het middelbaar onderwijs en dat zij een redelijke hoge betrokkenheid vertonen in lezen en schrijven op school. Deze bevindingen nuanceren het stereotipe van vmbo-leerlingen dat zij per definitie weinig betrokken zijn en dat hun lees- en schrijfontwikkeling stagneert. Anderzijds zijn er ook aanwijzingen dat er ruimte is voor sterkere verbetering van de lees- en schrijfvaardigheid van vmbo-leerlingen dan nu het geval is. Met betrekking tot de instructiepraktijk laat dit

proefschrift zien dat de instructiepraktijk voor lezen en schrijven bij Nederlands en Mens & Maatschappij nog weinig kenmerken vertoont die worden aanbevolen in de literatuur, zoals samenwerking en afstemming tussen deze vakken, interactieve werkvormen, inhoudsgerichte taalontwikkeling en expliciete aandacht voor metacognitieve kennis en taalvaardigheden.

Een ander belangrijk doel van dit proefschrift is het bepalen van de rol van betrokkenheid bij het niveau en de ontwikkeling van lees- en schrijfvaardigheid. De bevindingen suggereren dat betrokkenheid bij lezen en schrijven op school wel verschillen in vaardigheid van leerlingen kan verklaren, maar geen verschillen in ontwikkeling. Deze resultaten suggereren dat de positieve invloed die sommige aspecten van betrokkenheid hebben op de ontwikkeling van lees- en schrijfvaardigheid van vmbo-leerlingen in het verleden, in de loop van hun ontwikkeling verdwijnen.

Verder heeft deze studie laten zien dat de rol van betrokkenheid meer complex is dan aanvankelijk werd gedacht op basis van onderzoek naar jongere en meer heterogene groepen lezers en schrijvers. Vanwege de aard van de steekproef zijn de resultaten niet generaliseerbaar naar zwakke lezers en schrijvers uit andere onderwijscontexten. Vervolgonderzoek naar grotere steekproeven van zwakke lezers en schrijvers is dan ook nodig om de bevindingen van deze studie te valideren. Het zou daarnaast erg interessant zijn om te weten welke rol betrokkenheid bij lezen en schrijven op school speelt in de lees- en schrijfontwikkeling van andere typen adolescente leerlingen, zoals vwo- en mbo-leerlingen.

De longitudinale onderzoeksopzet van dit proefschrift heeft inzichten opgeleverd in de relatie tussen betrokkenheid en vaardigheid enerzijds en tussen betrokkenheid en ontwikkeling anderzijds. Het onderzoek heeft hiermee aangetoond dat samenhangen tussen vaardigheidsniveau en betrokkenheid van zwakke leerlingen onvoldoende inzicht geven in de vraag of betrokkenheid ook de ontwikkeling van lees- en schrijfvaardigheid van deze leerlingen kan beïnvloeden. In huidig onderzoek worden gevonden samenhangen tussen vaardigheidsniveau en indicatoren van betrokkenheid veelal gezien als geldig voor de verklaring voor de samenhang tussen betrokkenheid en hun lees- en schrijfontwikkeling. Onze bevindingen benadrukken echter dat dit niet terecht is en dat het belangrijk is om een expliciet onderscheid te maken tussen vaardigheidsniveau en ontwikkeling in onderzoek naar relaties tussen betrokkenheid en leerprestaties. Om onze kennis over de lees- en schrijfontwikkeling van jongeren te vergroten is daarom meer longitudinaal onderzoek naar de relatie tussen betrokkenheid en lees- en schrijfontwikkeling zeer gewenst.

Daarnaast is verder onderzoek naar de situatiespecifieke aard van betrokkenheid van belang. Ook laat dit proefschrift zien dat het nodig lijkt om vervolgonderzoek te verrichten naar de rol van andere aspecten van betrokkenheid, zoals van percepties

van autonomie, doeloriëntaties en extrinsieke motivatie. Verder zouden we aandacht willen vragen voor onderzoek naar negatieve emoties, zoals verijdingsdrang en gebrek aan controle over het eigen leerproces. Tot slot zou in toekomstig onderzoek onderzocht kunnen worden of er sprake is van een wederkerige of eenzijdig-causale relatie tussen betrokkenheid en lees- en schrijf ontwikkeling van vmbo-leerlingen. Dit en ander aanbevolen onderzoek kan onze kennis over de dynamische samenhang tussen betrokkenheid bij lezen op school en lees- en schrijfontwikkeling aanzienlijk vergroten.

Aanbevelingen voor het onderwijs

De uitkomsten van dit proefschrift hebben ook enkele implicaties voor het onderwijs. Zo is het belangrijk dat de leeromgeving goed aansluit bij de kennis, vaardigheid en behoeften van vmbo-leerlingen. Er moet gestreefd worden naar een meer realistische inschatting van eigen vaardigheid van de leerlingen, het verhogen van hun plezier in lezen en schrijven, en uitbreiding van hun metacognitieve kennis en zelfregulatieve vaardigheden. De analyse van instructiepraktijken bij Nederlands en Mens & Maatschappij heeft diverse aanwijzingen gegeven voor het verbeteren van de lees- en schrijfvaardigheid van vmbo-leerlingen. Een viertal aandachtspunten zijn van belang.

Ten eerste is het belangrijk om lees- en schrijfactiviteiten bij zaakvakken, zoals Mens & Maatschappij te benutten om instructie over lezen en schrijven te geven. Daarbij is het vooral van belang aandacht te geven aan schooltaalwoordenschat en vakjargon, en lees- en schrijfstrategieën van leerlingen. Aangezien zaakvakdocenten geen taaldocenten zijn moet dit gecoördineerd worden met taaldocenten en taalcoaches.

Ten tweede is aan te bevelen lees- en schrijfinstructie bij Nederlands te koppelen aan de inhoud van andere vakken en aan activiteiten van leerlingen buiten school. Het maken van een werkstuk bij Nederlands wordt voor leerlingen functioneler als dat gekoppeld wordt aan het schrijven van een werkstuk voor Economie. Het schrijven van een sollicitatiebrief wordt betekenisvoller als dit gebeurt op het moment waarop zij op zoek gaan naar een stageplaats of vakantiebaantje. Naast aandacht voor het directe belang van lees- en schrijftaken voor leerlingen is het ook aan te raden om voldoende ruimte te bieden voor vrije en expressieve vormen van lezen en schrijven dat gericht is op prettige ervaringen. Een doordacht en goed getimed curriculum is bepalend in het bereiken van een hoge mate van betrokkenheid en succes.

Ten derde is er veel te winnen door het repertoire van zelfregulatie kennis en vaardigheden van vmbo-leerlingen uit te breiden. Met betrekking tot lezen is meer aandacht nodig voor meer geavanceerde leesstrategieën, waaronder het maken van

inferenties, het monitoren van eigen tekstbegrip, het ophelderken van onduidelijkheden en het bepalen van hoofd- en bijzaken. Ook is instructie gericht op taakoriëntatie en het kiezen en van een goede taakaanpak gewenst. Aangezien taken en teksten steeds complexer worden is ook aandacht voor globaal lezen en de omgang met verschillende bronnen van belang. Met het oog op schrijven is veel vooruitgang te boeken met aandacht voor formulering. Ook speciale aandacht voor planning, monitoren, revisie en evaluatie zal de schrijfprestaties aanzienlijk kunnen verbeteren. Daarnaast laat onderzoek steeds meer zien dat het hardop voordoen van zelfregulatieve activiteiten tijdens lezen en schrijven door de docent een effectieve manier is om de zelfregulatie van leerlingen te faciliteren (Alfassi, 2004; Graham, 2006; Palinscar & Brown, 1984; Palinscar & Herrenkohl, 2002). Bij deze aanpak introduceren docenten een strategie en vertellen leerlingen over het doel en het gebruik ervan. De strategie wordt vervolgens aangeleerd door een serie van dialogen tussen de docent en zijn leerlingen. Zodra leerlingen meer vertrouwd raken met de strategieën, kunnen zij van elkaar leren door met elkaar over hun aanpak en de moeilijkheden die ze tegenkomen van gedachten te wisselen.

Tenslotte is het raadzaam om voldoende mogelijkheden te creëren voor interactie tussen leerlingen onderling en voor interactie met de docent, zodat stimulatie van het lezen en schrijven, (expert) voorbeeldgedrag en controle en verzekerd is. Dit bevordert de betrokkenheid van de leerlingen bij de lees- en schrijfactiviteiten op school. In deze situaties is het tevens belangrijk dat docenten begeleiding en terugkoppeling geven op het leerproces als op de uitkomsten.

Onderwijs dat aan de genoemde kenmerken voldoet is veelbelovend voor het vergroten van lees- en schrijfvaardigheid van vmbo-leerlingen. Ook al zijn de genoemde aanbevelingen niet nieuw, de bevindingen van deze studie hebben laten zien dat ze onze aandacht nog steeds verdienen. Het is te hopen dat een gezamenlijke inspanning van onderzoekers en docenten uitdagend en betekenisvol lees- en schrijfonderwijs mogelijk maakt en de kloof tussen theorie en praktijk kan verkleinen.

Curriculum vitae

Ilona de Milliano (1984) obtained her pre-academic degree at the Sint Willibrord College in Goes. Afterwards she studied Communication and Information Sciences at Tilburg University. She graduated and received her bachelor's degree (2005) with a study into the effect of speech addition to written text on the reading comprehension proficiency of children in primary education¹⁸ (cum laude). This study was part of a traineeship at the Expertisecentrum Nederlands of Radboud University Nijmegen. Following she enrolled in the research master Language and Communication at Tilburg University. As a research trainee at the Babylon Research Institute of Tilburg University she conducted research on adult second language acquisition¹⁹. Ilona graduated (2007) with a study into the metalinguistic awareness of young adolescents attending different grades (7th and 9th) and school tracks (prevocational and pre-academic)²⁰.



After finishing her masters' degree, Ilona started her PhD at the University of Amsterdam observing the literacy development of low-achieving adolescents. This PhD-study was part of Project SALSA (*Studies naar Achtergronden van Lees- en Schrijfontwikkeling van Adolescenten*) and was conducted in collaboration with the Kohnstamm Institute of the University of Amsterdam. Since August 2011, Ilona is employed as a Dutch Language teacher in prevocational secondary education at the IJsselcollege in Capelle aan den IJssel.

Ilona's research interests include low-achieving students, (pre)vocational education, reading and writing development, literacy instruction and curriculum design.

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