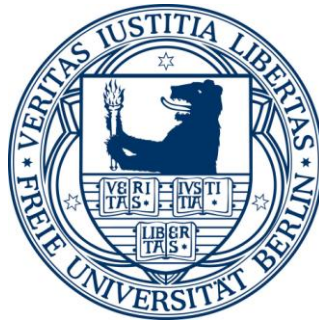


**Fachbereich Erziehungswissenschaft und Psychologie
der Freien Universität Berlin**



Associations between school self-concept, social relationships and achievement motivation
in adolescence in the school context

Dissertation

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Table of Contents

General introduction	7
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1. Chapter 1

Theoretical Background

1.1	Self-concept	10
1.1.1	The historical development	11
1.1.2	The definition of self-concept	17
1.1.2.1	School self-concept	17
1.1.3	Self-concept in adolescence	20
1.2	Achievement motivation	21
1.2.1	Self-Determination Theory of achievement motivation	23
1.2.2	Achievement motivation and academic achievement	24
1.2.3	Self-concept, achievement and achievement motivation in the school context	25
1.3	Social relationships at school	27
1.3.1	Student-student relationships	28
1.3.2	Teacher-student relationships	29
1.4	School education in Germany	31
1.5	Desideratum	31
1.6	General design of the current Ph.D. study	33
1.7	References	35

2. Chapter 2 – Study I

*The mediating role of socio-motivational support in
the association between individual school self-
concept and achievement motivation amongst
adolescent students.*

2.1	Abstract	52
2.2	Current study	56
2.3	Method	56
2.4	Statistical analyses	59

2.5	Results	60
2.6	Discussion	68
2.7	Strengths, limitations and future research	72
2.8	References	74

3. Chapter 3 – Study II

Do socio-motivational relationships predict achievement motivation of adolescents with high and low school self-concept?

3.1	Abstract	84
3.2	Objective and hypotheses	87
3.3	Method	88
3.4	Statistical analyses	91
3.5	Results	93
3.6	Discussion	102
3.7	Practical implications	106
3.8	Strengths, limitations and future research	107
3.9	References	109

4. Chapter 4– Study III

Perception of teachers and peers during adolescence: does school self-concept matter? Results of a qualitative study.

4.1	Abstract	119
4.2	Current Study	123
4.3	Method	123
4.4	Results	125
4.5	Discussion	131
4.6	Practical implications	133
4.7	Strength, limitations and future directions	134
4.8	References	136
	Appendix	145

5.	Chapter 5	
	<i>General Conclusions</i>	
5.1	Review of the main findings	146
5.2	Theoretical and practical implications	151
5.2.1	Theoretical implications	151
5.2.2	Practical implications	152
5.3	Future directions	154
5.4	General conclusions	156
5.5	References	158
6.	Acknowledgements	164
7.	Lebenslauf	165
8.	Zusammenfassung der Ergebnisse in deutscher Sprache	169
9.	Liste der aus dieser Dissertation hervorgegangenen (Vor)veröffentlichungen	171
10.	Versicherung, die Arbeit selbständig verfasst zu haben	172

„So it is that the Self resists change as much as possible in order to enjoy a consistent and organized world. However, the Self will change if the need is great enough [...]. If the child sees the educative process as personally meaningful and enhancing, and if the degree of threat provided by the school experience is not overpowering, then the child will learn in school. Very few children want to be failures as students, just as few teachers want to be failures at teaching.”

(Purkey, 1967, p. 24)

General Introduction

A concern that in adolescence students' motivation often reveals a negative trend, which has significant consequences on further schooling has been reflected in educational research as early as 1970s (Brophy & Good, 1974). Although decades of subsequent publications enriched and added more detail to that issue (Finn, 1989; Dohn, 1991; Eccles, Wigfield, & Schiefele, 1998; Zusho & Pintrich, 2001), the situation has still not changed much – which can be observed both in modern schools and more recent scientific publications (Watt, 2004; Peetsma, Hascher, Van der Veen, & Roede, 2005; Ladd, Herald-Brown, & Kochel, 2009). This proves that the strategies, on one hand, supporting students from a motivational decline and, on the other hand, providing guidelines for teachers and parents are still to be developed. In the current work attention will be focused on school self-concept and its associations with achievement motivation and socio-motivational relations at school as these variables play an essential part during the period of adolescence and school transition, which will be reviewed in detail in Chapter 1.

Adolescence is often metaphorically described as a period of „storm and stress“ (Arnett, 1999), brought about by a combination of biological, psychological and social changes, accompanied by the transition from primary to secondary school. All the abovementioned factors combined make it one of the most challenging periods during the life span. For those students who are not able to cope with these challenges and adjust to the new surrounding, the school transition might potentially result in low self-concept, academic failure, school dropout and maladaptive psychological functioning (Ellis, Marsh, & Craven, 2005). Ironically, adolescence together with its challenges might become not only a turning point for a downward trend, but is also one of the last major opportunities to affect the educational and personal development in a positive way. There is evidence that not all students are equally subject to risks that take place in adolescence: while some of them experience the changes as overwhelming and threatening to their progress, in others the experienced challenges result in mobilization of all personal resources and together with it provide a splendid opportunity for personal growth (Ellis et al., 2005).

The self-concept is granted an essential role during the period of school transition (Burns, 1982; Brinthaupt & Lipka, 2002). As defined by Burns (1979) self-concept is a dynamic, motivating set of attitudes that an individual holds about him- or herself that is both a constituent and a major outcome of all learning situations. For decades, self-concept has been a topic of interest for educators, but the research has been mostly focused on its

association with achievement. A detailed overview of that issue is presented in Wylie, Miller, Cowles, and Wilson (1979). The further development of research proves that self-concept and achievement are reciprocally related and mutually reinforcing (Marsh & Craven, 2005a, 2005b), but also indicates that other variables should be considered in this association as well. Considering the mediating role of the achievement motivation in the association between self-concept and achievement (Areepattammannil, 2012), it is no wonder that especially during adolescence there is not only a decline in self-concept and academic grades (Simmons & Blyth, 1987), but also evidence of a dramatic drop in achievement motivation (Eccles et al., 1998; Watt 2004; Zusho & Pintrich, 2001; Peetsma et al., 2005).

For decades it has been acknowledged and reflected in educational policies and guidelines that the aim of schooling should not only be concentrated on performance results, but also consider a student's physical, social and emotional development (Burns, 1979). This widening of the aims of schooling serves another proof of the importance of the positive self-concept development, which not only affects all developmental aspects but also influences students' aspirations for the future and post-schooling choices (Craven & Marsh, 2005).

The self-concept functions not only as a stabilizer, keeping an individual on a certain level and guiding the future behavior, but is also developed through feedback from others (Pajares & Schunk, 2005). Therefore, the result of the obstacle-or-opportunity dilemma of adolescence depends not only on individual factors, such as personal beliefs and competences, but also on the availability and quality of social support (Clark, 1995). There is evidence that needs and opportunities to obtain social support during the period of school transition are ill-balanced (Eccles et al., 1993). While the main source of self-related information shifts away from the family, teachers and peer groups grow in importance and obtain new roles (Burns, 1979). However, the school transition often results in disruption of already existing social networks. Furthermore, the number of teachers increases and consequently a number of new educational demands arises (Harter, 1996). In addition, new peer groups might be a cause of increased peer pressure, the need to adjust within the new group and the difficulty of coordinating old and new friendships. At the same time, peers comprise two influential sources for self-related feedback as well as motivation. Therefore, appropriate guidance and feedback from teachers as well as friendly support and possibilities for comparison and competition from peers may make a

significant contribution not only to maintenance of self-concept but also to achievement motivation boost.

Overall, the promotion of school-based intervention strategies to help maintain positive self-concepts, overcome the adjustment difficulties and support achievement motivation is especially important in adolescence. The current research initiative is in response to this demand: in detail, social relationships in school are examined as a potential starting point fostering adolescents' self-concept and motivation. The findings indicate that especially the targeted development of positive teacher and peer relations may provide an effective starting point for both maintaining positive self-concept, boosting achievement motivation and buffering the negative effects caused by school transition. The research presented in the current work due to a large sample allows generalizing the results for adolescents from the German state of Brandenburg, and may in the future be practically implemented in prevention and intervention strategies in school settings.

The Ph.D. thesis consists of five chapters. Chapter 1 outlines the theoretical background of the research and provides a brief overview of studies that laid the ground for the current work. Chapters 2-4 include the three studies that have been submitted to three peer-reviewed journals during the last 3 years. These studies are thematically connected and based on the self-report data of 1088 adolescent students from 23 secondary schools in Brandenburg. Chapter 5 focuses on the general discussion of findings, including subsequent theoretical and practical implications as well as directions for future research.

CHAPTER 1

The chapter provides an overview of established theories and presents some latest findings on self-concept, motivation and social relationships. The emphasis is put on the interplay of these constructs in the school context in the developmental phase of adolescence. The main research focus is set on exploring the role of socio-motivational relationships in the association of school self-concept and different aspects of achievement motivation.

1.1. Self-Concept

Self-concept is nowadays one of the most widely covered topics in international research. First interest in “self”-issues dates back to the time of antique philosophers in the interjection of “know thyself” (Bracken, 1996, p. 1). However, it was first in the 1890s that, thanks to the works of James, it finally started to obtain a grounded theoretical frame. The 1950-60s presented the decades of regaining the interest in “self” due to the emerging empirical research in the fields of developmental and social psychology (see Wylie et al., 1979; Stadler-Atlmann, 2010). Educational science was the last one to adopt the construct, which finally happened in the 1970s.

Since then, the research on “self” and related topics expanded and progressed, resulting in a large amount of definitions, a huge body of related constructs and theories as well as measurement instruments. According to Hattie (1992), already in 1992 a computer search (only) among English-speaking journals in psychology and education encountered 10910 articles since 1974, which comprised around 2.5% of all articles and remained stable over years. More up-to date research proves that the topic of self is still one of the key issues in educational research (see Bracken, 1996; Brüll, 2010).

A great part of research discusses findings on the relation between self-concept and achievement (Hattie, 1992; Wylie et al., 1979). Though the assumption of association between self-concept and achievement was widely spread already at the early stages of self-concept research (Wylie et al., 1979), the theories suggesting proofs for this association (e.g., Self-Determination Theory, Self-Enhancement Theory, Reciprocal Effects Theory) and provide evidence for the causal ordering were developed later. Nowadays, due to advances in self-concept research, it is assumed that self-concept and achievement are reciprocally related and mutually reinforcing (for more details, see Chapter 1.2.1).

The association of self-concept and achievement is also reflected in Covington's self-worth theory of achievement motivation (Covington & Berry, 1976; Covington, 1984), which puts forward an individual's striving to establish and further maintain a positive self-image, which contributes to social approval and through it increases the feeling of self-worth. This theory not only puts self-concept at the core of one's self-definition and presents it as a factor influencing motivation drive, but also emphasizes external factors, such as the approval of others.

Already the early research on the "self" (Mead, 1934; Cooley, 1902) taps at the importance of the role of interaction with significant others for the formation of self-perceptions. Later investigations provide additional proofs of this fact (Harter, 2012). Therefore, in self-research it is important to enhance the influence of significant others (Guimond, Chatard, Martinot, Crisp, & Redersdorff, 2006; Onorato & Turner, 2004) as well as the intensity of connection to them (Sinclair, Christenson, & Thurlow, 2005). These findings indicate the importance of investigating the roles that teachers and peers play in maintaining self-concept as well as promoting motivation in the school context. These processes might be especially important during adolescence, when the influence of parents declines and evaluations of peers (McGuire & McGuire, 1982) as well as feedback from teachers (Burns, 1979) gain importance (for more detail, see Chapters 1.3.1, 1.3.2).

Overall, the huge body of research on self-concept emphasizes the importance of maintaining a high self-concept with the aim of maximizing human potential and academic achievement, addressing societal problems and social inequities (Craven, Marsh & Burnett, 2003). In the education setting this is widely reflected in international educational policies (Marsh, Craven, & McInerley, 2003). However, though the high self-concept presents a clear strength, the mechanisms and straightforward strategies for how to maintain and keep it on a high level still need to be clarified and developed. That makes the "self"-research so exciting, offering much to explore, stirring imagination and, even after decades of existing research, still promising new discoveries.

1.2. The Historical Development

In the 1880s James (1890, 1892 – for overview see Hattie, 1992) is considered to be the first one to speak about self-concept. In his works he made a clear distinction between the two aspects of self: the subjective "I" as the knower and the empirical "me" as an object of self-creation, which later was developed into the today's notion of self-concept.

He also was the first to suggest the hierarchical structure of the construct¹, distinguishing between three dimensions: (1) the material self that included body image as well as material possessions, being at the lowest level, that other dimensions were based on; (2) the social self, comprised by characteristics given by others; and (3) the spiritual self, being on top of the hierarchy, comprised of an individuals' thoughts and moral judgments about him- or herself (cf. Hattie, 1992, pp. 15–17). All three dimensions were considered to be able to affect self-esteem, resulting either in well-being or dissatisfaction. Therefore, James' representation of self on one hand presented a unity in affecting self-esteem and being related to emotions (cf. Epstein, 1973), and on the other hand tapped its complex multidimensional structure. The model of James laid the first stone to the development of hierarchical and multifaceted models that still are the basis for contemporary research in the psychology of education. Moreover, it further influenced the sociological perspectives, inferring that self-concept is influenced by a social context in the broad sense (Cooley, 1902; Mead, 1934) as well as by particular significant others (Sullivan, 1953).

In the following years the number of theoretical models as well as self-concept measurement scales based on them multiplied dramatically. However, the research at that time was rather inconsistent in definitions as well as findings due to underdevelopment of the theoretical frame. As a result, most of the theories emerging from the 1950s on became objects of critique either due to their ambiguity, overlapping and incomplete theoretical background or broad and unsupported generalizations (for a detailed overview see Harter, 1996; Wylie, 1974; Wylie et al., 1979).

A remarkable contribution to self-concept research was made in the 1970s by Shavelson, Hubner, and Stanton (1976), who developed the concept of hierarchical and multifaceted self-concept structure. Shavelson ascribed to self-concept such characteristics as theoretical organization, multiple facets, hierarchical structure, stability, developmental nature, evaluative groundwork, and differentially from other constructs (Shavelson & Bolus, 1982). Subsequent research of Byrne (1984) as well as Marsh and Shavelson (1985), Shavelson and Marsh (1986) also found support for the multidimensionality and the multifaceted structure of self-concept. In the developmental process, the first model of

¹ Though in the development of theoretical frame of the self-concept there emerged models suggesting unidimensional, undifferentiable model of self-concept (e.g., in the works of Soares & Soares, 1980,1981,1982); or arguing that self-concept is compensatory and bipolar (e.g., in the works of Marx & Winnie, 1977; 1980) (for overview see Hattie,1992, pp. 69-76), they did not find support in further investigations, thus research returned to the idea of the hierarchical self-concept structure (Bracken, 1996)

Shavelson et al. (1976) was expanded by models of Song and Hattie (1984) as well as Marsh and Shavelson (1985) that are described in detail in the following passages. These models are of particular importance in the educational context, as their structural organization suggests the existence of the school self-concept² and places it in the strict hierarchy system.

1) Model of Shavelson, Hubner, and Stanton (1976)

Shavelson et al. (1976) put at the apex the perception of self as a person (general self-concept), further split into two facets - academic and non-academic self-concept (including social, emotional and physical components) that, in their turn, were subject to further subdivision into: subjects, such as English, History, Math and Science (academic); peers and significant others (social); particular emotional states (emotional); physical ability and physical appearance (physical) (see Figure 1).

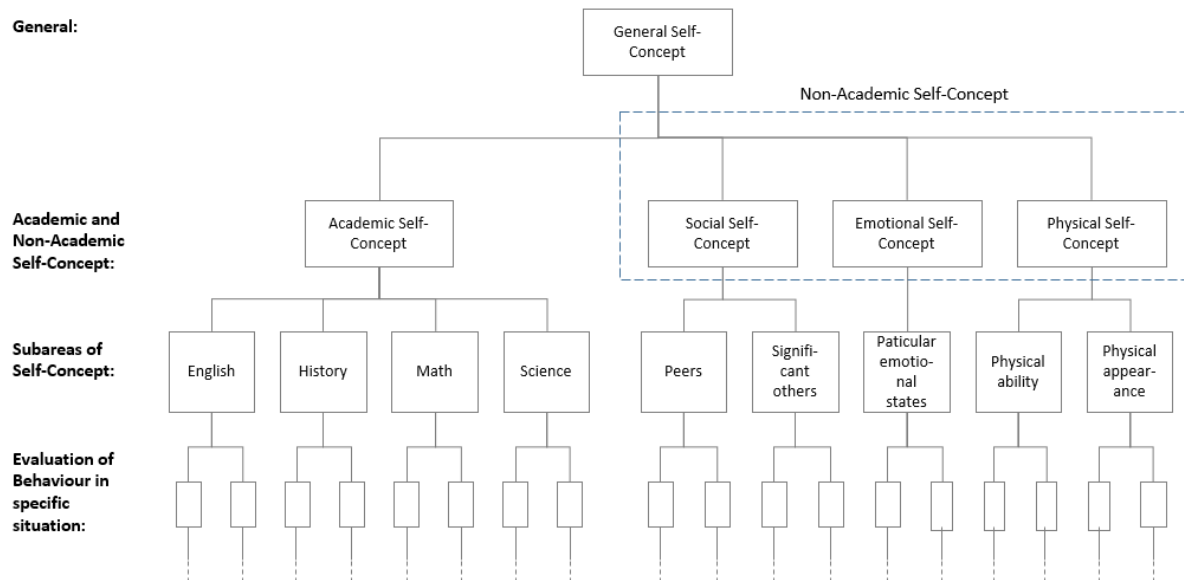


Figure 1. The Structure of Self-Concept according to Shavelson, Hubner, and Stanton. Adapted from: “Self-Concept: Validation of Construct Interpretations“ by J. R. Shavelson, J. J. Hubner, and G. C. Stanton, 1976, *Review of Educational Research* 46 (3), p. 413. Copyright 1976 by the American Educational Research Association

The model was carefully proposed as a possible representation of the hierarchical and multidimensional structure of self-concept rather than a universal truth (Craven et al., 2003). Though, due to lack of suitable measurement instruments at that time, Shavelson et

² or academic self-concept: the terms are often used interchangeably in the existing literature.

al. (1976) could not measure all the facets of self-concept that they proposed, the model gave an impulse for the development of new measurements as well as general revision of the self-concept theory (Craven et al., 2003).

2) Model of Marsh and Shavelson (1985)

The Shavelson, Hubner, and Stanton model (1976) was followed by the research of Marsh and Shavelson (1985), who on the basis of the existing findings developed a more differentiated model and suggested further subdivisions of academic self-concept in it. They grouped academic self-concept into two dimensions: math academic self-concept and verbal academic self-concept, both of these groups on the one hand contributing to general school self-concept and on the other more or less related to group-specific subjects. Thus, math self-concept was represented as related to math, physical science, biological science, economics and business self-concepts as well as partially associated with geography and history self-concept. In turn, verbal self-concept was represented as related to English, foreign languages, history and geography self-concepts and partially associated with economics and business self-concept as well as biological science self-concept. This model (see Figure 2) though is focused on academic self-concept only, provides additional support for the argument that self-concept is a complex and multifaceted construct (Hattie, 1992).

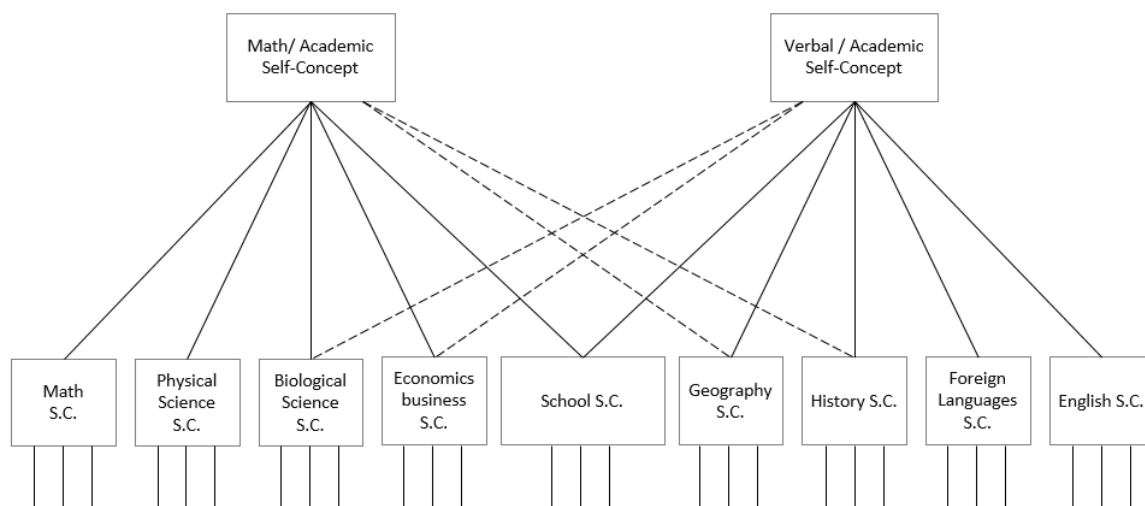


Figure 2. The Structure of Self-Concept according to Marsh and Shavelson. Adapted from: “A Multidimensional, Hierarchical Model of Self-Concept: Theoretical and Empirical Justification” by H.W. Marsh, 1990, *Educational Psychology Review* 2(2), p.93. Copyright 1990 by Plenum Publishing Corporation

3) Model of Song and Hattie (1984)

Another notable model in psychology and educational science was developed by Song and Hattie (1984). Its peculiarity was in both exploring the relationships between the various facets of self-concept and academic achievement and including social factors into the model (see Figure 3). In this view the general self-concept was subdivided into the (a) academic self-concept, (b) presentation of self and (c) social self-concept. The academic self-concept was further subdivided into: achievement self-concept, self-concept of ability, and classroom self-concept; the social self-concept was comprised by peers self-concept and family self-concept; presentation of self was based on physical self-concept and confidence in self. While ability self-concept in this model stands for the beliefs of an individual that he or she is capable of achieving something, achievement self-concept denotes the perceptions of achievement, which reflects the issue of association of self-concept and achievement, and the causal ordering, which will be further discussed in Chapter 1.2.1.

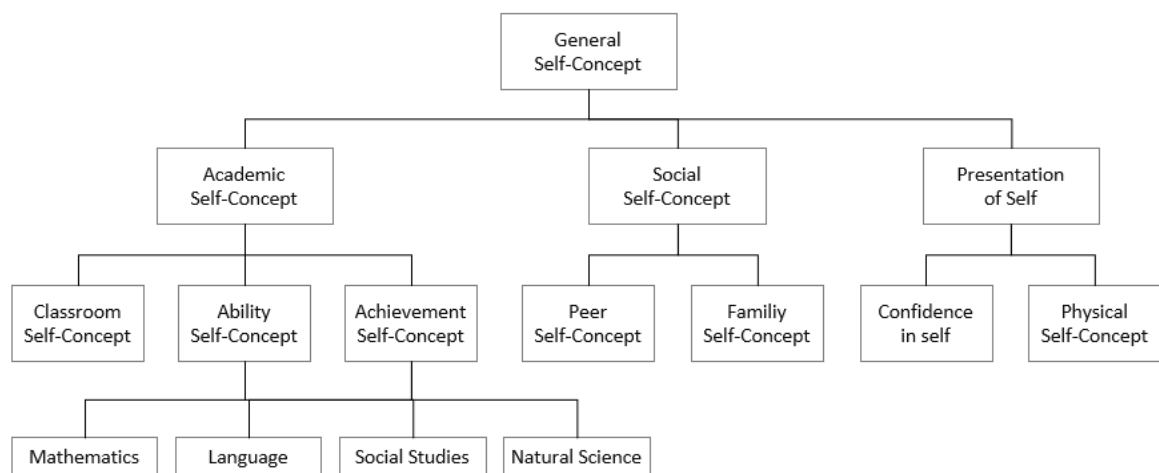


Figure 3. The Structure of Self-Concept according to Song and Hattie. Adapted from: “Home Environment, Self-Concept and Academic Achievement: A Causal Ordering Approach” by I. Song and J. Hattie, 1984, *Journal of Educational Psychology*, 76(6), p.1270. Copyright 1984 by the American Psychological Association

Hattie (1992), providing an overview of the abovementioned models as well as empirical research on which they are based, concludes that the differences between the model by Shavelson et al. (1976) and the model by Song and Hattie (1984) are rather small, while verbal and mathematics from the Marsh and Shavelson (1985) model are

necessary for adding to the original model (for overview see Hattie 1992, pp. 76–93). Moreover, while analyzing the existing by that time research on self-concept, he concludes that there is support for the assumption that in comparison to childhood, in adolescence self-concept becomes more complex and hierarchical. In addition, Marsh and Craven (2005a, 2005b) claim that the support for the multidimensional perspective is especially strong in educational research. In present time the development of research methods has led to significant advances in self-concept research as well as contributed to its higher quality, resulting in stronger theoretical models, improved methodology (Green, Nelson, Martin, & Marsh, 2006) and the invention of psychometrically sound instruments of self-concept measurement (Marsh et al., 2003).

However, considering the existing points of critique it is important to note that works on self-concept should be revised with care while generating new assumptions. Hattie (1992) states that some authors use self-concept and the related constructs interchangeably, using synonymously to self-concept such notions as: “*self, self-estimation, self-identity, self-image, self-perception, self-consciousness, self-imaginary and self-awareness*” (Hattie, 1992, p. viii, cursive in original). When it comes to self-esteem, another list of terms emerges, including “*self-regard, self-reverence, self-accepting, self-respect and self-worth, self-feeling and self-evaluation*” (Hattie, 1992, p. viii, cursive in original). This confusion often results in a wide range of correlation results between self-concept and other constructs. A good illustration of that is provided in the metaanalysis of Hansford and Hattie (1982) that reported correlation of self-concept and achievement varying from $-.77$ to $.96$. This observation emphasizes the importance of careful and detailed description of theoretical constructs under investigation as well as application of appropriate measurement instruments with the aim of obtaining theoretically and practically solid results, which will be given in more detail in the next chapter.

1.1.2 The Definition of Self-Concept

As already outlined above, there is much terminology confusion in the use of self-concept-related terms. Moreover, as to the definition of the term “self-concept”, some authors include both cognitive and affective components speaking of the general perceptions or thoughts *and* feelings (Shavelson et al. (1976, p. 411): “In very broad terms, self-concept is a person’s perception of himself”; Rosenberg (1979, p. 7): “...the totality of the individual’s thoughts and feelings having reference to himself as an object”), others differentiate between self-esteem as an affective (or evaluative (Epstein, 1983)) component of the global self and self-concept as a cognitive (or knowledge (Epstein, 1983)) component (Meyer, 1984).

Bong and Clark (1999) advocate the latter approach; as such clarity in differentiation between the cognitive and affective components is especially important for practical implications. As current research is practically oriented and aims at developing prevention and intervention strategies, it, following Schöne, Dickhäuser, Spinath, and Stiensmeier-Pelster (2003); Bong and Clark (1999), suggests that while self-concept includes the cognitive component, the affective component relates to self-esteem (Schöne et al., 2003). Therefore in this research self-concept should be defined as a sum of cognitive representations of a person about him- or herself (cf. Maier & Pekrun, 2004).

1.1.2.1 School Self-Concept³

Already the multifaceted hierarchical model of Shavelson et al. (1976) reflects the assumption that academic self-concept is a constituent of general self-concept; and refers to the estimation of one’s own abilities in the school context (Brüll, 2010). Lent, Brown, and Gore (1997) define school self-concept as a set of attitudes, beliefs, and perceptions among students about their academic skills and performance. Schöne et al. (2003), in their turn, underlining the cognitive nature of the construct, reduce the definition to a general entity of one’s own thoughts referring to one’s cognitive abilities in achievement situations in the school context⁴ (cf. Schöne et al., 2003, p. 4)

³ or academic self-concept: the terms are often used in the literature interchangeably.

⁴ “*Gesamtheit der Gedanken über die eigenen Fähigkeiten in schulischen Leistungssituationen.*“ (Schöne, Dickhäuser, Spinath, & Stiensmeier-Pelster, 2003, p. 4, cursive in original).

According to Schöne, Dickhäuser, Spinath, and Stiensmeier-Pelster (2002, 2012), the cognitive nature of school self-concept allows its further subdivision into the several sub-constructs (Figure 4):

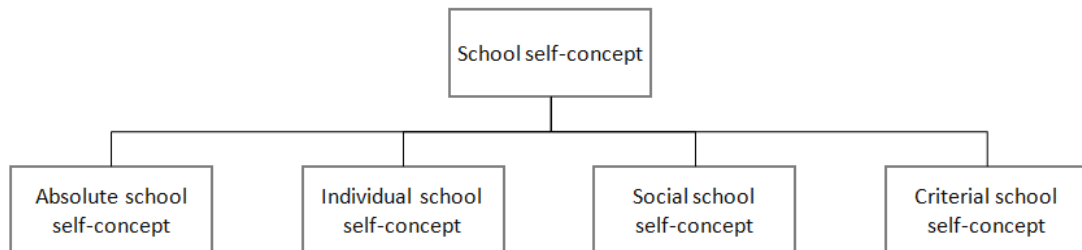


Figure 4. The Structure of School Self-Concept. Adapted from: Schöne, C., Dickhäuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2012). *Skalen zur Erfassung des schulischen Selbstkonzepts - SESSKO*. (2nd rev. ed.) [Scales to assess school self-concept] (p. 10-17). Göttingen, Germany: Hogrefe. Printed with permission of C. Schöne. The original items are in German and are translated for the current work. APA is not responsible for the accuracy of translation.

The subconstructs include: (1) absolute school self-concept, containing most general thoughts concerning abilities of one's own, whereas no comparison to any certain criterion is implied (i.e., such general assertions as "I am talented" or "I am intelligent" (Schöne et al., 2002, 2012) and sub-constructs, that suggest comparison to a certain criterion: (2) social school self-concept, focused on the social comparison to others ("I am more talented than others" or "I am more intelligent than others" (Schöne et al., 2002, 2012)). The construct is rooted in the theory of social comparison processes (Festinger, 1954). High social self-concept is therefore evidence that one ranks his or her own cognitive abilities higher than those of people in the surrounding. Festinger also postulates that social comparison takes place only when more objective criteria are not possible to implement. Therefore another kind of comparison is according to some certain criterion: (3) criterial school self-concept. This kind of comparison plays a great part in the school context, where goals of the studying process are set by the curriculum and in that way the criteria

for comparison are already established (“when I think of things we should be able to do at school, I think I am not intelligent enough” (Schöne et al., 2002, 2012)). High criterial school self-concept is marked by estimation of own abilities beyond the school program. The third comparison perspective contains the temporal aspect, thus comparing own abilities in the present to own abilities in the past: (4) individual school self-concept (“I am much more intelligent now than I used to be” (Schöne et al., 2002, 2012)). The existing literature on the development of school self-concept suggests that children and adolescents prefer this comparison form while addressing their abilities (Nicholls, 1984; Yussen & Kane, 1985). High individual school self-concept therefore is marked by higher own abilities in the present than abilities in the past.

Schöne et al. (2003), who advocate this precise subdivision, assume that though it might be applied to subject-specific school self-concepts, self-concept related problems might be rather found on higher levels of the self-concept hierarchy, and therefore it might make more sense to apply it more generally, without the subject-specific subdivision. Fend (1997) also refers to that point in his work, suggesting that every specific experience is reflected not only on the achievement-related level of the self, but also on its functioning on a higher hierarchy level.

While general self-concept is not necessarily related to academic development, school self-concept is an important determinant of positive educational outcomes, such as effort, aspirations and academic achievement (Green et al., 2006; Green, Liem, Martin, Colmar, Marsh, & McInerney, 2012; Yeung, 2011). Indeed, according to Lyon (1993), one third of the variance in achievement can be accounted for by academic self-perceptions. Moreover, positive school self-concept is predictable for the development of a positive global self-concept (cf. Raufelder et al., 2013). Self-concept is an important protective resource in school setting, which suggests that low school self-concept students are especially vulnerable (Jerusalem, 1993), and makes school self-concept an important factor as well as a desirable outcome of the educational process.

In the current work I speak of school self-concept on a general level and do not address subject-specific self-concepts, which might help obtain more general results, important for further practical development of prevention and intervention strategies. Moreover, because of the reasons outlined above, in this work the absolute and the individual facets of school self-concept are explicitly put forward.

1.1.3. Self-concept in adolescence

According to Erikson's (1959) "Stages of Psychosocial Development", adolescence is an important period for self-development and therefore the advancement in the development of self-concept (Erikson, 1959). Adolescents, as compared to children, learn to separate the facets of their self and estimate their abilities in a more realistic way (Harter, 1999). Despite this general positive development, several studies provide proof that especially during that developmental period self-concept is quite inconsistent in level and stability (Savin-Williams & Demo, 1984; Brinthaupt & Lipka, 2002).

This inconsistency is greatly influenced by changes in physical, social and emotional aspects of an adolescent's life (McInerney & McInerney, 2006). Physically, an adolescent's body undergoes transformation from childhood into puberty (Petersen, 1981). Hormonal changes make influence on physical development and with it the appearance of primary and secondary sexual characteristics (Brinthaupt & Lipka, 2002). Simmons (1987) suggests that these physical changes might have a negative impact on self-perceptions, which might be additionally intensified by a gap between biological and social adulthood typical of Western countries (Brinthaupt & Lipka, 2002).

Socially, the focus of adolescents' social orientation shifts from the family to the surrounding (Harter, 2012; Steinberg & Morris, 2001; Fend, 1998). In this process school life gains in importance, as it becomes the most time-consuming activity as well as provides place for social contacts (Harter, 1996). Teachers take over the part of non-parental role models (Midgley, Feldlaufer, & Eccles, 1989; Raufelder, 2007) while peers serve for comfort and attachment (Rubin, Bukowski, & Laursen, 2009; Steinberg & Morris, 2001). This makes adolescents particularly vulnerable to peer acceptance or rejection (McLachlan, Zimmer-Gembeck, & McGregor, 2010; Sebastian, Viding, Williams, & Blakemore, 2010).

Additionally, this developmental period usually coincides with the time of temporal transition to secondary school, that confronts an adolescent with a number of challenges such as a general increase of the number of social contacts (Friedlmeier, 1993) as well as the adjustment to an increased number of teachers and making friends in a new peer group (Hirsch & Rapkin, 1987; Rosenberg, 1979; Simmons, Blyth, Vancleave, & Bush, 1979), which might be quite challenging for an adolescent. Moreover, the new school structure puts adolescents under the pressure of making choices that might affect future career choices (Fennema & Sherman, 1977).

Emotionally, an adolescent is subject to new demands and expectations of others (Petersen, 1981), which often results in parent-adolescent conflict (Montemayor, 1983) and increase of peer influence (Demo, 1992). New patterns of communication and identification with parents, teachers, and peers affect the self-concept (Coleman & Hendry, 1990).

These changes related to the process of maturation are accompanied by active cognitive development: the sense of self and its qualities becomes more complex, different facets are distinguished, that constructs the self-system (Harter, 1999). School in this respect gains importance as it provides large context for development of self-definitions (Fend, 1997).

This combination of physical, social, emotional and cognitive changes that mutually affect each other (Hattie, 1992) makes (early) adolescence a critical time for the consideration of self-interventions (Brinthaupt & Lipka, 2002), which might improve the adjustment strategies at that complicated period of school transition and keep adolescents from self-concept decline.

1.2. Achievement Motivation

Apart from changes in self-concept, adolescence is a period characterized by a decrease in achievement motivation, perseverance and effort (Singh, 2011) and achievement as well as general decline of positive attitudes towards school (Anderman & Maehr, 1994; Epstein & McPartland, 1976; Harter, 1981; Prawat, Grissom, & Parish, 1979). In educational context, it is generally recognized that self-related beliefs play an important role for academic accomplishments (Zimmerman, 2000). The following chapter provides an overview of the concepts of achievement motivation and its interplay with self-concept and achievement in the school context.

Achievement motivation in the school context can be defined as a driving force that accounts for students' behavior in achievement situations. It determines cognitive, emotional, and behavioral aspects of students' attachment and contribution to the process of education (cf. Tucker et al., 2002). In the course of research on achievement motivation, Murray (1938) is considered to have first provided the definition for the need for achievement. However, general interest to the concept first arose in 1910 (Heckhausen, Schmalt, & Schneider, 1985). The modern research on achievement motivation is largely based on the works of McClelland (1961) and Atkinson (1974). According to McClelland (1985), achievement motivation determines the degree of individuals' difference in their

need to strive to attain rewards, in the form of either physical satisfaction, praise from others, or the feeling of personal mastery. The early motivation theorists suggest that need for achievement plays an important role for one's success and accomplishments, defining achievement motivation as a learned drive that includes two core components: the hope for success and the fear of failure. While hope for success has a clear positive impact on performance, fear of failure might take a passive form, as avoidance of the performance situation, or an active form, as an attempt to improve performance and in this way avoid failure (Brunstein & Heckhausen, 2006). Subsequent research argues that avoidance behavior as a component of achievement motivation comprises several facets that encounter not only fear of failure, but also fear of success (Horner, 1974; Weiner, 1994; Petermann & Winkel, 2007). Fear of success results in avoidance strategies aimed at reducing possibly negative outcomes of own positive accomplishments. In the school context such outcomes might include envy of others to one's results, change of the surrounding (such as changing school or school type among gifted children, who might prefer to stay together with their friends), exclusion from a social group (such as being called a nerd or a teacher's pet) or even bullying (Petermann & Winkel, 2007). This kind of avoidance behavior should especially be taken into account in adolescence, as achievement avoidance might be both a result of rebellion and autonomy desire and a wish not to stand out (Böhnke, 2004). Though this phenomenon might be found among both males and females (Weiner, 1994), some authors claim that females are more subject to it (Horner, 1974; Selling, 2001).

Another important characteristic of achievement motivation is that it comprises not only motivational but also volitional components (Rheinberg, 2004). In fact, in order to gain success a person needs not only achievement motivation, but also self-regulating skills, such as perseverance and effort, that serve as facilitators of achievement situations. In the school context, these volitional components determine continuous work upon a certain task and long-term goal orientation (Brunstein & Heckhausen, 2006). There is evidence that highly motivated students have more perseverance and effort and stick longer to a task even after a break or previous failure as well as make shorter pauses (Rheinberg, 2000).

Since Atkinson and McClelland's revolutionary works, a number of new theories emerged based on the first „learned drive“ assumptions, aiming to understand the determinants of achievement-oriented behavior (among others, the Cognitive Attribution Theory of Motivation and Emotion (Weiner, 1972), the Self-Worth Theory of

Achievement Motivation (Covington & Berry, 1976), the Achievement Goal Theory (Elliot, 1997; Pintrich, 2003), the Self-Determination Theory (Deci & Ryan, 1985; Ryan & Stiller, 1991), the Social-Cognitive Theory (Bandura, 1986; Pajares, 1996; Schunk, 1984), as well as the Goal Orientation Theory (Elliot & McGregor, 2001)). This variety underlines the fact that achievement motivation is a complex and multifaceted construct and is related to many variables rather than a single one.

1.2.1 Self-Determination Theory of Achievement Motivation

In educational research, the Self-Determination Theory (SDT) is widely applied (Deci, Vallerand, Pelletier, & Ryan, 1991; Deci & Ryan, 1985, 1991, 2000). It postulates that motivation is self-determined, volitionally complemented and endorsed by the sense of self (Deci & Ryan, 1991). The three needs that comprise the basis of motivation are competence, relatedness and autonomy (Ryan & Deci, 2000). SDT suggests that there are three types of motivation, depending on the reasons for its emergence: intrinsic motivation, extrinsic motivation and amotivation (Ryan & Deci, 2000). While amotivation may be defined as an absence of motivation and is therefore an undesirable outcome in academic process (Van den Berg & Coetzee, 2014), the two basic motivation types are intrinsic and extrinsic motivation. The distinction between them is particularly important as the type of achievement drive affects performance quality; intrinsic motivation being an especially desirable outcome of the educational processes (Ryan & Deci, 2000).

The peculiarity of intrinsic motivation is that it is driven by an individual's inner needs rather than by external reasons or consequences. When this kind of motivation occurs, the activity itself becomes the reward, so that the individual does not need any supplementary benefits (Deci & Ryan, 1985), which makes intrinsic motivation so desirable in an educational setting. However, it is also a great challenge for a teacher to promote intrinsic motivation within students, as normally school activities are not tailored in a way to motivate students intrinsically (Deci & Ryan, 1985). The possibilities for teachers to promote intrinsic motivation and conversely intensify the degree of academic self-regulation are further developed by Deci and Ryan (1985) into the cognitive evaluation theory (CET), that emphasizes the general positive impact of teacher-student relationships (Grolnick & Ryan, 1989) and work-oriented feedback (Deci, 1975) as well as puts forward the positive effects of autonomy-supportive teaching strategies (Radel, Sarrazin, Legrain, & Wild, 2010; Roth, Assor, Kanat-Maymon, & Kaplan, 2007; Soenens & Vansteenkiste, 2005; Chirkov & Ryan, 2001; Rigby, Deci, Patrick, & Ryan, 1992). In

educational context the promotion of autonomy plays an important part, as self-determined learners proved to perform their task better, show more persistence and effort and consequently aim at higher achievement levels (Ryan & Deci, 2006).

In contrast to intrinsic motivation, extrinsic motivation is characterized by external reasons for an individual's performance. According to the organismic integration theory (OIT) (Ryan & Deci, 2000; Rigby et al., 1992), it might be differentiated according to the level of a student's autonomy or self-determination degree, (1) external regulation, being the most controlling, where students aim either to avoid punishment or achieve rewards; (2) introjected regulation, which implies less control, thus students act to avoid the feelings of guilt or for improvement of contingent self-worth and (3) identified regulation, being the most autonomous of all and fostering students' motivation through inner understanding and acceptance of the aims (Ryan & Deci, 2000). Though as suggested by the SDT, extrinsic motivation has a lower value, while altering the autonomy level the external reward might gain personal value, especially when promoted by positive social relationships in the school context (Ryan, Stiller, & Lynch, 1994; Ryan & Stiller, 1991). Therefore, considering the flexible autonomy levels, this motivation type, in comparison to intrinsic motivation, is relatively easy to manage in the school context.

In sum, according to the SDT, as well as CET and OIT as its integral elements, not only the sense of self, but also social relationships play a significant role for achievement motivation.

1.2.2 Achievement Motivation and Academic Achievement

Apart from the works of Deci and Ryan, decades of research (resulting in various theories mentioned above) prove that achievement motivation and academic achievement are positively correlated (Gottfried, 1990; Lau & Chan, 2001; Sikhwari, 2004; Ahmed & Bruinsma, 2006; McInerney, 2001). Singh (2011) reports a reciprocal relation between these two variables, which suggests that high achievement levels are influenced not only by one's intelligence, but also motivational, emotional and situational factors (Petermann & Winkel, 2007). In the school context, a higher level of motivation and engagement leads not only to better achievement, but also reduces the number of school dropouts (Kushmand, Sieber, & Harold, 2000), which makes it a desirable outcome of prevention and intervention strategies especially during the transitional period of adolescence.

Though recent research indicates an association between self-concept and achievement motivation (Marsh & Martin, 2011; Areepattammannil, 2012), for decades

self-concept has been widely researched only in association with achievement (Wylie et al., 1979). Interestingly, while some authors report the association between self-concept and achievement (Marsh, Relich, & Smith, 1983; Marsh, Smith, Barnes, & Butler, 1983), others (Williams, 1973; Hansford & Hattie, 1982) claim that there is little or no connection between the variables. This phenomenon however might be explained by little or no differentiation between the self-related variables, use of both global and more specific self-concepts, and underdevelopment as well as inconsistent application of different measurement scales (Harter, 1992, 1996).

The next chapter provides more detail about the development of the self-concept and achievement-related research.

1.2.3 Self-Concept, Achievement and Achievement Motivation in the School Context

The association between self-concept and achievement has long been an important research issue (Wylie et al., 1979, pp. 361-372 for overview of older studies). However, the earlier research was focused mostly on the direction of the influence (if it is self-concept that influences achievement or achievement that has an impact on self-concept) resulting in three models that are further discussed in this chapter.

(1) The Skill Development Model

The skill development model suggests that prior academic achievement produces a positive effect on self-concept (Calsyn & Kenny, 1977; Helmke & van Aken, 1995). Transferred to the school context, this model suggests that better achievement result (being either grades or verbal appraisal) might affect self-concept in a positive way, but not the other way round. In practice, this approach results in recommendations for teachers to focus on constructive feedback, based on results, but is not necessarily expressed in a way to make a student feel good about the accomplished work (Barker, Dowson, & McInerney, 2005).

(2) The Self-Enhancement Model

In turn, the self-enhancement model argues that a high school self-concept influences academic achievement (Brookover et al., 1964; Jones & Grieneeks, 1970) and therefore self-concept should stand in an educator's primary focus. Similar to the skill development model, the influence goes only in one direction. In practical terms, teacher's feedback that aims to make a student feel better rather than focus on results of his or her work is

suggested to be more profitable (Barker et al., 2005). There is evidence that especially this approach is more prevalent in educational research (Gorrell, 1990).

(3) The Reciprocal Effects Model

Finally, Marsh (1990) integrated the two abovementioned unidimensional approaches into the reciprocal effects model, postulating that school self-concept and achievement are cyclically related and reinforce each other. The model suggests that a higher self-concept would result in a rise of academic achievement, and higher levels of academic achievement would lead to an improvement of self-concept (Barker et al., 2005).

Valentine and DuBois (2005), searching for the practical use of the association of self-concept and achievement found support for the reciprocal effects model, starting with the self-concept. However, they noted that one of the limitations of the model is non-inclusion of potentially important mediators in the association of self-related beliefs and achievement. Among other factors they pointed at achievement motivation that could be an important mediator and reported the lack of research in this aspect. This remark resulted in later works of Areepattamannil (2012) and Guay, Ratelle, Roy, and Litalien (2010), who reported the mediating role of achievement motivation in the association between school self-concept and academic achievement. In addition to that, the findings of Rodrigues (2009) suggested that academic self-concept could determine motivational orientation among students. Cokley, Bernard, Cunningham, and Motoike (2001) in turn reported that academic self-concept was positively and significantly correlated with intrinsic motivation. Michie, Glachan, and Bray (2001) in their research stated that students with high levels of academic self-concept had more intrinsic motivation to proceed with higher education.

In sum, the abovementioned works suggest that not only the associations of self-concept and achievement (Green et al., 2006) are important to be both considered in educational research, as effects produced only on one of these factors would be short-lived, but also indicate that school self-concept and achievement motivation should also be taken into account in educational research. Moreover, the existing findings indicate that self-concept and achievement motivation are associated in a way that self-concept stands first in this association due to its intrinsic motivational properties. In addition to that, positive direct as well as indirect association of self-concept and achievement should be considered throughout the process of school education, being both quantitative (higher achievement results) and qualitative (according to SDT) in nature and therefore corresponding with widely set educational goals (Craven et al., 2003)

However, especially in the development of intervention strategies it is important to consider that achievement motivation is social in nature, and interpersonal interactions can either reduce or facilitate engagement levels (Maehr, 2008). Therefore, in the school context for most adolescent students positive social relationships support both academic achievement and motivation (Wentzel, Battle, Russell, & Looney, 2010; Wentzel, 1998). This issue will be the subject of the next chapter.

1.3 Social Relationships at School

As already mentioned in Chapter 1.1.3, adolescence is accompanied by both the processes of transition and adjustment. The transition from primary to secondary school contributes to the changes in students' perception of the environment. The new organizational structures seem more impersonal and formal, and perceived as more evaluative and competitive (Harter, 1996). The new context of the classroom setting, in turn, provides a new social context that has a great impact on psychological adjustment. At the same time, the role of both teacher and peer groups increases and eventually begins to replace parents as a general source of information about the self (Burns, 1979; Petersen, 1981). Therefore, both teachers and peers play a crucial role in self-concept development as well as in motivational processes at that period of life.

Burns (1979) claims that the reciprocal relation between self-concept and academic achievement (reported in Chapter 1.2) is in fact more complex and, concerning the social perspective, should include the interpolation of feedback and expectations, which – inserted into that association – would produce a circular effect. In that process, a student's evaluation of self would form his or her self-concept, which would influence his or her consequent performance, and, in turn, the teachers' and parents' evaluations. These evaluations would affect the expectations of others from the student and result in verbal as well as non-verbal communication, which, in turn, would have an impact on the student's perception of expectations and evaluations of others and, with it, his or her self-concept. Though it cannot be strictly defined, where the starting point of this complex process is, it can be claimed that the items reinforce one another.

While Burns (1979) generally suggests this model for school children, involving only parents and teachers as reference groups, especially in adolescence peers gain in importance and start to take significant impact on adolescents' self-perception (Furman & Buhrmester, 1992) and therefore should also be considered as an important factor in the self-accessing process. The next chapter provides extensive support for this assumption.

1.3.1 Student-Student Relationships

As already mentioned above, after the transition from primary to secondary school students have to adjust to new surroundings. After the transition peer groups increase in both size and complexity (Crockett, Losoff, & Petersen, 1984). Moreover, the appearance of new different peer groups produces a challenge of coordinating old and new friendships within one or several groups (Azmitia, Kamprath, & Linnet, 1998), which might result in either maladaptation or feeling of exclusion (Azmitia, Cooper, & Brown, 2009).

The definition of a “peer group” may refer to different notions. Firstly, it might stand for a small group of similarly aged close friends. Secondly, it might refer to a group of people of same age, but who are not necessarily friends. Thirdly, a peer group might denote a group of relative strangers, who share the same activity (cf. Coleman & Hendry, 1990). In the school setting, a peer group comprises all three abovementioned aspects, referring to friends, classmates or schoolmates from different classes in a school.

Research proves that – in comparison to children – adolescents are more involved and intimate with peers while sharing their thoughts and feelings (Hartup, 1983; Youniss & Smollar, 1985; Coleman & Hendry, 1990). This makes the relationships with peers less distant and helps satisfy adolescents’ affiliative needs (Collins & Laursen, 2004; Harter, 2012). In general, adolescents increasingly rely on their friends for intimacy, support, understanding, advice and comfort (Furman & Buhrmester, 1992; Juvonen & Wentzel, 1996; Kindermann, 1993; Rubin, Bukowski, & Laursen, 2009; Wentzel, 2009a, 2009b; Wentzel, Battle, Russell, & Looney, 2010) – functions that were former performed by the family (Douvan & Adelson, 1966). As a result, especially in adolescence more emphasis is put on the peer group that also takes over a part of the functions that parents used to perform.

Friendships in adolescence become more intense, close friends provide emotional support (Azmitia, et al., 2009), help confirm one’s own beliefs (Duck, 1973) as well as grant help and assistance in learning process (Seiffige-Krenke, 1990), which has positive effects on students’ academic motivation and achievement (Birch & Ladd, 1997; Kindermann & McCollman, 1996; Achermann et al., 2006). Students who display positive relationships with their peers are more engaged in school activities and reveal more positive attitudes towards school (Furrer & Skinner, 2003; Crosnoe, Cavanagh, & Elder, 2003). Also the problem-solving behavior is affected by peers: If problems with teachers arise, the adolescents first discuss them with parents (decreasing throughout the period of

adolescence) and peers (increasing throughout the adolescent years). First in late adolescence they opt for direct discussion of problems with the teacher (Seiffge-Krenke, 1990).

Despite all benefits, the influence of peers in adolescence should be regarded critically. The literature research provides evidence that rejection from a peer group, especially in adolescence produces a negative effect on engagement and achievement at school (Buhs, Herald, & Ladd, 2006). Troubled relationships with peers might have such consequences as maladjustment, poor performance and eventually lead to school dropout (Buhs et al., 2006; Bukowski, Laursen, & Hoza, 2010; Schwartz, Gorman, Nakamoto, & Toblin, 2005). Peer pressure that increases in adolescence and intensifies between the 8th and the 9th grades (Steinberg, Brown, & Dornbush, 1996) might also result in negative consequences. After all, peers not only provide support, but also contribute to higher competition levels in secondary school while providing another (and also a larger) reference group to estimate one's own progress (Harter, 1996), which might produce a decrease in self-concept as well as a decline in achievement motivation, giving to a student a feeling of being a "small fish in a big pond" (Marsh, 1987).

In sum, especially in adolescence, relationships with peers have great impact on general well-being, learning and motivation at school (Raufelder, Jagenow, Drury, & Hoferichter, 2013; Wentzel, Battle, Russel, & Looney, 2010; Seiffge-Krenke, 1990). Another type of relationships that gains in importance in this period is the teacher-student relationships.

1.3.2 Teacher-Student Relationships

After the shift to secondary school, the relations to teachers gain distance and become more impersonal. Not only a student gets an increased amount of teachers in different subjects, but also a teacher gets several classes of students for his or her subjects. The distance impacts the perception of teachers as less friendly and less supportive (Hawkins & Berndt, 1985; Harter, 1996). At the same time, a student's inner need for emotional support of a non-parent adult increases (Eccles & Midgey, 1990; Raufelder, 2007; Raufelder, Bukowski, & Mohr, 2013), and the "shift away from the family" (cf. Hattie, 1992, p. 135), occurs in the form from parents to teachers.

Teachers in secondary schools are responsible for providing instruction, control and evaluation in the learning progress. The feedback that originates from this process has a major impact on achievement motivation and often addresses not only the learning

progress but includes general approval or disapproval of a student as a person (Harter, 1996; Birch & Ladd, 1997) which, according to SDT (Deci et al., 1991), not only affects intrinsic motivation, but also impacts a student's sense of identity (Alerby & Hertting, 2007; Jennings & Greenberg, 2009), which as a result might produce changes in self-concept (Burns, 1979).

A great amount of recent works report that warm and supportive relationships with teachers contribute to students' engagement, educational aspirations, intrinsic motivation, school self-concept as well as general well-being, lower levels of anxiety and mental health (Huges, Wu, Kwok, Villarreal, & Johnson, 2012; Katz, Kaplan, & Gueta, 2010; Marchand & Skinner, 2007; Deci & Ryan, 2000; Wentzel, 1998; Furrer & Skinner, 2003; Goodenow, 1993; Skinner & Belmont, 1993). For most adolescent students positive and supportive social relationships with teachers support academic achievement and motivation and in that way provide not only learning support, emotional support, help and assistance in the process of studying, but also contribute to the feeling of the safe environment, which is especially important during the period of school transition (Wentzel et al., 2010; Wentzel, 1998). In contrast to that, negative relationships with teachers and perception of teachers as cold, evaluative and controlling lead to lower intrinsic motivation levels, less engagement in school activities and potential school dropout (Brophy & Good, 1974; Ryan & Deci, 2000; Skinner & Belmont, 1993; Roeser & Eccles, 1998).

Overall, the literature research suggests that social relationships in secondary school might be a challenge for adolescents' adjustment particularly during the transitional and post-transitional period, as well as provide great opportunities for prevention strategies. Therefore, accounting for the role of social relationships in the association of self-concept and achievement motivation might finally shed light on practical development of possible intervention strategies.

1.4 School Education in Germany

It is important to make a note on the German educational system. Educational policies vary across the 16 federal states (“Länder”); the Conference of the Ministers of Education and Cultural Affairs of the Länder (KMK) ensures the comparability of educational standards across the country. Compulsory school education begins at the age of 6 in a primary school (“Grundschule”), and comprises from 4 to 6 years in mixed-ability classes. In Brandenburg, where the research was conducted, the primary education takes 6 years. After that, at the age of 10 or 12, children take part in streaming according to the teachers’ recommendation, based on their marks and test results. Therefore, the ability of a student at the age of 10 or 12, and the teacher’s assessment at the end of primary school have an enormous influence on the selection process and impact studies and career choices (Schnepf, 2002). This results in both positive and negative effects associated with the period of transition, addressing one’s individuality, self-concept and mental health (Griebel & Niesel, 2004).

The four possible options for further school education are normally “Hauptschule”, “Realschule”, “Gymnasium” or “Gesamtschule”. In the state of Brandenburg, where the research was conducted, “Hauptschule” and “Realschule” are combined and comprise the “Oberschule” (also called “Gemeinschaftschule” or “Sekundarschule”). For the current research the subdivision between the “Gymnasium” and the “Oberschule” are of particular importance. While “Gymnasium” as a school form is aimed at high-ability students and provides a wide variety of opportunities for further career choices, including entry qualification for university studies, “Oberschule” is tailored for low-ability students, suggesting the acquisition of the basics for future praxis-oriented professional education (Ministerium für Bildung, Jugend und Sport, 2014). “Gesamtschule”, in contrast to other school types, provides the opportunity to continue education within one single school for students with different ability levels. The students who participated in the research attended either “Oberschule” or “Gymnasium”.

1.5 Desideratum

The current PhD thesis makes a contribution to already existing research by (a) using a combination of qualitative and quantitative research methods, (b) using a large sample size of German-speaking students, (c) accounting for the role of both teacher and peer groups in the association of school self-concept and achievement motivation, (d) taking

into account different motivational aspects, as well as (e) considering potential differences between students with high vs. students with low school self-concept.

Firstly, the current PhD thesis in comparison to many prior works (for critique see: Wylie et al., 1974, 1979; Hattie, 1992) very carefully distinguishes between self-related terms and provides precise definitions of objects of investigation. Moreover, it combines the specific school self-concept issues and determinants of achievement motivation, whereas previous studies either focused on general school self-concept, without differentiating among its facets or accounting for high and low self-concept students (cf., Areepattammannil, 2012), or put emphasis on achievement, subdividing students into high- and low-achiever groups without addressing the self-concept issue at all (cf., Crumpton & Gregory, 2011). However, the reciprocal effects model (Marsh, 1990; Marsh & Köller, 2003) as well as the existing research on achievement and achievement motivation (Gottfried, 1990; Lau & Chan, 2001; Sikhwari, 2004; Ahmed & Bruinsma, 2006) suggests that possible prevention strategies aimed at only one component will not produce a long-term effect.

Secondly, a combination of both modern quantitative (latent mean comparison, multi-group CFA (Brown, 2006; Aiken, Stein, & Bentler, 1994; Dimitrov, 2006)) and qualitative (semi-structured interviews (Mayring, 2002)) methods accounts for possible mistakes and allows not only the acquisition of reliable results, but also investigation of the issue in-depth. Moreover, various statistical procedures applied in combination with the conducted interviews allow method triangulation (Flick, 2004) and guarantee high quality research. In addition, the large sample as well as participation of students from different school types allows generalizability of findings for German adolescent students in Brandenburg.

In addition, prior research proved to be not accounting for the whole complexity of the association of school self-concept, social relationships and achievement motivation, and either did not focus on social relationships while investigating the associations between self-concept and achievement (Lyon, 1993; Gerardi, 2005; Green et al., 2012) or did not account for self-concept while regarding the association of social relationships and achievement (Hughes et al., 2012) or social relationships and motivation (Federici & Skaalvik, 2013).

Thirdly, another asset of the study is that it takes account of differentiated roles (relational and motivational) of both peer and teacher groups in the school context. In

contrast, the majority of previous studies address the impact of either peers or teachers (Wentzel, Donlan, & Morrison, 2012).

The account of various research methods as well as a combination of existing research on school self-concept, achievement motivation and social relationships in the school context in one study as well as a large sample size make this research unique and suggest the direct practical implication of findings in the school context.

1.6 General Design of the current Ph.D. study

Determined by the literature research outlined above, the central research questions of this dissertation are: **do socio-motivational relationships mediate the association between school self-concept and achievement motivation among adolescent students? If yes, are they equally important for both high and low self-concept students, and if the groups differ in their perceptions, then in what respect?**

The studies that built the core of the present thesis explore different aspects of that question based on the data collected in secondary schools ($N = 23$) in Brandenburg, Germany. The participants ($N = 1088$, Male: 501; Female: 587) 12 to 15 year-old 7th and 8th grade students ($M_{age} = 13.7$; $SD = .53$), provided self-report data that was used for first research steps (first and second study). Second data collection in 2013 (845 participants from the initial 2011 sample; $M_{age} = 15.3$; $SD = .49$; Male: 380; Female: 465) helped identify 36 participants with stable (over two years) absolute school self-concept (Schoene et al., 2002), who took part in semi-structured interviews of the third study. 18 of them according to their scores had a high school self-concept; other 18 were identified as the low school self-concept group. Both boys and girls were represented: 7 boys, 11 girls ($M_{Age} = 16.3$, $SD = .53$) in the high school self-concept group and 10 boys, 8 girls ($M_{Age} = 16.5$, $SD = .55$) in the low school self-concept group. The interviews included questions on motivation, social relationships at school, and general attitudes towards school and lasted from 20 to 30 minutes each.

The first quantitative study was designed to test the following hypotheses: that (1) there exist a) a positive association between individual school self-concept, socio-motivational support and achievement drive, perseverance and effort; b) a negative association between individual school self-concept and fear of success as well as between socio-motivational support variables and fear of success. Additionally, (2) it was supposed that socio-motivational support would function as a mediator in the association between

individual school self-concept and achievement motivation. The results showed that the teacher-student relationships as well as teachers as positive motivators indeed mediated the association between individual school self-concept and achievement motivation. In contrast, neither peers as positive motivators nor the student-student relationship variables acted as mediators in this association.

The second quantitative study assumed (1) that students possessing (a) low absolute school self-concept and (b) high absolute school self-concept would differ in their perception of teacher-student relationships, teachers as positive motivators, student-student relationships, peers as positive motivators, as well as in perseverance and effort and achievement drive. It was (2) also hypothesized that positive teacher-student and student-student relationships, as well as perceptions of teachers and peers as positive motivators would predict greater perseverance and effort and achievement drive, thereby the relationship being stronger for students with high school self-concept. The results showed that students with a high absolute school self-concept reported higher levels of socio-motivational support than students with a low absolute school self-concept, whereas teachers played a more important role in motivating low school self-concept students.

The objective of the third study was to find out (1) if adolescent students' perception of their relationships with peers and teachers differed depending on the level of their absolute school self-concept. This final step was aimed to estimate the specific influence of social actors on motivational, learning and educational processes. The results revealed that while students with a high school self-concept attributed equal importance to the emotional support provided by peers and teachers, students with a low school self-concept prioritized the learning support provided by their peers, and expressed a desire to be granted multiple attempts at a difficult task in order to have an opportunity to improve their grades.

The three studies expand one another and complement the results of the previous research. The detailed description of each study is provided in Chapters 2, 3, and 4. Chapter 5 serves for generalization and discussion of the results.

1.7 References

- Ahmed, W., & Bruinsma, M. (2006). A structural model of self-concept, autonomous motivation and academic performance in cross-cultural perspective. *Electronic Journal of Research in Educational Psychology, 4*(3), 551–576.
- Anderman, E. M., & Maehr, M. L. (1994). Motivation and schooling in the middle grades. *Review of Educational Research, 64*(2), 287–309. doi: 10.3102/00346543064002287
- Areepattammannil, S. (2012). Mediation role of academic motivation in the association between school self-concept and school achievement among Indian adolescents in Canada and India. *Social Psychology of Education: An International Journal, 15*, 367–386. doi: 10.1007/s11218-012-9187-1
- Arnett, J. J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist, 54*(5), 317–326. doi: 10.1037/0003-066X.54.5.317
- Asparouhov, T. (2005). Sampling weights in latent variable modeling. *Structural Equation Modeling 12*(3), 37–41. doi: 10.1073/pnas.0910967107
- Atkinson, J. W. (1974). *A theory of achievement motivation*. New York, NY: Wiley.
- Avenarius, H., & Jeand'Heur, B. (1992). *Elternwille und staatliches Bestimmungsrecht bei der Wahl der Schullaufbahn: die gesetzlichen Grundlagen und Grenzen der Ausgestaltung von Aufnahme- beziehungsweise Übergangsverfahren für den Besuch weiterführender Schulen*. Berlin, Germany: Duncker & Humblot.
- Azmitia, M., Kamprath, N. A., & Linnet, J. (1998). Intimacy and conflict: The dynamics of boys' and girls' friendships during middle childhood and early adolescence. In L. H. Meyer, H.-S. Park, M. Grenot-Scheyer, I. S. Schwarz, & B. Harry (Eds.), *Making friends: The influences of culture and development* (pp. 171–187). Baltimore, MD: Brookes Publishing.
- Azmitia, M., Ittel, A., & Radmacher, K. (2005). Narratives of friendship and self in adolescence. *New Directions for Child and Adolescent Development, 107*, 23–29. doi: 10.1002/cd.119
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Barker, K. L., Dowson, M., & McInerney, D. M. (2005, November). *Effects between motivational goals, academic self-concept and academic achievement: What is the causal ordering?* Paper presented at the Australian Association for Research in Education

- (AARE), Parramatta, Australia.
- Böhnke, K. (2004). Du Streber! *Psychologie Heute*, 31, 34–37.
- Bong, M., & Clark, R. (1999). Comparisons between self-concept and self-efficacy in academic motivation research. *Educational Psychologist*, 34(3), 139–153.
doi: 10.1207/s15326985ep3403_1
- Bracken, B. A. (1996). *Handbook of self-concept: Developmental, social, and clinical considerations*. Oxford, England: John Wiley & Sons.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. doi: 10.1191/1478088706qp063oa
- Brinthaupt, T. M., & Lipka R. P. (Eds.) (2002). *Understanding early adolescent self and identity: Applications and interventions*. Albany, NY: State University of New York Press.
- Brookover, W. B., Thomas, S., & Paterson, A. (1964). Self-concept of ability and school achievement. *Sociology of Education*, 37(3), 271–278. Retrieved from:
<http://www.jstor.org/stable/2111958>
- Brüll, M. (2010). *Akademisches Selbstkonzept und Bezugsgruppenwechsel: Einfluss spezieller Förderklassen bei hochbegabten Schülern*. Göttingen, Germany: Hogrefe.
- Brunstein, J., & Heckhausen, H. (2006). Leistungsmotivation. In J. Heckhausen & H. Heckhausen (Eds.), *Motivation und Handeln* (pp. 143–187). Heidelberg, Germany: Springer.
- Buhs, E., Herald, S., & Ladd, G. (2006). Peer exclusion and victimization: Processes that mediate the relation between peer group rejection and children's classroom engagement and achievement. *Journal of Educational Psychology*, 98, 1–13. doi: 10.1037/0022-0663.98.1.1
- Bukowski, W. M., Laursen, B., & Hoza, B. (2010). The snowball effect: Friendship moderates escalation in depressed affect among avoidant and excluded children. *Development and Psychopathology*, 22, 749–757. doi: 10.1017/S095457941000043X
- Burns, R. B. (1979). *The self concept in theory, measurement, development and behaviour*. London, UK: Longman Group Limited.
- Burns, R. B. (1982). *Self-concept development and education*. London, UK: Holt, Rinehart & Winston.
- Byrne, B. M. (1984). The general/academic self-concept nomological network: A review of construct validation research. *Review of Educational Research*, 54(3), 427–456. doi:

10.3102/00346543054003427

- Calsyn, R., & Kenny, D. (1977). Self-concept of ability and perceived evaluations by others: Cause or effect of academic achievement? *Journal of Educational Psychology*, *69*(2), 136–145. doi: 10.1037/0022-0663.69.2.136
- Chirkov, V. I., & Ryan, R. M. (2001). Parent and teacher autonomy-support in Russian and U.S. adolescents: Common effects on well-being and academic motivation. *Journal of Cross-Cultural Psychology*, *32*(5), 618–635. doi: 10.1177/0022022101032005006
- Clark, P. (1995). Risk and resiliency in adolescence. The current status of research on gender differences. *Equity Issues*, *1*, 2–13. Retrieved from: <http://files.eric.ed.gov/fulltext/ED387714.pdf>
- Chen, Y., Thompson, M., Kromrey, J., & Chang, G. (2011). Relations of student perceptions of teacher oral feedback with teacher expectancies and student self-concept. *The Journal of Experimental Education*, *79*, 452–477. doi: 10.1080/00220973.2010.547888
- Christ, O., & Schlüter, E. (2012). *Strukturgleichungsmodelle mit Mplus. Eine praktische Einführung*. München, Germany: Oldenbourg.
- Cokley, K. O., Bernard, N., Cunningham, D., & Motoike, J. (2001). A psychometric investigation of the academic motivation scale using a United States sample. *Measurement and Evaluation in Counseling and Development*, *34*(2), 109–119.
- Coleman, J. C., & Hendry, L. (1990). *The nature of adolescence*. London, UK: Routledge.
- Collins, W. A., & Laursen, B. (2004). Changing relationships, changing youth: Interpersonal contexts of adolescent development. *Journal of Early Adolescence*, *24*, 55–62
doi: 10.1177/0272431603260882
- Cooley, C. H. (1902). *Human nature and the social order*. New York, NY: Scribners.
- Covington, M. V. (1984). The self-worth theory of achievement motivation: Findings and implications. *The Elementary School Journal*, *85*, 4–20. doi: 10.1086/461388
- Covington, M. V. (1992). *Making the grade: A self-worth perspective on motivation and school reform*. New York, NY: Cambridge University Press.
- Covington, M. V. (1998). *The will to learn: A guide for motivating young people*. New York, NY: Cambridge University Press.
- Covington, M. V. (2000). Goal theory, motivation and school achievement: An integrative review. *Annual Review of Psychology*, *51*, 171–200. doi: 10.1146/annurev.psych.51.1.171
- Covington, M. V., & Berry, R. G. (1976). *Self-worth theory and school learning*. New York, NY: Holt, Rinehart & Winston.

- Covington, M. V., & Dray, E. (2002). The developmental course of achievement motivation. A need-based approach. In A. Wigfried & J. Eccles (Eds.), *Development of achievement motivation* (pp. 33–56). San Diego, CA: Academic Press.
- Craven, R. G., Marsh, H. W., & Burnett, P. (2003). Cracking the self-concept enhancement conundrum: A call and blueprint for the next generation of self-concept enhancement research. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *International advances in self research* (Vol. 1, pp. 91–126). Greenwich, CT: Information Age Publishing.
- Craven, R. G., & Marsh, H. W. (2005). Dreaming futures: An empirical analysis of indigenous australian students' aspirations, self-concepts and realities. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *New frontiers for self research* (Vol. 2, pp. 211–232). Greenwich, CT: Information Age Publishing.
- Crockett, L. J., Losoff, M., & Petersen, A. C. (1984). Perceptions of the peer group and friendship in early adolescence. *Journal of Early Adolescence*, *4*(2), 155–181.
doi: 10.1177/0272431684042004
- Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*, *18*, 105–115. doi: 10.1037/h0030644
- Deci, E. L. (1975). *Intrinsic motivation*. New York, NY: Plenum.
- Deci, E. L., & Cascio, W. F. (1972, April). *Changes in intrinsic motivation as a function of negative feedback and threats*. Paper presented at the meeting of the Eastern Psychological Association, Boston.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.
- Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska symposium on motivation. Perspectives on motivation* (pp. 237–288). Lincoln, NE: University of Nebraska Press.
- Deci, E. L., & Ryan, R. M. (2000). The what and why of goal pursuits: Human needs and the self-determination of behaviour. *Psychological Inquiry*, *11*(4), 227–268.
doi: 10.1207/S15327965PLI1104_01
- Deci, E. L., Vallerand, L. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist*, *26*(3), 325–346.
doi: 10.1080/00461520.1991.9653137
- Demo, D. H. (1992). The self-concept over time: Research issues and directions. *Annual Review*

of Sociology, 18, 303–326. Retrieved from:

<http://www.jstor.org/stable/2083456>

- Douvan, E., & Adelson, J. (1966). *The adolescent experience*. New York, NY: Wiley.
- Duck, S. W. (1973). Personality similarity and friendship choice: Similarity of what, when? *Journal of Personality*, 41(4), 543–558. doi: 10.1111/j.1467-6494.1973.tb00110.x
- Eccles, J. S., & Midgley, C. (1990). Changes in academic motivation and self-perceptions during early adolescence. In R. Montemayor, G. R. Adams, & T. P. Gullotta (Eds.), *Advances in adolescent development: From childhood to adolescence* (pp. 134–155). Newbury Park, CA: Sage.
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & MacIver D. (1993). Development during adolescence: the impact of stage-environment fit on young adolescents' experience in schools and in family. *American Psychologist*, 48(2), 90–101. doi: 10.1037/0003-066X.48.2.90
- Eccles, J. S, Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology. Social, emotional and personality development* (Vol. 3, pp. 1017–1096). New York, NY: Wiley.
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109–132. doi: 10.1146/annurev.psych.53.100901.135153
- Elliot, A. J. (1997). Integrating the “classic” and the “contemporary” approaches to achievement motivation: A hierarchical model of approach and avoidance achievement motivation. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 143–179). Greenwich, CT: JAP Press.
- Elliot, A. J., & McGregor, H. (2001). A 2x2 achievement goal framework. *Journal of Personality and Social Psychology*, 80(3), 501–519. doi: 10.1037/0022-3514.80.3.501
- Ellis, L. A., Marsh, H. W., & Craven, R. G. (2005). Navigating the transition to adolescence and secondary school: A critical evaluation of the impact of peer support. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *International Advances in Self Research* (Vol. 2, pp. 329–355). Greenwich, CT: Information Age Publishing.
- Epstein, J., & McPartland, J. M. (1976). The concept and measurement of the quality of school life, *American Educational Research Journal* 13, 15–30.
doi: 10.3102/00028312013001015
- Epstein, S. (1973). The self-concept revisited: Or a theory of a theory. *American Psychologist*, 28(5), 404–416. doi: 10.1037/h0034679

- Epstein, S. (1983). The unconscious, the preconscious, and the self-concept. In J. Suls & A. Greenwald (Eds.), *Psychological perspectives on the self* (Vol. 2, pp. 219–247). Hillsdale, NJ: Erlbaum.
- Erikson, E. (1959). *Identity and the life cycle*. New York, NY: Norton.
- Federici, R. A., & Skaalvik, E. M. (2013). Students' perceptions of emotional and instrumental teacher support: Relations with motivational and emotional responses. *International Education Studies*, 7, 21–36. doi: 10.5539/ies.v7n1p21
- Fend, H. (1997). *Der Umgang mit Schule in der Adoleszenz*. Bern, Switzerland: Huber.
- Fend, H. (1998). *Eltern und Freunde. Soziale Entwicklung im Jugendalter*. Bern, Switzerland: Huber.
- Fennema, E., & Sherman, J. (1977). Sex-related differences in mathematics achievement, spatial visualization and affective factors. *American Educational Research Journal*, 14, 51–71. doi: 10.3102/00028312014001051
- Festinger, L. (1954). A theory of social comparison process. *Human Relations*, 7(2), 117–140. doi: 10.1177/001872675400700202
- Flick, U. (2004). Triangulation. Eine Einführung. In R. Bohnsack, C. Lüders, & J. Reichertz, (Hrsg.), *Reihe Qualitative Sozialforschung* (Bd. 12, S. 7-101). Wiesbaden, Germany: VS.
- Friedlmeier, W. (1993). *Entwicklung von Empathie, Selbstkonzept und prosozialem Handeln in der Kindheit*. Konstanz, Germany: Hartung-Gorre.
- Furman, W., & Buhrmester, C. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development*, 63, 103–105. doi: 10.1111/j.1467-8624.1992.tb03599.x
- Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology*, 95, 148–162. doi: 10.1037/0022-0663.95.1.148
- Gerardi, S. (2005). Self-concept of ability as a predictor of academic success among urban technical college students. *The Social Science Journal*, 42, 295–300. doi: 10.1016/j.soscij.2005.03.007
- Goodenow, C. (1993). Classroom belonging among early adolescent students: Relationships to motivation and achievement. *Journal of Early Adolescence*, 13, 21–43. doi: 10.1177/0272431693013001002
- Gorrell, J. (1990). Some contributions of self-efficacy research to self-concept theory. *Journal of Research and Development in Education*, 23(2), 73–81.

- Gottfried, A. (1990). Academic intrinsic motivation in young elementary school children. *Journal of Educational Psychology*, 82(3), 525–538. doi: 10.1037/0022-0663.82.3.525
- Green J., Liem, G. A. D., Martin, A. J., Colmar, S., Marsh, H. W., & McInerney, D. M. (2012). Academic motivation, self-concept, engagement, and performance in high school: Key processes from a longitudinal perspective. *Journal of Adolescence*, 35, 1111–1122. doi: 10.1016/j.adolescence.2012.02.016
- Green, J., Nelson, G., Martin, A. J., & Marsh, H. W. (2006). The causal ordering of self-concept and academic motivation and its effect on academic achievement. *International Education Journal*, 7(4), 534–546. Retrieved from: <http://ehlt.flinders.edu.au/education/iej/articles/v7n4/green/paper.pdf>
- Griebel, W., & Niesel, R. (2004). *Transitionen. Fähigkeit von Kindern in Tageseinrichtungen fördern, Veränderungen erfolgreich zu bewältigen*. Weinheim, Germany: Beltz.
- Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in schools. *Journal of Educational Psychology*, 81(2), 143–154. doi: 10.1037/0022-0663.81.2.143
- Guay, F., Ratelle, C. F., Roy, A., & Litalien, D. (2010). Academic self-concept, autonomous academic motivation, and academic achievement: Mediating and additive effects. *Learning and Individual Differences*, 20, 644–653. doi: 10.1016/j.lindif.2010.08.001
- Guimond, S., Chatard, A., Martinot, D., Crisp, R., & Redersdorf, S. (2006). Social comparison, self-stereotyping, and gender differences in self-construal. *Journal of Personality and Social Psychology*, 90, 221–242. doi: 10.1037/0022-3514.90.2.221
- Hansford, B. C., & Hattie, J. A. (1982). The relationship between self and achievement/performance measures. *Review of Educational Research Spring*, 52, 123–142. Retrieved from: <http://www.jstor.org/stable/1170275>
- Harackiewicz, J. M. (1979). The effects of reward contingency and performance feedback on intrinsic motivation. *Journal of Personality and Social Psychology*, 37(8), 1352–1363. doi: 10.1037/0022-3514.37.8.1352
- Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, 17(3), 300–312. doi: 10.1037/0012-1649.17.3.300
- Harter, S. (1996). Teacher and classmate influences on scholastic motivation, self-esteem, and level of voice in adolescents. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation – Understanding children's school adjustment* (pp. 11–42). New York, NY: Cambridge

University Press.

- Harter, S. (1999). *The construction of the self: A developmental perspective*. New York, NY: Guilford.
- Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations*. New York, NY: Guilford.
- Hartup, W. W. (1983). Peer relations. In P. H. Mussen (Ed.), *Handbook of child psychology: Socialization, personality, and social development* (Vol.4, pp. 103–196). New York, NY: Wiley.
- Hattie, J. (1992). *Self-concept*. Hillsdale, NJ: Erlbaum.
- Hay, I., Ashman, A. F., & Van Kraayenoord, C. E. (1998). Educational characteristics of students with high or low self-concept. *Psychology in the Schools*, 35, 391–400. doi: 10.1002/(SICI)1520-6807(199810)35:4<391::AID-PITS10>3.0.CO;2-#
- Heckhausen, H., Schmalt, H.-D., & Schneider, K. (1985). *Achievement motivation in perspective*. New York, NY: Academic Press.
- Helmke, A., & van Aken, M. A. G. (1995). The causal ordering of academic achievement and self-concept of ability during elementary school: A longitudinal study. *Journal of Educational Psychology*, 87(4), 624-637. doi: 10.1037/0022-0663.87.4.624
- Hirsch, B. J., & Rapkin, B. D. (1987). The transition to junior high school: A longitudinal study of self-esteem, psychological symptomatology, school life, and social support. *Child Development*, 58, 1235–1243. doi: 10.2307/1130617
- Horner, M. S. (1974). The measurement and behavioral implications of fear of success in women. In J. Atkinson & J. Raynor (Eds.), *Motivation and Achievement* (pp. 91–117). New York, NY: Wiley.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling. A Multidisciplinary Journal*, 6, 51–55. doi: 10.1080/10705519909540118
- Hughes, J. N., Wu, J., Kwok, O., Villarreal, V., & Johnson, A. Y. (2012). Indirect effects of child reports of teacher-student relationship on achievement. *Journal of Educational Psychology*, 104, 350–365. doi: 10.1037/a0026339
- Jerusalem, M. (1993, Mai). *Die Entwicklung von Selbstkonzepten und ihre Bedeutung für Motivationsprozesse im Lern- und Leistungsbereich*. Antrittsvorlesung. Berlin: Humboldt Universität.
- Jones, J. G., & Grieneeks, L. (1970). Measures of self-perception as predictor of scholastic

- performance. *Journal of Educational Research*, 63, 201–203.
doi: 10.1080/00220671.1970.10883983
- Katz, I., Kaplan, A., & Gueta, G. (2010). Students' needs, teachers' support, and motivation for doing homework: A cross-sectional study. *Journal of Experimental Education*, 78, 246–267. doi: 10.1080/00220970903292868
- Kunter, M., Schümer, G., Artelt, C., Baumert, J., Klieme, E., Neubrand, M., ... Weiß, M. (2002). *PISA 2000: Dokumentation der Erhebungsinstrumente*. Berlin, Germany: Max-Planck-Institut für Bildungsforschung.
- Kushmand, J. W., Sieber, C., & Harold, K. P. (2000). This is not the place for me: School dropout. In D. Capuzzi & D. R. Gross (Eds.), *Youth at risk: A prevention resource for counselors, teachers, and parents* (pp. 471–507). Alexandria, VA: American Counseling Association.
- Lau, K. L., & Chan, D. W. (2001). Motivational characteristics of under-achievers in Hong Kong. *Educational Psychology*, 21(4), 417–430. doi: 10.1080/01443410120090803
- Lent, R. W., Brown, S. D., & Gore, P. A. Jr. (1997). Discriminant and predictive validity of academic self-concept, academic self-efficacy, and mathematics-specific self-efficacy. *Journal of Counseling Psychology*, 44(3), 307–315. doi: 10.1037/0022-0167.44.3.307
- Lyon, M. A. (1993). Academic self-concept and its relationship to achievement in a sample of junior high school students. *Educational and Psychological Measurement*, 53, 201–211. doi: 10.1177/0013164493053001022
- MacKinnon, D. (2008). *Introduction to Statistical Mediation Analysis*. New York, NY: Routledge.
- Maehr, M. L. (2008). Culture and achievement motivation, *International Journal of Psychology*, 43(5), 917–918. doi: 10.1080/00207590701838162
- Maier, M. A., Pekrun, R. (2004). Selbstkonzept. In R.W. Keck, U. Sandfuchs, & B. Feige (Hrsg.), *Wörterbuch Schulpädagogik* (S. 452). Regensburg, Germany: Klinkhardt
- Marchand, G., & Skinner, E. A. (2007). Motivational dynamics of children's academic help-seeking and concealment. *Journal of Educational Psychology*, 99, 65–82. doi: 10.1037/0022-0663.99.1.65
- Marsh, H. W. (1990). The causal ordering of academic self-concept and academic achievement: A multiwave, longitudinal panel analysis. *Journal of Educational Psychology*, 82, 646–656. doi: 10.1037/0022-0663.82.4.646
- Marsh, H. W., & Craven, R. G. (2005a, November). *Reciprocal effects of self-concept and*

- achievement: Competing multidimensional and unidimensional perspective*. Paper presented at the Australian Association for Research in Education (AARE), Parramatta, Australia.
- Marsh, H. W., & Craven, R. G. (2005b). A reciprocal effects model of the causal ordering of self-concept and achievement. New support for the benefits of enhancing self-concept. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *New frontiers for self research* (Vol.2, pp. 15–52). Greenwich, CT: Information Age Publishing.
- Marsh, H. W., & Köller, O. (2003). Bringing together two theoretical models of relations between academic self-concept and achievement. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *International advances in self research* (Vol.1, pp. 17–45). Greenwich, CT: Information Age Publishing.
- Marsh, H. W., Relich, J. D., & Smith, I. D. (1983). Self-concept: The construct validity of interpretations based upon the SDQ. *Journal of Personality and Social Psychology*, *45*, 173–187. doi: 10.1037/0022-3514.45.1.173
- Marsh, H. W., Smith, I. D., Barnes, J., & Butler, S. (1983). Self-concept: Reliability, stability, dimensionality and measurement of change. *Journal of Educational Psychology*, *75*, 772–790. doi: 10.1037/0022-0663.75.5.772
- Mayring, P. (2002). *Einführung in die qualitative Sozialforschung*. Weinheim, Germany: Beltz.
- McClelland, D. C. (1961). *The achieving society*. Princeton, NJ: Van Nostrand.
- McClelland, D. C. (1985). *Human motivation*. London, UK: Scott, Foresman & Co.
- McGuire, W. J., & McGuire, C. V. (1982). Significant others in self-space: Sex differences and developmental trends in the social self. In J. Suls (Ed.), *Psychological perspectives on the self* (Vol. 1, pp. 71–96). Hillsdale, NJ: Lawrence Erlbaum.
- McInerney, D. M. (2001, April). *Relationships between motivational goals, sense of self, self-concept and academic achievement: A comparative study with Aboriginal and non-Aboriginal students*. Paper presented at the Annual Meeting of the American Educational Research Association, Seattle, WA.
- McInerney, D. M., & McInerney, V. (2006). *Educational psychology: Constructing learning*. Sydney, Australia: Pearson.
- McLachlan, J., Zimmer-Gembeck, M. J., & McGregor, L. (2010). Rejection sensitivity in childhood and early adolescence: Peer rejection and protective effects of parents and friends. *Journal of Relationships Research*, *1*, 31–40. doi: 10.1375/jrr.1.1.31
- Mead, G. H. (1934). *Mind, self and society: from the standpoint of social behaviorist*. Chicago,

IL: University of Chicago Press.

- Meyer, W.-U. (1984). *Das Konzept von der eigenen Begabung*. Bern, Switzerland: Huber.
- Midgley, C., Feldlaufer, H., & Eccles, J. (1989). Change in teacher efficacy and student self- and task-related beliefs in mathematics during the transition to junior high school. *Journal of Educational Psychology, 81*(2), 247–258. doi: 0022-0663/89/S00.75
- Michie, F., Glachan, M., & Bray, D. (2001). An evaluation of factors influencing the academic self-concept, self-esteem and academic stress for direct and re-entry students in higher education. *Educational Psychology, 21*(4), 455–472. doi: 10.1080/01443410120090830
- Ministerium für Bildung, Jugend und Sport, Oberschule (2014). *Report of Ministry of Education, Youth and Sport on secondary school [Oberschule]*. Retrieved from http://www.mbjs.brandenburg.de/sixcms/media.php/5527/durchlass_oberschule.pdf
- Montemayor, R. (1983). Parents and adolescents in conflict: all families some of the time and some families most of the time. *Journal of Early Adolescence, 3*, 83–103
doi: 10.1177/027243168331007
- Müller, W., Steinmann, S., & Ell, R. (1998). Education and labour-market entry in Germany. In Y. Shavit & W. Müller (Eds.), *From school to work: A comparative study of educational qualifications and occupational destinations*. Oxford, England: Clarendon Press
- Murray, H. A. (1938). *Explorations in personality*. New York, NY: Oxford University Press.
- Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*(3), 328–346. doi: 10.1037/0033-295X.91.3.328
- Onorato, R. S., & Turner, J. C. (2004). Fluidity in the self-concept: The shift from personal to social identity. *European Journal of Social Psychology, 34*, 257–278. doi: 10.1002/ejsp.195
- Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research, 66*, 543–578. doi: 10.3102/00346543066004543
- Pajares, F., & Schunk, D. H. (2005). Self-efficacy and self-concept beliefs: Jointly contributing to the quality of human life. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *New frontiers for self research* (Vol.2, pp. 95–122). Greenwich, CT: Information Age Publishing.
- Patton, M. (1990). *Qualitative evaluation and research methods*. Beverly Hills, CA: Sage.
- Peetsma, T., Hascher, T., Van der Veen, I., & Roede, E. (2005). Relations between adolescents' self-evaluations, time perspectives, motivation for school and their achievement in

- different countries and at different ages. *European Journal of Psychology of Education*, 20, 209–225. doi: 10.1007/BF03173553
- Petermann, F., & Winkel, S. (2007). *FLM 7–13. Fragebogen zur Leistungsmotivation für Schüler der 7. bis 13. Klasse. Manual*. Frankfurt, Germany: Harcourt Test Services GmbH.
- Petersen, A. C. (1981). The development of self-concept in adolescence. In M. D. Lynch, A. A. Norem-Hebeisen, & K. Gergen (Eds.), *Self-Concept. Advances in theory and research* (pp.191–202). Cambridge, MA: Ballinger.
- Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology*, 95(4), 667–686. doi: 10.1037/0022-0663.95.4.667
- Prawat, R. S., Grissom, S., & Parish, T. (1979). Affective development in children, grades 3 through 12. *The Journal of Genetic Psychology*, 135, 37–49. doi: 10.1080/00221325.1979.10533415
- Preacher, K. J., & Hayes, A. F. (2008a). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–891. doi: 10.3758/BRM.40.3.879
- Preacher, K. J., & Hayes, A. F. (2008b). Contemporary approaches to assessing mediation in communication research. In A. F. Hayes, M. D. Slater, & L. B. Snyder (Eds.), *The Sage sourcebook of advanced data analysis methods for communication research* (pp. 13–54). Thousand Oaks, CA: Sage.
- Purkey, W. (1967). The self and academic achievement. *The Florida educational research and development council*, 3, 1–36. Retrieved from: <http://files.eric.ed.gov/fulltext/ED026681.pdf>
- Radel, R., Sarrazin, P., Legrain, P., & Wild T. C. (2010). Social contagion of motivation between teacher and student: analyzing underlying processes. *Journal of Educational Psychology*, 102, 577–587. doi: 10.1037/a0019051
- Raufelder, D., Drury, K., Jagenow, D., Hoferichter, F., & Bukowski, W. (2013). Development and validation of the relationship and motivation (REMO) scales to assess students' perceptions of peers and teachers as motivators in adolescence. *Learning and Individual Differences*, 23, 182–189. doi: 10.1016/j.lindif.2013.01.001
- Raufelder, D. (2007). *Von Machtspielen zu Sympathiegesten. Das Verhältnis von Lehrern und Schülern im Bildungsprozess*. Marburg, Germany: Tectum.

- Rheinberg, F. (2000). *Motivation*. Stuttgart, Germany: Kohlhammer.
- Rheinberg, F. (2004). *Motivationsdiagnostik*. Göttingen, Germany: Hogrefe.
- Rigby, C. S., Deci, E. L., Patrick, B. C., & Ryan, R. M. (1992). Beyond the intrinsic-extrinsic dichotomy: Self-determination in motivation and learning. *Motivation and Emotion*, *16*(3), 165–185. doi: 10.1007/BF00991650
- Rodriguez, C. (2009). The impact of academic self-concept, expectation and the choice of learning strategy on academic achievement: The case of business students. *Higher Education Research and Development*, *28*(5), 523–539. doi:10.1080/07294360903146841
- Rosenberg, M. (1979). *Conceiving the self*. New York, NY: Basic Books.
- Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology*, *99*(4), 761–774. doi: 10.1037/0022-0663.99.4.761
- Rubin, K., Bukowski, W. M., & Laursen, B. (Eds.) (2009). *Handbook of peer interactions, relationships, and groups*. New York, NY: Guilford Press.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68–78. doi: 10.1037/0003-066X.55.1.68
- Ryan, R. M., & Deci, E. L. (2006). Self-regulation and the problem of human autonomy: Does psychology need choice, self-determination, and will? *Journal of Personality*, *74*(6), 1557–1585. doi: 10.1111/j.1467-6494.2006.00420.x
- Ryan, R. M., & Stiller, J. (1991). The social contexts of internalization: Parent and teacher influences on autonomy, motivation, and learning. In P. Pintrich & M. Maehr (Eds.), *Advances in motivation and achievement* (pp. 115–149). Greenwich, CT: JAP Press.
- Ryan, R. M., Stiller, J., & Lynch, J. H. (1994). Representations of relationships to teachers, parents, and friends as predictors of academic motivation and self-esteem. *Journal of Early Adolescence*, *14*(2), 226–249. doi: 10.1177/027243169401400207
- Savin-Williams, R. C., & Demo, D. H. (1984). Developmental change and stability in adolescent self-concept. *Developmental Psychology*, *20*, 1100–1110. doi: 10.1037/0012-1649.20.6.1100
- Schnepf, S. V. (2002, July). *A sorting hat that fails? The transition from primary to secondary school in Germany*. Innocenti Working Paper, 92. Presented in UNICEF Innocenti Research Centre, Italy, Florence.
- Schoene, C., Dickhaeuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2002). *Skalen zur*

- Erfassung des schulischen Selbstkonzepts. Manual.* Goettingen, Germany: Hogrefe.
- Schoene, C., Dickhaeuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2003). Das Fähigkeitsselbstkonzept und seine Erfassung. In Stiensmeier-Pelster, J., & Rheinberg, F. (Eds.), *Diagnostik von Motivation und Selbstkonzept. Tests und Trends* (pp. 3–14). Göttingen, Germany: Hogrefe.
- Schöne, C., Dickhäuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2012). *Skalen zur Erfassung des schulischen Selbstkonzepts – SESSKO* (2nd rev. ed.). Göttingen, Germany: Hogrefe.
- Schunk, D. H. (1984, April). *Self-efficacy and classroom learning*. Paper presented at the meeting of the American Educational Research Association, New Orleans.
- Schwartz, D., Gorman, A. H., Nakamoto, J., & Toblin, R. L. (2005). Victimization in the peer group and children's academic functioning. *Journal of Educational Psychology, 97*, 425–435. doi: 10.1037/0022-0663.97.3.425
- Sebastian, C., Viding, E., Williams, K. D., & Blakemore, S. J. (2010). Social brain development and the affective consequences of ostracism in adolescence. *Brain Cognition, 72*, 134–145. doi: 10.1016/j.bandc.2009.06.008
- Seiffge-Krenke, I. (1990). Developmental processes in self-concept and coping behaviour. In H. A. Bosma, & A. E. Jackson (Eds.), *Coping and self concept in adolescence* (pp. 49–68). Berlin, Germany: Springer.
- Selling, H. (2001). Die Angst der Frauen vor Erfolg. In R.-M. Holm-Hadulla (Hrsg.), *Psychische Schwierigkeiten von Studierenden* (S. 89–112). Göttingen, Germany: Vandenhoeck & Ruprecht.
- Shavelson, R. J., & Bolus, R. (1982). Self-concept: The interplay of theory and methods. *Journal of Educational Psychology, 74*, 3–17. doi: 10.1037/0022-0663.74.1.3
- Shavelson, R. J., & Marsh, H. W. (1986). On the structure of self-concept. In R. Schwarzer (Ed.), *Self-related cognition in anxiety and motivation* (pp. 79–95). Hillsdale, NJ: Erlbaum.
- Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: Validation of construct interpretations. *Review of Educational Research, 46*, 407–441. doi: 10.2307/1170010
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and non-experimental studies: new procedures and recommendations. *Psychological Methods, 7*, 422–445. doi: 10.1037//1082-989X.7.4.422
- Sikhwari, T. D. (2004). *The relationship between affective factors and the academic achievement of students at the university of Venda*. [unpublished doctoral dissertation].

Pretoria: University of South Africa.

- Simmons, R. G., & Blyth, D. A. (1987). *Moving into adolescence: The impact of pubertal change and school context*. New York, NY: Aldine de Gruyter.
- Simmons, R. G. (1987). Self esteem in adolescence. In T. Honess & K. Yardley (Eds.), *Self and identity: Perspectives across the life-span* (pp. 172–192). London, England: Routledge.
- Simmons, R. G., Blyth, D. A., Vancleave, E. F., & Bush, D. M. (1979). Entry into early adolescence: The impact of school structure, puberty and early dating on self-esteem. *American Sociological Review*, *44*(6), 948–967. Retrieved from: <http://www.jstor.org/stable/2094719>
- Sinclair, M. F., Christenson, S. L., & Thurlow, M. L. (2005). Promoting school completion of urban secondary youth with emotional or behavioral disabilities. *Exceptional Children*, *71*, 465–482. doi: 10.1177/001440290507100405
- Singh, K. (2011). Study of achievement motivation in relation to academic achievement of students. *International Journal of Educational Planning & Administration*, *1*(2), 161–171. Retrieved from: http://www.ripublication.com/ijepa/ijepav1n2_8.pdf
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, *85*(4), 571–581. doi: 10.1037/0022-0663.85.4.571
- Smith, J. A. & Osborn, M. (2003). Interpretative phenomenological analysis. In J. A. Smith (Ed.), *Qualitative psychology: A practical guide to methods* (pp. 51–80). London, England: Sage.
- Soenens, B., & Vansteenkiste, M. (2005). Antecedents and outcomes of self-determination in three life domains: The role of parents' and teachers' autonomy support. *Journal of Youth and Adolescence*, *34*(6), 589–604. doi: 10.1007/s10964-005-8948-y
- Song, I., & Hattie, J. (1984). Home environment, self-concept, and academic achievement: A causal modeling approach. *Journal of Educational Psychology*, *76*(6), 1269–1281. doi: 10.1037/0022-0663.76.6.1269
- Stadler-Atlmann, U. (2010). *Das Schülerselbstkonzept. Eine empirische Annäherung*. Bad Heilbrunn, Germany: Klinkhardt.
- Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology*, *52*, 83–110. doi: 10.1146/annurev.psych.52.1.83
- Steinmayr, R., & Spinath, B. (2007). Predicting school performance from motivation and personality. *Zeitschrift für Pädagogische Psychologie*, *21*, 207–216. doi: 10.1024/1010-

0652.21.3.207

- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York, NY: Norton.
- Tucker, C. M., Zayco, R. A., Herman, K. C., Reinke, W. M., Trujillo, M., Carraway, K., Wallack, C., & Ivery, P. D. (2002). Teacher and child variables as predictors of academic engagement among low-income African American children. *Psychology in the Schools*, 39(4), 477–488. doi: 10.1002/pits.10038
- Valentine, J. C., & DuBois, D. L. (2005). Effects of self-beliefs on academic achievement and vice versa. Separating the chicken from the egg. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *New frontiers for self research* (Vol. 2, pp. 53-78). Greenwich: Information Age Publishing.
- Van den Berg, G., & Coetzee, L. (2014). Academic self-concept and motivation as predictors of academic achievement. *International Journal of Educational Sciences*, 6(3), 469–478. Retrieved from: [http://www.krepublishers.com/02-Journals/IJES/IJES-06-0-000-14-Web/IJES-06-3-000-14-Abst-PDF/IJES-6-3-469-14-295-van-den-Berg-G/IJES-6-3-469-14-295-van-den-Berg-G-Tx\[11\].pdf](http://www.krepublishers.com/02-Journals/IJES/IJES-06-0-000-14-Web/IJES-06-3-000-14-Abst-PDF/IJES-6-3-469-14-295-van-den-Berg-G/IJES-6-3-469-14-295-van-den-Berg-G-Tx[11].pdf)
- Watt, H. M. G. (2004). Development of adolescents' self-perceptions, values and task perceptions according to gender and domain in 7th - through 11th - grade Australian students. *Child Development*, 7, 1556–1574. doi: 10.1111/j.1467-8624.2004.00757.x
- Weiner, B. (1972). Attribution theory, achievement motivation, and the educational process. *Review of Educational Research*, 42(2), 203–221. Retrieved from: <http://www.jstor.org/stable/1170017>
- Weiner, B. (1994). *Motivationspsychologie*. Weinheim, Germany: Beltz.
- Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology*, 35, 193–202. doi: 10.1016/j.cedpsych.2010.03.002
- Wentzel, K. R. (1998). Social relationships and motivation in middle school: the role of parents, teachers and peers. *Journal of Educational Psychology*, 90(2), 202–209. doi: 10.1037/0022-0663.90.2.202
- Williams, J. H. (1973). The relationship of self-concept and reading achievement in first grade children. *Journal of Educational Research*, 66, 378–381. doi: 10.1080/00220671.1973.10884506
- Wylie, R. C. (1974). *The self-concept: A review of methodological considerations and measuring instruments*. Lincoln: University of Nebraska Press.

- Wylie, R. C., Miller, P. G., Cowles, S. S., & Wilson, A. W. (1979). *The self-concept*. Revised edition. Lincoln: University of Nebraska Press.
- Yeung, A. S. (2011). Student self-concept and effort: Gender and grade differences. *An International Journal of Experimental Educational Psychology*, 31(6), 749–772. doi: 10.1080/01443410.2011.608487
- Youniss, J., & Smollar, J. (1985). *Adolescent relations with mothers, fathers and friends*. Chicago, IL: University of Chicago Press.
- Yussen, S. R., & Kane, P. T. (1985). Children's concept of intelligence. In S. R. Yussen (Ed.), *The growth of reflection in children* (pp. 207–241). New York, NY: Academic Press.
- Zimmermann, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology*, 25, 82–91. doi: 10.1006/ceps.1999.1016
- Zusho, A., & Pintrich, P. R. (2001). Motivation in the second decade of life. In T. Urda & F. Pajares (Eds.), *Adolescence and education* (pp.163–200). Greenwich, CT: Information Age.

CHAPTER 2

Study I

The mediating role of socio-motivational support in the association between individual school self-concept and achievement motivation amongst adolescent students

2.1 Abstract

It is now well known that adolescence is frequently marked by a decline in students' achievement motivation, which in turn is often associated with a decline in individual school self-concept. Less is known about the mediating role of socio-motivational support in the association between individual school self-concept and achievement motivation. The current study examined the interplay of individual school self-concept, socio-motivational support and achievement motivation in a large sample of 7th and 8th grade students ($N = 1088$; $M_{\text{Age}} = 13.7$) in secondary schools in Brandenburg, Germany. Structural equation modeling was used to test the associations between individual school self-concept, socio-motivational support and achievement motivation. The results showed that the teacher-student relationships as well as “teachers as positive motivators” mediated the association between individual school self-concept and achievement motivation. In contrast, neither “peers as positive motivators” nor the student-student relationships mediated this association. These results support the notion that maintaining positive teacher-student relationships as well as encouraging teachers in the role of positive motivators could be an effective starting point for prevention and intervention programs aimed at offsetting the decline in individual school self-concept and achievement motivation during adolescence.

Keywords: individual school self-concept, social relationships, achievement motivation, socio-motivational support, structural equation modeling, mediation

The mediating role of socio-motivational support in the association between individual school self-concept and achievement motivation amongst adolescent students

For a substantial number of students in Western societies adolescence is marked by a downward tendency characterized by decreased achievement motivation, academic failure and eventual school dropout (Ladd, Herald-Brown, & Kochel, 2009; Dohn, 1991; Finn, 1989, 2006). As previous research has shown, student motivation begins to decline after the transition to secondary school, reaching its lowest point in the 9th grade (Eccles, Wigfield, & Schiefele, 1998; Watt, 2004; Zusho & Pintrich 2001; Peetsma, Hascher, Van der Veen, & Roede, 2005). These problematic outcomes have spurred research efforts to identify possible prevention and intervention strategies to strengthen students' achievement motivation. In the literature, motivation is often conceptualized as a multi-dimensional construct resulting from interdependencies between and amongst many variables (Waugh, 2002; Weiner, 1990), one of which is the individual school self-concept (Schoene, Dickhaeuser, Spinath, & Stiensmeier-Pelster, 2002).

The individual school self-concept taps students' perceptions of their academic standing by comparing present abilities to those in the past. According to Nicholls (1984) and Harter (2012) it is a useful construct for evaluating one's own academic progress. A high individual school self-concept means that present abilities are evaluated higher in comparison to those in the past; in contrast, a low individual school self-concept shows a decline in the evaluation of abilities over time. Most research on school self-concept (often used interchangeably with the term "academic self-concept") is based on its relationship to academic achievement. After decades of debate addressing whether school self-concept causes changes in academic achievement or vice versa, in 1990, Marsh proposed an integration of the two theoretical models that dominated the debate (Marsh & Köller, 2003; Marsh, 1990). He integrated the approaches of the self-enhancement and skill development model into the so-called reciprocal effects model of academic self-concept. This model postulates that academic self-concept and academic achievement are reciprocally related and mutually reinforcing (Marsh & Craven, 2005). In other words, improved academic self-concepts lead to better academic achievement, and improved academic achievement leads to better academic self-concept (Marsh & Craven, 2005). Therefore, teachers should strive to improve both academic self-concept and achievement because the effects of improving only one will be short-lived (Marsh & Craven, 2005). Based on this model,

Arepattamannil (2012) examined the mediating role of achievement motivation in the association between school self-concept and academic achievement in adolescent students. Her findings suggest that motivation indeed mediates the association between school self-concept and academic achievement, meaning that high levels of school self-concept help students to be more motivated about school and academics. The earlier work of Guay et al. (2010) also provides support that autonomous academic motivation mediates the association of academic self-concept and achievement among high school students. Additionally, Eckert, Schilling, and Stiensmeier-Pelster (2006) have documented that students' positive academic self-concepts are particularly important in buffering the potentially negative influences of failure on subsequent performance.

The development of academic skills and thus the individual school self-concept is bolstered by achievement motivation, which can be defined as an aggregate of achievement drive, perseverance and effort and fear of success. The first "learned drive" theory from Atkinson (1974) defined achievement motivation as a learned drive, aimed at achieving success and avoiding failure. All theories that currently dominate the field of motivation research⁵ are generally based on Atkinson's germinal approach. Decades of research have confirmed that the development of academic abilities and consequently better performance is associated with perseverance and effort (Petermann & Winkel, 2007a), and negatively influenced by fear of success (Horner, 1972). While perseverance and effort are positive factors associated with the development of academic abilities, fear of success is an avoidance behaviour, which is motivated by a desire to evade failure, and/or a desire to avoid success. Individuals typically want to avoid success due to the expected negative reactions from those in their social surroundings (Tresemer, 1977; Weiner, 1994). As recent studies have shown, motivation can be enhanced or undermined by various social factors such as teacher-student relationships, student-student relationships and the peer-group (Deci and Ryan, 1985; Reeve, Deci, & Ryan, 2004).

According to Wentzel et al. (2010, 1998), positive social relationships at school support academic achievement and motivation. Based on the increasingly complex nature of social relationships during adolescence (Bukowski, Simard, Dubois, & Lopez, 2011) both teacher-student and student-student relationships become essential for students' achievement motivation (Wentzel, 2009; Wentzel, Battle, Russell, & Looney, 2010;

⁵ (cognitive attribution theory of Weiner (1985); self-worth theory of achievement motivation of Covington and Berry (1976); achievement goal theory of Elliot (1997) and Pintrich (2003); self-determination theory (Deci & Ryan, 1985; Ryan & Stiller, 1991), and social-cognitive theory (Bandura, 1986; Pajares, 1996; Schunk, 1984))

Harter, 1996; Flanagan, Erath, & Bierman, 2008; Raufelder & Mohr, 2011; Wentzel, 1998) as well as personal development (Harter, 1996; Birch & Ladd, 1996; Erikson, 1959). Teachers, due to their special role in the learning process, provide students with academic support and monitoring (Régner, Loose, Dumas, 2009) as well as opportunities to increase their motivation (e.g. through tasks, activities, verbal appraisal or reward (Dörnyei, 2001; Kochhar, 1985)). Moreover, teachers provide support from an adult other than a parent (Raufelder, 2007) and act as role models for students and as well as communicate their more general approval or disapproval for the student as a person (Birch & Ladd, 1996), which can affect students' sense of identity (Birch & Ladd, 1997, 1998; Alerby & Hertting, 2007; Jennings & Greenberg, 2009) and therefore students' school self-concept.

The student-student relationship is also essential for students' well-being, because adolescents turn to their friends for, among other things, intimacy, support, understanding, advice, comfort (Harter, 1996; Rubin, Bukowski, & Laursen, 2009; Rubin, Bukowski, & Parker, 2006; Ladd, Herald-Brown, & Kochel, 2009; Juvonen & Wentzel, 1996; Wentzel, 2009a, 2009b; Wentzel, Battle, Russell, & Looney, 2010; Kindermann, 1993), and academic achievement (Birch & Ladd, 1996; Achermann, Pecorari, Winkler-Metzke, & Steinhausen, 2006; Kindermann, McCollam, & Gibson, 1996).

Interestingly, students tend to choose a peer group with academic characteristics similar to their own; thus, high achievers and low achievers tend to belong to different peer groups, which can have a significant influence on their motivation. Research has shown that students, who belong to high-achievement groups, show fewer declines in achievement motivation in early adolescence in comparison to those in low-achievement groups (Ryan, 2001; Bouffard, 2001). In addition, results from longitudinal studies (i.e., Ollendick, Weist, Borden, & Greene, 1992; Coie, Lochman, Terry, & Hyman, 1992; DeRosier, Kupersmidt, & Patterson, 1994) suggest that students who have troubled relationships with their peers, which are often associated with social withdrawal, low academic achievement, low self-worth and psychosocial maladjustment (Buhs, Herald, & Ladd, 2006) as well as compromised emotional well-being (Bukowski, Laursen, & Hoza, 2010; Schwartz, Gorman, Nakamoto, & Toblin, 2005; Newcomb, Bukowski, & Pattee, 1993), later show poor school performance and higher rates of truancy.

In order to enhance our understanding of the abovementioned constructs (school self-concept, socio-motivational support and achievement motivation) and the ways in which they are related, we have examined whether socio-motivational support can be an effective

external starting point to strengthen students' motivation and individual school self-concept.

2.2. Current Study

Based on the theoretical and empirical background outlined above, the current study examines the mediating role of socio-motivational support in the association between individual school self-concept and achievement motivation in adolescent students. In the study we examined the following two hypotheses:

Hypothesis 1: We hypothesized that there is an association between individual school self-concept, socio-motivational support and achievement motivation. Specifically, we hypothesized positive associations between individual school self-concept and the two variables of achievement motivation (achievement drive, perseverance/effort), and a negative association between individual school self-concept and the third variable of achievement motivation, namely fear of success. Furthermore, we hypothesized positive associations between all four socio-motivational support variables (1) “teacher-student relationships” (TSR), (2) “student-student relationships” (SSR), (3) “teachers as positive motivators” (TPM), and (4) “peers as positive motivators” (PPM) and achievement drive (AD), perseverance and effort (PE), as well as individual school self-concept (ISSC). In contrast, a negative association between all the socio-motivational support variables and fear of success was expected.

Hypothesis 2: Socio-motivational support functions as a mediator in the association between individual school self-concept and achievement motivation. We hypothesized that “peers as positive motivators” (PPM), “teachers as positive motivators” (TPM), “teacher-student relationships” (TSR) as well as “student-student relationships” (SSR) would mediate the association between individual school self-concept and achievement motivation for the sample of adolescent students.

2.3. Method

Participants

The participants ($N=1088$, Male: 501; Female: 587) were 12 to 15 year-old 7th and 8th grade students ($Mean_{age}=13.7$ years; $SD=.53$). This age range was chosen based on past research (Eccles, Wigfield, & Schiefele, 1998; Watt, 2004; Zusho & Pintrich, 2001) showing the dramatic decline of motivation during the first three years after transition to

high school. The quantitative survey was conducted in Brandenburg, Germany in the autumn term of 2011, at the beginning of the German school year. The 23 schools that participated in the research were randomly selected of a pool of all 124 secondary schools in the state of Brandenburg, Germany and were asked to voluntarily participate in the study. Five of the participating schools were in the biggest cities of Brandenburg (i.e., Potsdam, Cottbus, Frankfurt Oder, Brandenburg, Prenzlau) and 18 of the participating schools were in rural areas. Information about socio-economic status is not available due to German laws that prohibit asking a first party for information about a second party (e.g. asking students about the income of their parents). Ethnicity data were not collected, due to the very low percentage of ethnic minorities in Brandenburg (2.6%).

Procedure

Firstly, the permission to conduct the study was granted by the government department of Education, Youth and Sport of Brandenburg. Following this, agreements from the schools as well as parental permissions were obtained. All students were informed that participation in the study was voluntary, that all of their answers would be confidential and that they were not obliged to answer any of the questions. Trained instructors introduced the questionnaires to the participating students and explained how to use the Likert scales and record their responses. The data were collected on two consecutive days during regular class time at each school.

Measures

Individual School Self-Concept. In order to evaluate the Individual School Self Concept (ISSC), we used a subscale of the SESSKO (Skalen zur Erfassung des schulischen Selbstkonzepts), a self-report measure developed by Schoene, Dickhaeuser, Spinath, and Stiensmeier-Pelster (2002). The Individual School Self Concept (ISSC) subscale ($\alpha=.89$) consisted of 6 items measuring students' perceptions of change in their academic abilities and intelligence (e.g., "learning new things at school is..."). Answers were rated on a 5-point Likert scale ranging from "more difficult for me now than before" to "much easier for me now than before".

Achievement Motivation. Achievement motivation was assessed with three subscales of the Achievement Motivation Questionnaire for Students in 7th to 13th grade (Petermann & Winkel, 2007a): (1) perseverance and effort (PE), (2) achievement drive (AD) and (3)

fear of success (FS). Each subscale consisted of 8 items with answers ranging from “(1) it is not true at all” to “(5) it is absolutely true” on a 5-point Likert scale. The PE subscale addressed conscious concentration, time management, self-control and discipline (e.g., “I plan a lot of time to get ready for exams”) ($\alpha=.75$). The AD subscale consisted of items measuring one’s performance goals relative to others (e.g., “At school I want to belong to the best students”) ($\alpha=.83$). Finally, the FS subscale was used to evaluate the fear of possible negative peer reaction as a result of one’s academic success (e.g., “No one wants to have something in common with those students, who have better grades than the majority in the class”) ($\alpha=.73$).

Socio-Motivational Support. Socio-motivational support was measured along two dimensions: (1) perceived quality of the social relationships at school and (2) perceived positive role that peers and teacher play in students’ motivation. In order to assess the first dimension, the following two scales were used: (a) the Student-Student Relationships questionnaire (SSR) and the Teacher-Student Relationships questionnaire (TSR). The SSR was a part of the Program for International Student Assessment (PISA) of the OECD (Kunter et al., 2002). The participants rated statements about the social climate in class (e.g., “Many students are envious, if others have better grades”). The scale ranged from 1 (definitely does not apply) to 4 (definitely applies) and had an $\alpha=.70$. As the original scale measured negative SSR, the items were recoded for ease of interpretation. The TSR was also a part of the PISA 2003 battery (Kunter et al., 2002). The students were asked to rate such statements as “Most teachers treat me fairly” or “Most teachers care about the students’ well-being in school”. The scale ranged from 1 (definitely does not apply) to 4 (definitely applies) and showed an internal reliability of $\alpha=.78$.

In order to measure the perception of teachers and peers as positive motivators, we used two subscales of the Relationship and Motivation (REMO) scale (Raufelder, Drury, Jagenow, Hoferichter, & Bukowski, 2013): the (1) Teachers as positive motivators (TPM) ($\alpha=.78$) subscale, which consisted of 6 items (e.g., “When the teacher approves that I have tried my best, I will try to give my best again in the future.”) and the (2) Peers as positive motivators (PPM) ($\alpha=.80$) subscale, which was comprised of 11 items, (e.g., “When my friends learn a lot, I am also motivated to learn more.”). Responses for both subscales were scored on a 4-point Likert-scale ranging from “strongly disagree” to “strongly agree”.

2.4. Statistical Analyses

Structural Equation Models (SEM) with Mplus version 7.0 (Mplus 7.0; Muthén & Muthén, 2012) and maximum likelihood estimation on a correlation matrix were used to assess the hypothesized relationships between the variables of interest. In these models, latent variables were used to test the mediating role of peer and teacher support in the association between individual school self-concept and achievement motivation (Hypothesis II). We conducted SEMs accounting for nesting in classes using the approach proposed by Asparouhov (2005) for complex survey data (type is complex). This multilevel approach corrected standard error biases created by the nested nature (students/class) of our data (MacKinnon, 2008). The ‘type is complex’ code specified that the sampling is complex, meaning that the data were clustered in groups (school classes), here clustering occurred in 72 school classes. In addition, we conducted a bootstrapping analysis to assess the effects of mediators by constructing confidence intervals around the estimates (Christ & Schlüter, 2012; MacKinnon, 2008; Preacher & Hayes, 2008). This procedure reduced bias caused by the non-normality in the sampling distribution of indirect effects (Shrout & Bolger, 2002).

Model fit was estimated in Mplus using 5 primary fit indices for the model fit as recommended by Hu and Bentler (1999): Chi-Square Test of Model Fit (χ^2), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Standardized Root Mean Square Residuals (SRMR). In order to test for partial versus full mediation, two models were run: (1) a baseline model (without direct effects between individual school self-concept and the variables of achievement motivation), and (2) a less restrictive model (with direct effects between individual school self-concept and the variables of achievement motivation). The model fit of the baseline model was compared to the model fit of the less restricted model by conducting the χ^2 -difference test (Geiser, 2010; Yuan & Bentler, 2004). To account for missing data models were estimated with Mplus full information maximum likelihood (FIML) using Mplus version 7.0. (Mplus 7.0; Muthén & Muthén, 2012).

2.5. Results

Bivariate Correlations

The correlational analyses (Table 1) were conducted with the statistics software Mplus 7.0 (Muthén & Muthén, 2012). They revealed that the higher students evaluated the level of their ISSC, the more they endorsed their teachers as motivators ($r(1068) = .086$; $p < .001$) and the higher they scored on the quality of the teacher-student relationships ($r(1039) = .294$; $p < .001$). In contrast, there was no significant correlation between the ISSC and neither the quality of the student-student relationships nor peers as positive motivators. Moreover, there was a positive correlation between ISSC and AD ($r(1067) = .306$; $p < .001$) as well as between ISSC and PE ($r(1067) = .290$, $p < .001$). In other words, students with higher levels of ISSC also had higher achievement motivation. In contrast, there was no significant correlation between ISSC and fear of success. Additionally, the correlations showed that students with higher socio-motivational support from teachers also had higher levels of achievement drive: TPM-AD ($r(1087) = .343$, $p < .001$), TSR-AD ($r(1042) = .219$, $p < .001$). Whereas „peers as motivators” were positively correlated with achievement drive ($r(1087) = .294$, $p < .001$), the correlational analysis revealed a negative correlation between the student-student relationships and AD ($r(1048) = -.180$, $p < .001$), but the same variable was positively correlated to perseverance and effort ($r(1048) = .092$, $p < .001$). Furthermore, the more students perceived the quality of the student-student relationships to be positive, the less fear of success they tended to have ($r(1048) = -.312$, $p < .001$). The same was true for the correlation between teacher-student relationships and fear of success ($r(1042) = -.175$, $p < .001$). In contrast, the peers and teachers as positive motivators were not significantly correlated with fear of success.

Table 1. Means, standard deviations, and intercorrelations between individual school self-concept, variables of socio-motivational support and motivation

Measure	2	3	4	5	6	7	8	Range	<i>M</i>	<i>SD</i>
1. PPM	.411**	-.093**	.189**	.055	.176**	.294**	-.031	1-4	2.55	.51
2. TPM	-	-.156**	.233**	.086**	.226**	.343**	.003	1-4	3.08	.50
3. SSR		-	.193**	.036	.092**	-.180**	-.312**	1-4	2.65	.53
4. TSR			-	.294**	.376**	.219**	-.175**	1-4	2.85	.50
5. ISSC				-	.290**	.306**	-.027	1-5	3.25	.85
6. PE					-	.423**	-.080**	1-5	3.04	.71
7. AD						-	.013	1-5	3.13	.72
8. FS							-	1-5	2.07	.60

Note All measures are standardized. PPM= Peers as Positive Motivators, TPM/ Teachers as Positive Motivators, SSR=Student-Student Relationships, TSR= Teacher-Student Relationships, ISSC= Individual School Self-Concept, PE= Perseverance and Effort, AD=Achievement Drive, FS=Fear of Success; * $p < .05$, ** $p < .01$

Structural Equation Modeling

In order to test our hypotheses, two separate structural equation models were run: (1) model addressing the quality of socio-motivational support (SSR and TSR) as mediators; and (2) model approaching the motivational role played by peers and teachers (PPM and TPM) as mediators. Before conducting structural equation modeling (SEM), a confirmatory factor analysis (CFA) for each model was run in order to evaluate which combination of items was suitable for the models. In terms of an economic model, the number of items was reduced, such as low-loading ($\alpha < .40$) and cross-loading items were excluded from our analysis. Finally, every latent variable consisted of three items respectively.

The CFAs showed a good model fit for model 1.

(χ^2 (120)=268.12, $p < .001$; $CFI=0.95$, $TLI=0.94$, $RMSEA=0.03$ (0.03–0.04); $SRMR=0.04$) as well as for model 2 (χ^2 (120)=262.41, $p < 0.001$; $CFI=0.96$, $TLI=0.94$, $RMSEA=0.03$ (0.03–0.04); $SRMR=0.04$).

Model 1: SSR and TSR as Mediators.

Based on the results of the correlations, two structural equation models were constructed: (1) A baseline model including direct paths (a) from individual school self-concept to socio-motivational support (SSR, TSR); and (b) from socio-motivational support (SSR, TSR) to achievement motivation (AD, PE, FS) (Figure 1). The analysis showed that the baseline model had a good fit: (χ^2 (123)=282.45, $p<.001$; $CFI=0.95$, $TLI=0.94$, $RMSEA=0.04$ (0.03–0.04); $SRMR=0.04$) and that the indirect path from individual school self-concept to perseverance and effort through TSR was found to be significant ($B=.24$, $\beta=0.20$, $SE=.04$, 95% CI [0.168, 0.320]), as well as the indirect path from individual school self-concept to achievement drive through TSR ($B=.86$, $\beta=.11$, $SE=.03$, 95% CI [0.037, 0.135]), and the indirect path from individual school self-concept to fear of success through TSR ($B=-.04$, $\beta=-.07$, $SE=.01$, 95% CI [-0.064, . -0.010]). In contrast, SSR did not function as a mediator (none of the three indirect paths was found to be significant).

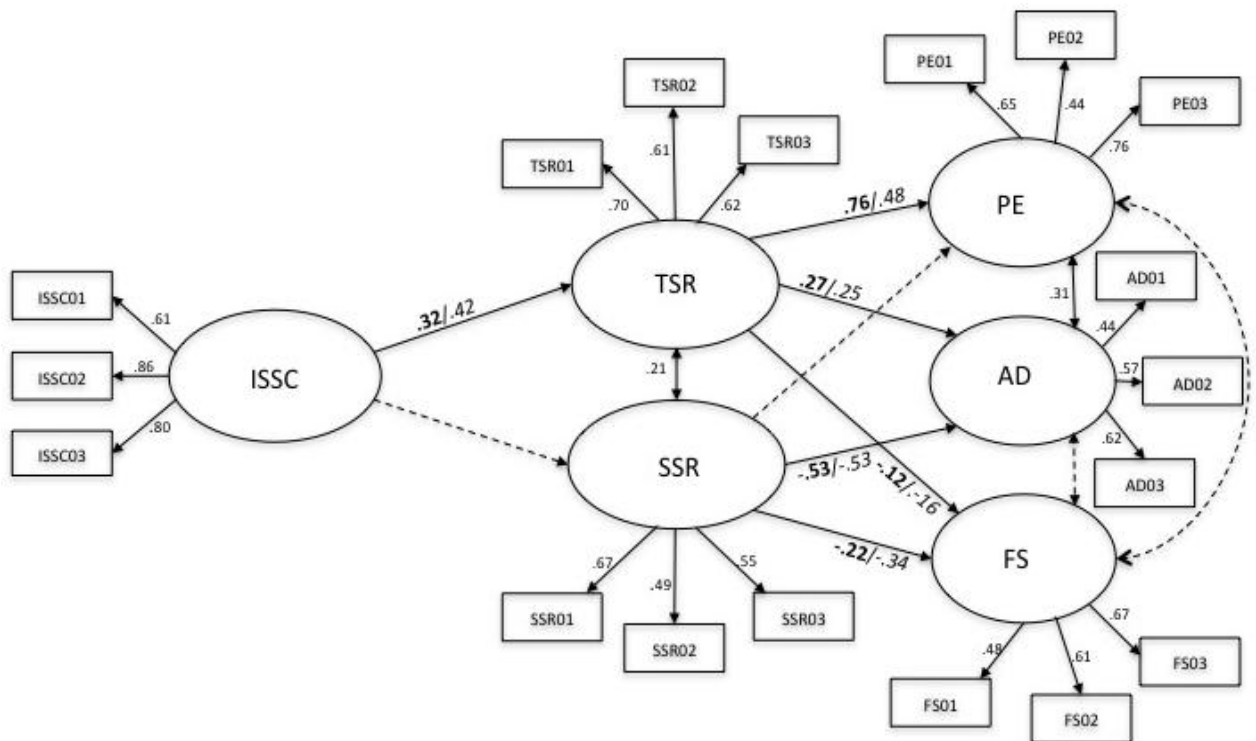


Figure 1. Baseline Model TSR and SSR as Mediators; SSR=Student-Student Relationships, TSR= Teacher-Student Relationships, ISSC= Individual School Self-Concept, PE= Perseverance and Effort, AD=Achievement Drive, FS=Fear of Success; Significant effects shown as unstandardized coefficients (B) in bold face and standardized coefficients (β) in italics, bold pathways are significant at $p < 0.05$; dotted pathways are not significant. Covariance values are standardized. Indirect effects are described in the text.

(2) In order to test for partial versus full mediation, pathways were added between individual school self-concept and the three subscales of achievement motivation. The results of this less restrictive model (Figure 1) showed a good fit ($\chi^2(120)=268.12, p<.001$; $CFI=.95, TLI=.94, RMSEA=.03 (.03-.04); SRMR=.04$). The chi-square difference test between the (1) baseline model and the (2) less restrictive model reached the level of significance ($\chi^2(3)=14.61, p< 0.001$), meaning that the less restrictive model fits better (see Table 2). Though the test revealed that the association between ISSC and AD was partially mediated by the teacher-student relationships, the additional direct effects between ISSC and AD in the less restrictive model were still significant. In contrast, the direct effect between ISSC and fear of success, as well as the direct effect between ISSC and perseverance and effort were not significant, which means that the teacher-student relationships functioned as a full mediator in these associations. This less restrictive model with the direct paths between ISSC and achievement model was considered the final model and is described in detail below (direct and indirect effects).

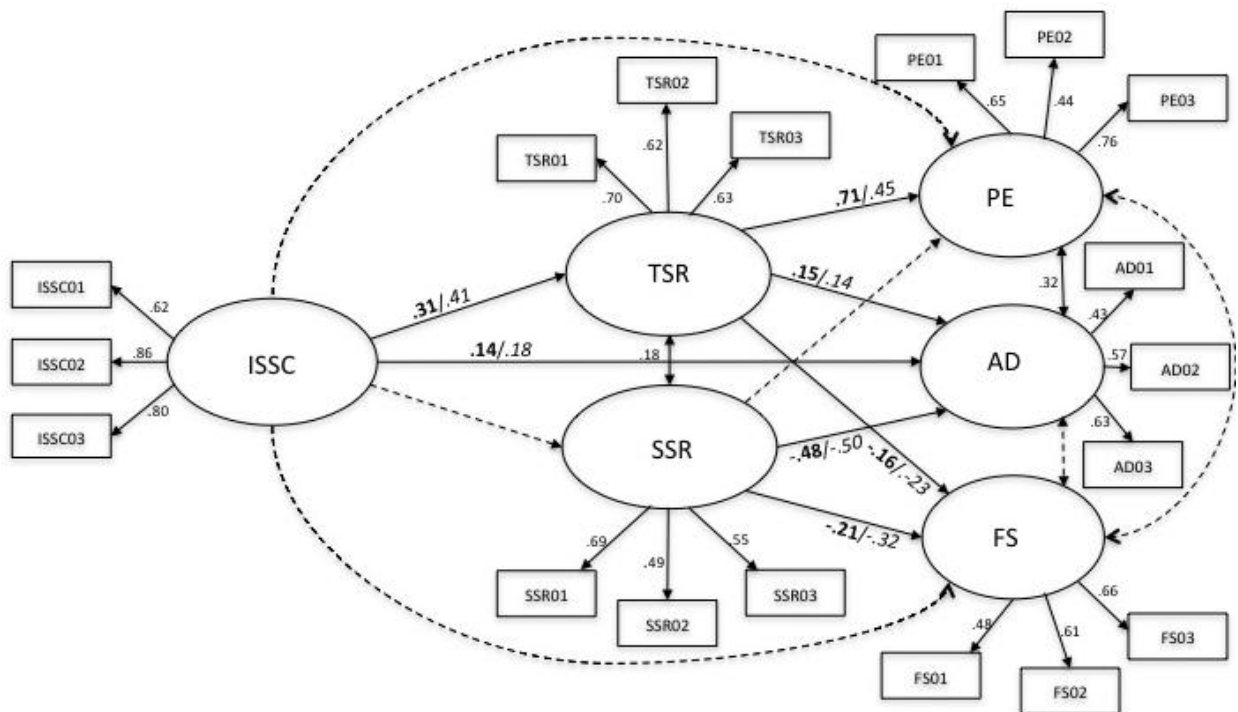


Figure 2. Less Restrictive Model SSR and TSR as Mediators. SSR= Student-Student Relationships, TSR= Teacher-Student Relationships, ISSC= Individual School Self-Concept, PE= Perseverance and Effort, AD=Achievement Drive, FS=Fear of Success; Significant effects shown as unstandardized coefficients (B) in bold face and standardized coefficients (β) in italics, bold pathways are significant at $p < .05$; dotted pathways are not significant. Covariance values are standardized. Indirect effects are described in the text

Table 2. Model fit indices comparing baseline model and less restrictive model – TSR and SSR as mediators

Measure	Baseline Model	Less Restrictive Model
χ^2 -Test of Model Fit (df [†])	282.45 (123)	268.12 (120)
p(χ^2)	<.001	<.001
CFI / TLI	.95 / .94	.95 / .94
RMSEA (90% CI)	.03 (.03, .04)	.03 (.03, .04)
SRMR	.04	.04

Note. [†]df = degrees of freedom

Direct Effects: this final model included direct effects: (a) of ISSC on both TSR and SSR; (b) of TSR and SSR on the three subscales of achievement motivation and (c) of achievement motivation on ISSC (see Figure 2). Consistent with our hypotheses, we observed the following direct effects: the effect of teacher-student relations on perseverance and effort ($B=.71$, $\beta=.45$, $SE=.10$, $p<.001$); as well as the effects of social relationships and individual school self-concept on achievement drive (TSR: $B=.15$, $\beta=.14$, $SE=.06$, $p=.018$; SSR: $B=-.48$, $\beta=-.50$, $SE=.07$, $p<.001$; ISSC: $B=.14$, $\beta=.18$, $SE=.04$, $p<.001$). Moreover, we observed significant direct effects between social relationships and fear of success (TSR: $B=-.16$, $\beta=-.23$, $SE=.06$, $p<.001$; SSR: $B=-.21$, $\beta=-.32$, $SE=.06$, $p<.001$). Another important direct effect was that of the individual school self-concept on teacher-student relationships ($B=.31$, $\beta=.41$, $SE=.04$, $p<.001$).

Indirect Effects: consistent with our hypotheses, we observed significant indirect effects of ISSC on PE mediated by TSR ($B=.22$, $\beta=.18$, $SE=.04$, 95% CI [0.142, 0.300]). The indirect effects of ISSC on AD mediated by TSR ($B=.05$, $\beta=.06$, $SE=.02$, 95% CI [0.005, 0.088]) and indirect effects of ISSC on FS mediated by TSR ($B=-.05$, $\beta=-.10$, $SE=.02$, 95% CI [-0.087, -0.016]) were also significant. In contrast, the SSR did not prove to be a mediator in our models. The identified final model explained 30.3% of variance of achievement motivation ($R^2=0.303$) and 21.7% of variance of perseverance and effort ($R^2 = 0.217$), as well as 16.8% of variance of fear of success ($R^2 = 0.168$). In the next step a second model was run to test if PPM and TPM act as mediators in the association between ISSC and achievement motivation.

Model 2: PPM and TPM as Mediators.

Based on the results of the correlations, another two structural equation models were constructed: (1) a baseline model (Figure 3) including direct paths (a) from individual school self-concept to socio-motivational support (PPM, TPM); and (b) from socio-motivational support to achievement motivation (AD, PE, FS). The analysis showed that the baseline model had a good fit (χ^2 (123)=287.74, $p<.001$; $CFI=.95$, $TLI=.94$; $RMSEA=.04$ (.03-.04); $SRMR=.04$). The indirect path from ISSC to AD through PPM was found to be significant ($B=.03$, $\beta=.04$, $SE=.01$, 95% CI [0.004, 0.058]). The same was true for the indirect path from ISSC to AD through TPM ($B=.05$, $\beta=.07$, $SE=.02$, 95% CI [0.016, 0.089]). Additionally, the indirect path from ISSC to PE through TPM ($B=.08$, $\beta=.07$, $SE=.03$, 95% CI [0.028, 0.135]) was significant. In contrast, PPM did not function as a mediator in the association between ISSC and PE. Finally, the indirect path from ISSC to FS through PPM was found to be significant ($B=-.01$, $\beta=-.02$, $SE=.01$, 95% CI [-0.023, 0.000]). For this path, TPM did not function as a mediator.

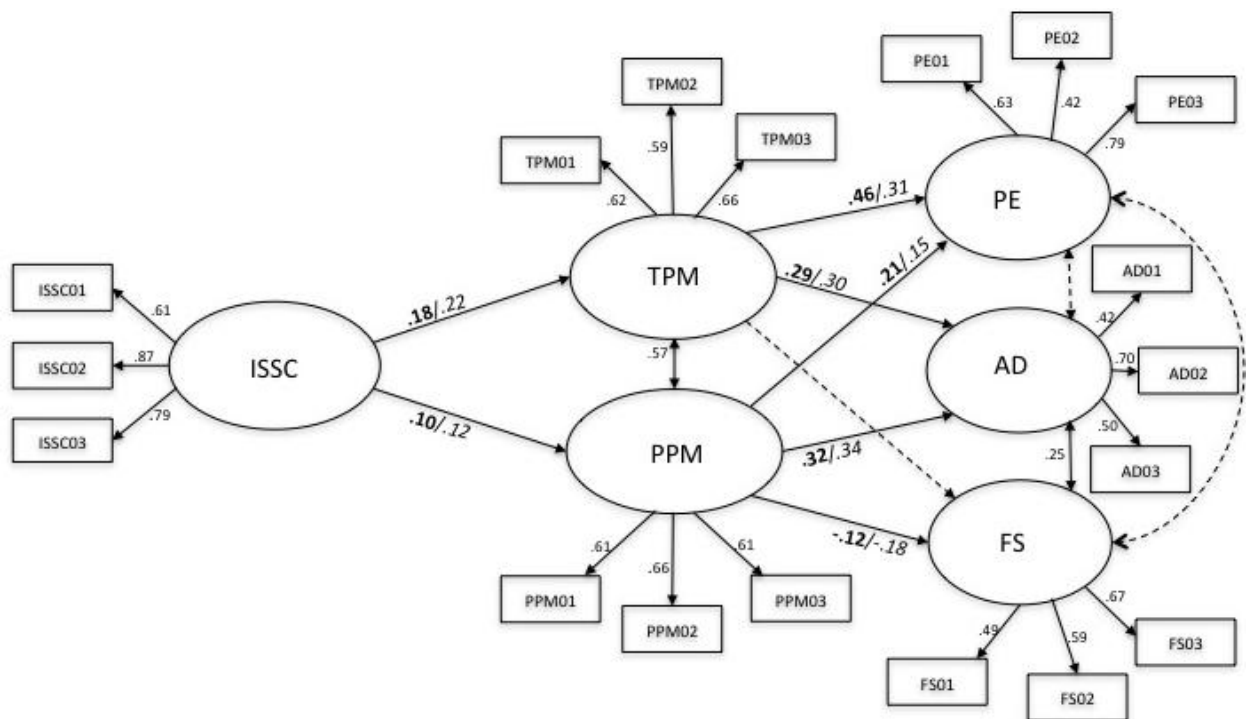


Figure 3. Baseline Model PPM and TPM as Mediators. PPM= Peers as Positive Motivators, TPM= Teachers as Positive Motivators, ISSC= Individual School Self-Concept, PE= Perseverance and Effort, AD=Achievement Drive, FS=Fear of Success; Significant effects shown as unstandardized coefficients (B) in bold face and standardized coefficients (β) in italics, bold pathways are significant at $p < .05$; dotted pathways are not significant. Covariance values are standardized. Indirect effects are described in the text.

(2) In order to test for partial versus full mediation, pathways were added between individual school self-concept and achievement motivation (3 subscales). This less restrictive model (Figure 4) showed a good fit as well ($\chi^2(120)=262.42$ $p<.001$; $CFI=.96$, $TLI=.94$; $RMSEA=.03$ (.03-.04); $SRMR=.04$). The chi-square difference test between the (1) baseline model and this (2) less restrictive model reached the level of significance ($\chi^2(3)=24.68$, $p <.001$), which meant that the less restrictive model had a better fit (see Table 3). Though the test revealed that the association between ISSC and achievement motivation was partially mediated by PPM and TPM, the additional direct effects between ISSC and the three scales of achievement motivation in the less restrictive model were still significant. This less restrictive model with the direct paths between ISSC and achievement model is our final model and is described below in detail (direct and indirect effects).

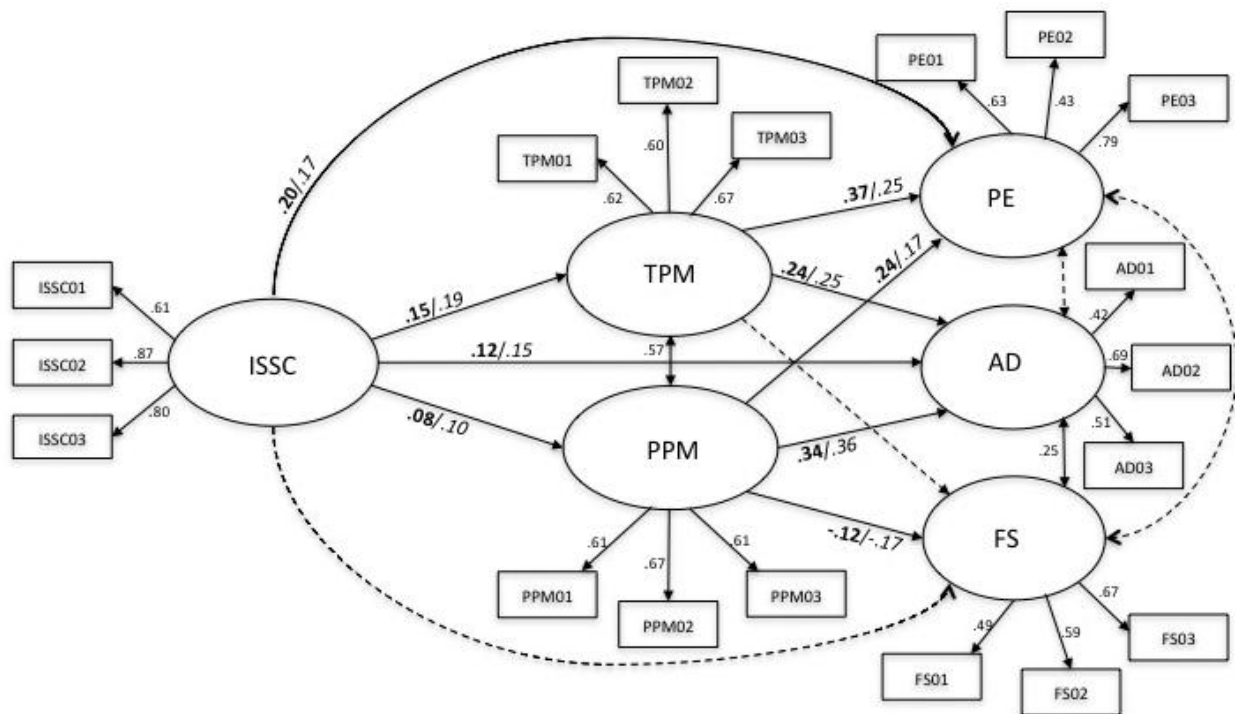


Figure 4. Less Restrictive Model PPM and TPM as Mediators. PPM= Peers as Positive Motivators, TPM= Teachers as Positive Motivators, ISSC= Individual School Self-Concept, PE= Perseverance and Effort, AD=Achievement Drive, FS= Fear of Success; Significant effects shown as unstandardized coefficients (B) in bold face and standardized coefficients (β) in italics, bold pathways are significant at $p < .05$; dotted pathways are not significant. Covariance values are standardized. Indirect effects are described in the text.

Table 3. Model fit indices comparing baseline model and less restrictive model – TPM and PPM as mediators

Measure	Baseline Model	Less Restrictive Model
χ^2 -Test of Model Fit (df ⁺)	287.74 (123)	262.42 (120)
p(χ^2)	<.001	<.001
CFI / TLI	.95 / .94	.96 / .94
RMSEA (90% CI)	.04 (.03, .04)	.03 (.03, .04)
SRMR	.04	.04

Note. ⁺df = degrees of freedom

Direct Effects: this final model included direct effects (a) of ISSC on both PPM and TPM, (b) of PPM and TPM on the three subscales of achievement motivation, and (c) of achievement motivation on ISSC (see Figure 4). We observed direct effects between teachers as positive motivators and perseverance and effort ($B=.37$, $\beta=.25$, $SE=.08$, $p < .001$) and between peers as positive motivators and perseverance and effort ($B=.24$, $\beta=.17$, $SE=.10$, $p = .038$) as well as between individual school self-concept and perseverance and effort ($B=.20$, $\beta=.17$, $SE=.06$, $p < .001$).

Both motivational relationships and the individual school self-concept had direct effects on achievement drive as well (TPM: $B=.24$, $\beta=.25$, $SE=.06$, $p < .001$; PPM: $B=.34$, $\beta=.36$, $SE=.07$, $p < .001$; ISSC: $B=.12$, $\beta=.15$, $SE=.03$, $p < .001$). In addition, the effect of peers as positive motivators on fear of success was statistically significant (FS on PPM ($B=-.12$, $\beta=-.18$, $SE=.05$, $p = .021$)). In contrast, both the direct effect between fear of success and teachers as positive motivators, as well as the direct effect between fear of success and individual school self-concept were not significant. Finally, there was a small but significant direct effect between the individual school self-concept and peers as positive motivators ($B=.08$, $\beta=.10$, $SE=.03$, $p = .006$), and between individual school self-concept and teachers as positive motivators ($B=.15$, $\beta=.19$, $SE=.03$, $p < .001$).

Indirect Effects: consistent with our hypotheses, we observed a significant indirect effect of ISSC on PE mediated by TPM ($B=.06$, $\beta=.05$, $SE=.02$, 95% CI [0.020, 0.093]). Furthermore, the indirect effects of ISSC on AD mediated by PPM ($B=.03$, $\beta=.04$, $SE=.01$, 95% CI [0.004, 0.050]) and TPM ($B=.04$, $\beta=.05$, $SE=.01$, 95% CI [0.010, 0.063]) were also significant. In contrast, both PPM and TPM did not mediate the associations between ISSC and FS and PPM did not mediate the associations between ISSC and PE. The identified

final model explained 34% of variance of achievement drive ($R^2 = 0.340$) and 19.3% of variance of perseverance and effort ($R^2 = 0.193$), as well as 2.7% of variance of fear of success ($R^2 = 0.027$).

2.6. Discussion

The current study examined the mediating role of socio-motivational relationships in the association between individual school self-concept and achievement motivation. Our primary aim was to test whether socio-motivational support could be an effective starting point for strengthening students' achievement motivation, which in turn might positively affect the individual school self-concept. Supportive socio-motivational relationships might be an effective external starting point, which can be easily implemented in daily school life and thus prevent the decline in achievement motivation that characterizes this developmental period.

In line with our first hypothesis the findings suggested that there were associations between the individual school self-concept, socio-motivational support and achievement motivation, however, not every expected association was confirmed. In specific, we found that students who perceived peers and teachers as positive motivators, as well as students who had a high individual school self-concept, tended to have higher scores on perseverance and effort and achievement drive. In contrast, a significant association was neither discovered between (a) individual school concept and fear of success nor between (b) peers and teachers as positive motivators and fear of success. The nature of the variables could possibly explain these insignificant effects. The variable "Fear of success" estimates the belief that high school performance can be associated with negative social consequences (e.g., "Students who try harder at school are disliked by others"). In other words, the motivational concept behind fear of success is based on social relationships, particularly within student-student relationships. Therefore, it is not surprising that solely positive teacher-student and student-student relationships were negatively associated with fear of success. Essentially, the better students perceive their student-student relationships and their teacher-student relationships, the less fear of success they possess. Although the correlation analyses did not reveal a significant association between peers as positive motivators and fear of success, in model 2 of the SEM analyses there was a small but significant negative association between these variables. This might be due to the interdependent character and interplay of the latent variables included in the model. In sum, a positive peer relationship in the school context may be related to feelings of

friendship and belonging to a community (Adams, Santo, & Bukowski, 2011; Cook, Deng, & Morgano, 2007; Hodges, Boivin, Vitaro, & Bukowski, 1999), as well as perceived as motivational support, representing a protective factor against fear of success.

Interestingly, the variables “Teachers as Positive Motivators” and the “Teacher-Student Relationships” were related to the individual school self-concept, but the same could not be said about the variables of peer socio-motivational support. In other words, the more students perceived their teachers as positive motivators and the more they considered their teacher-student relationships to be positive, the better their individual school-concept was. In comparison to that, “Peers as Positive Motivators” and the “Student-Student Relationships” were not related to the students’ individual school self-concept. These results contradict previous findings (Harter, 1996; Rubin, Bukowski, & Parker, 2006; Furman & Buhrmester, 1992; Buhs, Herald, & Ladd, 2006), suggesting that the role of peer relationships in maintaining the individual’s school self-concept might be overestimated in the literature. It should be noted, however, that the absence of correlations between these constructs in our research might be explained by the nature of the constructs we used. The individual school self-concept scale compared the current abilities of students to their past abilities and is therefore more related to institutional aspects of social relationships in school, (e.g., the teacher-student relationships and the perception of teachers as positive motivators). Moreover, teachers provide judgment and feedback regarding students’ academic performance, which might affect the perception of students’ individual school self-concept and vice versa. In contrast, peers might be essential for students’ social school self-concept since they provide a comparison base. However, the present study was focused on the individual school self-concept given that previous research has shown that students prefer to compare their current academic abilities with their own past abilities (i.e., individual development) than with social others (i.e., peers) (Leahy & Hunt, 1983; Nicholls, 1984; Yussen & Kane, 1985).

The results indicated a negative association between the student-student relationships and AD, which could be explained by the fact that AD is defined as an ambition to be better than others, desire to excel, will to win, or competitive nature and therefore better interpersonal relationships with classmates imply a less competitive classroom climate and consequently lower levels of achievement drive amongst students (McClelland, 1961). At the same time, if students perceived their peers as positive motivators rather than social companions, they tended to report higher levels of AD. In contrast, both teacher variables

were positively associated with AD, due to the fact that students might perceive relationships with teacher generally in a more professional and academic way.

In sum, socio-motivational support from teachers seems to have strong positive associations with both students' individual school self-concept and their achievement motivation as compared to socio-motivational support from peers. This supports our hypothesis about the importance of a teacher's role in the association between individual school self-concept and achievement motivation as well as a teachers' role in aspects of achievement motivation. The correlational analyses addressing associations between the role of peers and individual school self-concept did not confirm our expectations, but they did emphasize the role of peers in connection to achievement motivation. The results revealed that peers who are perceived as positive motivators contributed to more perseverance and effort as well as achievement drive during the first years of secondary school (which supports the results of Ladd, Herald-Brown, and Kochel (2009), Juvonen and Wentzel (1996), Wentzel, Battle, Russell, and Looney (2010)). Furthermore, positive student-student relationships are related to less fear of success and in this way contribute to emotional well-being (which is in line with the findings of Harter (1996), Rubin, Bukowski, and Laursen (2009), Rubin, Bukowski, and Parker (2006) as well as Furman and Buhrmester (1992)).

The results of the two structural equation models are very much in accordance with the results from the correlational analyses: in line with hypothesis II, teachers' socio-motivational support mediated the association between individual school self-concept and achievement motivation. Specifically, the teacher-student relationships partially mediated the association between individual school self-concept and achievement drive, whereas the association between individual school self-concept and fear of success, as well as between individual school self-concept and perseverance and effort were fully mediated by the teacher-student relationships. In addition, teachers as positive motivators partially mediated the association between the individual school self-concept and achievement drive, as well as between individual school self-concept and perseverance and effort. In contrast, neither student-student relationships nor peers as positive motivators functioned as a mediator. This might be due to the fact that there was no significant association between socio-motivational support from peers and individual school self-concept in general. As mentioned above, the individual school self-concept might be related to socio-motivational relationships with teachers, as they directly provide students with feedback and judgment on their individual academic performance. Conversely, the socio-

motivational relationships with peers might be related to social school self-concept, in which students assess their school self-concept in comparison to the academic abilities and performance of their peers (Schoene, Dickhaeuser, Spinath, & Stiensmeier-Pelster, 2002). Future research taking into account both the individual as well as the social school self-concepts might clarify these differences.

In sum, the results suggest that strong positive relationships between a teacher and a student during the first years of secondary school can contribute to student's achievement drive as well as improve her/his perseverance and effort in school and protect from fear of success. Moreover, perseverance and effort as well as achievement drive in relation with academic self-concept profit from the student's perception of a teacher as a positive motivator. These findings help to specify the teacher's role in the mechanisms of learning behavior and to clarify teachers' impact on different aspects of achievement motivation. In contrast, neither the student-student relationships nor the perception of peers as positive mediators acted as mediators. Therefore, our second hypothesis could only be partially confirmed.

Overall, our results underline the importance of socio-motivational support, particularly from teachers, in educational settings. The findings of the correlation analyses extend existing evidence (Montalvo, 2007) by suggesting that students' achievement motivation and individual school self-concept not only benefit from positive teacher-student relationships in general, but also in particular from teachers who act as positive motivators. In other words, maintaining positive teacher-student relationships in secondary school as well as perceiving teachers as positive motivators could help students maintain their individual school self-concept and possibly prevent the decline in achievement motivation that is common for this age group.

Furthermore, even though our hypothesis that strong student-student relationships and peers as positive motivators would serve as mediators in the association between individual school self-concept and achievement motivation was not fully supported, the findings of the correlational analyses and the direct effects in the SEM were in line with current research. In particular, the more students perceive their peers as positive motivators the better they perceive their student-student relationships, the higher they score on achievement drive and perseverance and effort. In contrast, if peers serve a more relational as opposed to academic function as evidenced by more positive student-student relationships, adolescents tend to have less fear of success. The negative association between the variables "Peers as Positive Motivators" and "Student-Student Relationships"

also suggests that peers can serve different functions in the school context and thus have different effects on achievement motivation. While the teacher's role ("Teacher-Student Relationships" and "Teachers as Positive Motivators") seems to be more institutionalized and uniform and therefore connected to achievement motivation and the individual school self-concept, the role of peers should be understood in a more differentiated way: while a high quality of the student-student relationships might be good for students' well-being (Wentzel, 2009a) and reduce fear of success, it can also have a negative impact on achievement drive. However, when peers serve a more institutional and academic role as positive motivators, adolescents benefit from these relationships through increased achievement motivation (Raufelder, Drury, Jagenow, Hoferichter, and Bukowski, 2013).

In summary, our findings extend current research by differentiating between types of peer relationships that can differentially affect adolescents' achievement motivation. Furthermore, the results underline the important mediating role of teachers' socio-motivational support in the association between students' individual school self-concept and their achievement motivation. The evidence supports the conclusion that particularly in adolescence, socio-motivational support perceived from teachers is a good point of intervention in efforts aimed at addressing the decreasing achievement motivation, academic failure, and school dropout.

2.7. Strengths, Limitations and Future Research

The present study has important theoretical, methodological, and statistical strengths. Firstly, the differentiated roles (relational and motivational) of *both* peers and teachers in adolescents' school context have been considered, whereas most studies focus on the impact of either peers or teachers (Wentzel, Donlan, & Morrison, 2012). Secondly, the two structural equation models, which have been conducted using a complex multilevel approach (Asparouhov, 2005) are a clear strength of the study. Thirdly, the sample includes a large number of students and schools, which allows the generalization of the results. Finally, with regard to differences in the socio-motivational support by peers and teachers, the findings enhance our understanding of the complex nature of social relationships in the school context in adolescence.

The current research on the role of socio-motivational support in adolescents' school life has certain methodological limitations. Firstly, although we were specifically interested in students' perception of social relationships and motivation, it can be said that the study is limited in its reliance on self-report measures. However, according to Chan (2009),

negative attitudes toward self-report data have taken on unjustified proportions (see also Spector, 2006). By carefully considering the four main problems (construct validity of self-report data, interpreting the correlations, social desirability responding, value of data collected from non-self-reported measures) associated with self-report data, we attempted to address and consequently circumvent them. Not to mention that the problems associated with self-report data may just as easily occur with non-self-report data (Chan, 2009). Secondly, the data are cross-sectional, which limits assertions about the stability of the results over time. Longitudinal research designs could illuminate important trajectories of change across the developmental phase of adolescence. Thirdly, there are limitations in the psychometric qualities of two variables: “Fear of Success” and “Student-Student Relationships”. Instruments that proved to have good psychometric qualities in other studies showed restricted psychometric qualities in the present population. However, due to their substantial contribution to the models, we decided not to remove the variables.

The present results lead naturally to several research questions concerning possible inter- and intra-individual differences between students. For example, are the findings equally relevant for both girls and boys as well as for low-achieving and high-achieving students? Or, might the teacher’s gender play a role in these processes? Furthermore, including class and school level variables (such as class and school climate) could possibly improve our current models. These and other questions are being addressed within the framework of our overarching longitudinal and method triangulation (quantitative, qualitative, and experimental) research initiative. In conclusion, the present findings regarding achievement motivation and individual school self-concept are directly relevant to teachers’ efforts to reduce motivational decline in early adolescence in that they highlight the importance of considering both motivational *and* social factors within the school context.

2.8. References

- Achermann, N., Pecorari, C., Winkler-Metzke, C., & Steinhausen, H. C. (2006). Schulklima und Schulumwelt in ihrer Bedeutung für psychische Störungen bei Kindern und Jugendlichen – Einführung in die Thematik. In H.-C. Steinhausen (Ed.), *Schule und psychische Störungen* (pp. 15–37). Stuttgart, Germany: Kohlhammer.
- Adams, R. E., Santo, J. B., & Bukowski, W. M. (2011). The presence of a best friend buffers the effects of negative experiences. *Developmental Psychology*, *47*(6), 1786–1791. doi: 10.1037/a0025401
- Alerby, E., & Hertting, K. (2007, November). *Reflections on the meaning of social relations between teachers and students*. Paper presented at the meeting of the Australian Association for Research in Education (AARE) 37th Annual International Education Research Conference, Australia, Fremantle.
- Areepattammannil, S. (2012). Mediation role of academic motivation in the association between school self-concept and school achievement among Indian adolescents in Canada and India. *Social Psychology of Education: An International Journal*, *15*, 367–386. doi: 10.1007/s11218-012-9187-1
- Asparouhov, T. (2005). Sampling weights in latent variable modeling. *Structural Equation Modeling*, *12*(3), 37–41. doi: 10.1073/pnas.0910967107
- Atkinson, J. W. (1974). *A theory of achievement motivation*. New York; NY: Wiley.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Birch, S. H., & Ladd, G. W. (1996). Interpersonal relationships in the school environment and children's early school adjustment: the role of teachers and peers. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation – Understanding children's school adjustment* (pp. 199–225). Cambridge, NY: University Press.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York, NY: John Wiley & Sons.
- Bouffard, T., Boileau, L., & Vezeau, C. (2001). Students' transition from elementary to high school and changes of the relationship between motivation and academic performance. *European Journal of Psychology of Education*, *16*, 589–604. doi: 10.1007/BF03173199
- Brunstein, J., & Heckhausen, H. (2006). Leistungsmotivation. In J. Heckhausen & H.

- Heckhausen (Eds.), *Motivation und Handeln* (pp. 143–191). Berlin, Germany: Springer.
- Byrne, B. M. (1996). Academic self-concept: Its structure, measurement, and relation with academic achievement. In B. A. Bracken (Ed.), *Handbook of self-concept* (pp. 287–316). New York, NY: Wiley.
- Bukowski, W. M., Laursen, B., & Hoza, B. (2010). The snowball effect: Friendship moderates escalations in depressed affect among avoidant and excluded children. *Development and Psychopathology* 22, 749–757. doi: 10.1017/S095457941000043X
- Bukowski, W. M., Simard, M., Dubois, M.-E., & Lopez, L. (2011). Representations, process, and development: A new look at friendship in early adolescence. In E. Amsel & J. Smetana (Eds.), *Adolescent vulnerabilities and opportunities: Developmental and constructivist perspectives* (pp. 159–181). Cambridge, NY: University Press.
- Bukowski, W. M., Brendgen, M., & Vitaro, F. (2007). Peers and Socialization: Effects on Externalizing and Internalizing Problems. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of socialization: Theory and research* (pp. 355–381). New York, NY: Guilford.
- Buhs, E., Herald, S., & Ladd, G. (2006). Peer exclusion and victimization: Processes that mediate the relation between peer group rejection and children's classroom engagement and achievement. *Journal of Educational Psychology*, 98, 1–13. doi: 10.1037/0022-0663.98.1.1
- Chan, D. (2009). So why ask me? Are self-report data really that bad? In C. E. Lance & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends* (pp. 309–336). New York, NY: Routledge.
- Christ, O., & Schlüter, E. (2012). *Strukturgleichungsmodelle mit Mplus. Eine praktische Einführung*. München, Germany: Oldenbourg.
- Coie, J. D., Lochman, J. E., Terry, R., & Hyman, C. (1992). Predicting early adolescent disorder from childhood aggression and peer rejection. *Journal of Consulting and Clinical Psychology*, 60(5), 783–792. doi: 10.1037//0022-006X.60.5.783
- Cook, T. D., Deng, Y., & Morgano, E. (2007). Friendship influences during early adolescence: The special role of friends' grade point average. *Journal of Research on Adolescence*, 17(2), 325–356. doi: 10.1111/j.1532-7795.2007.00525.x

- Covington, M. V. (1984). The self-worth theory of achievement motivation: Findings and implications. *The Elementary School Journal*, 85, 4–20. doi: 10.1086/461388
- Covington, M. V., & Berry, R. G. (1976). *Self-worth theory and school learning*. New York, NY: Holt, Rinehart & Winston.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.
- DeRosier, M. E., Kupersmidt, J. B., & Patterson, C. J. (1994). Children's academic and behavioral adjustment as a function of the chronicity and proximity of peer rejection. *Child Development*, 65(6), 1799–1813. doi: 10.1111/j.1467-8624.1994.tb00850.x
- Dimitrov, D. M. (2006). Comparing groups on latent variables: A structural equation modeling approach. *A Journal of Prevention, Assessment and Rehabilitation*, 26(4), 429–436. doi: 1051-9815/06
- Dohn, H. (1991). “Drop-out” in the Danish high school (gymnasium): An investigation of psychological, sociological and pedagogical factors. *International Review of Education*, 37(4), 415–428. doi: 10.1007/BF00597619
- Dörnyei, Z. (2001). *Teaching and researching: motivation*. London, GB: Pearson Education Limited.
- Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to Succeed. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology. Social, emotional and personality development* (Vol. 3, pp. 1017–1096). New York, NY: Wiley.
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C., Reuman, D., Flanagan, C., & Iver, D. (1993). Development during adolescence. The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist*, 48(2), 90–101. doi: 10.1037/0003-066X.48.2.90
- Eccles, J. S., & Midgley, C. (1990). Changes in academic motivation and self-perceptions during early adolescence. In R. Montemayor, G. R. Adams, & T. P. Gullotta (Eds), *Advances in adolescent development: From childhood to adolescence* (pp. 134–155). Newbury Park, CA: Sage.
- Eckert, C., Schilling, D., & Stiensmeier-Pelster, C. (2006). Einfluss des Fähigkeitsselbstkonzeptes auf die Intelligenz- und Konzentrationsleistung. *Zeitschrift für Pädagogische Psychologie*, 20, 41–48. doi: 10.1024/1010-0652.20.12.41
- Elliot, A. J. (1997). Integrating the “classic” and the “contemporary” approaches to

- achievement motivation: A hierarchical model of approach and avoidance achievement motivation. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 143–179). Greenwich, CT: JAP Press.
- Erikson, E. (1959). *Identity and the life cycle*. New York, NY: Norton.
- Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research*, 59(2), 117–142. doi: 10.3102/00346543059002117
- Finn, J. D. (2006, March). *The adult lives of at-risk students: The roles of attainment and engagement in high school*. Report Nr. 328 to National Center of Educational Statistics. US: Washington, DC.
- Flanagan, K. S., Erath, S. A., & Bierman, K. B. (2008). Unique associations between peer relationships and social anxiety in early adolescence. *Journal of Clinical Child and Adolescent Psychology*, 37, 759–769. doi: 10.1080/15374410802359700
- Furman, W. & Buhrmester, C. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development*, 63, 103–105. doi: 10.1111/j.1467-8624.1992.tb03599.x
- Geiser, C. (2010). *Datenanalyse mit Mplus. Eine anwendungsorientierte Einführung*. 1. Aufl., Wiesbaden, Germany: VS.
- Green, J., Nelson, G., Martin, A. J., & Marsh, H. (2006). The causal ordering of self-concept and academic motivation and its effect on academic achievement. *International Education Journal*, 7, 534-546. Retrieved from: <http://ehlt.flinders.edu.au/education/iej/articles/v7n4/green/paper.pdf>
- Guay, F., Ratelle, C. F., Roy, A., & Litalien, D. (2010). Academic self-concept, autonomous academic motivation, and academic achievement: Mediating and additive effects. *Learning and Individual Differences*, 20, 644–653. doi:10.1016/j.lindif.2010.08.001
- Hallinan, M. T., & Williams, R. (1990). Student characteristics and the peer influence process: A nationwide study. *Sociology of Education*, 63, 122–132. Retrieved from: <http://www.jstor.org/stable/2112858>
- Hamre, B. K., & Pianta, R. C. (2006). Student-teacher relationships as a source of support and risk in schools. In G. G. Bear & K. M. Minke (Eds.), *Children's needs: Development, prevention, and intervention* (pp. 59–71). Bethesda, MD: National Association of School Psychologists.

- Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, 17(3), 300–312. doi: 10.1037/0012-1649.17.3.300
- Harter, S. (1996). Teacher and classmate influences on scholastic motivation, self-esteem, and level of voice in adolescents. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation – Understanding children’s school adjustment* (pp. 11–42). New York, NY: Cambridge University Press.
- Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations*. New York, NY: Guilford.
- Hodges, E. V., Boivin, M., Vitaro, F., & Bukowski, W. M. (1999). The power of friendship: Protection against an escalating cycle of peer victimization. *Developmental Psychology*, 35, 94–101. doi: 10.1037/0012-1649.35.1.94
- Horner, M. S. (1972). Toward an understanding of achievement-related conflicts in women. *Journal of Social Issues*, 28(2), 157–175. doi: 10.1111/j.1540-4560.1972.tb00023.x
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 51–55. doi: 10.1080/10705519909540118
- Juvonen, J., & Wentzel, K. R. (Eds.) (1996). *Social motivation: Understanding children’s school adjustment*. New York, NY: Cambridge University Press.
- Kindermann, T. A. (1993). Natural peer groups as contexts for individual development: The case of children’s motivation in school. *Developmental Psychology*, 29(6), 970–977. doi: 10.1037/0012-1649.29.6.970
- Kindermann, T. A., McCollam, T. L., & Gibson Jr., E. (1996). Peer networks and students’ classroom engagement during childhood and adolescence. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation: Understanding children’s school adjustment* (pp. 279–311). New York, NY: Cambridge University Press.
- Kochhar, S. K. (1985). *Methods & techniques of teaching*. New Delhi, India: Sterling Publishers Private Limited.
- Kunter, M., Schümer, G., Artelt, C., Baumert, J., Klieme, E., Neubrand, M., ... Weiß, M. (2002). *PISA 2000: Dokumentation der Erhebungsinstrumente*. Berlin, Germany: Max-Planck-Institut für Bildungsforschung.
- Ladd, G. W., & Kochenderfer, B. J. (1996). Linkages between friendship and adjustment

- during early school transitions. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 322–345). New York, NY: Cambridge University Press.
- Ladd, G. W., Herald-Brown, S. L., & Kochel, K. P. (2009). Peers and motivation. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 323–348). New York, NY: Routledge.
- Leahy, R. L., & Hunt, T. M. (1983). A cognitive-developmental approach to the development of conceptions of intelligence. In R. L. Leahy (Ed.), *The child's construction of social inequality* (pp. 135-160). New York, NY: Academic Press.
- Lerner, R. M. (2002). *Adolescence: Development, diversity, context, and application*. Upper Saddle River, NJ: Prentice-Hall.
- MacKinnon, D. (2008). *Introduction to statistical mediation analysis*. New York, NY: Routledge.
- Marsh, H. W. (1990). The causal ordering of academic self-concept and academic achievement: A multiwave, longitudinal panel analysis. *Journal of Educational Psychology, 82*, 646–656. doi: 10.1037/0022-0663.82.4.646
- Marsh, H. W. & Köller, O. (2003). Bringing together two theoretical models of relations between academic self-concept and achievement. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *International advances in self research* (Vol. 1, pp. 17–45). Greenwich, CT: Information Age Publishing.
- March, H. W. & Craven, R. G. (2005). A reciprocal effects model of the causal ordering of self-concept and achievement. New support for the benefits of enhancing self-concept. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *New frontiers for self research* (Vol. 2, pp. 15–52). Greenwich, CT: Information Age Publishing.
- Maslow, A. H. (1954). *Personality and motivation*. New York, NY: Harper.
- McClelland, D. C. (1961). *The achieving society*. Princeton, N.J.: Van Nostrand.
- McClelland, D. C. (1985). *Human motivation*. London, UK: Scott, Foresman & Co.
- Montalvo, G., & Mansfield, E. (2007). Liking or disliking the teacher: Student motivation, engagement and achievement. *Evaluation and Research in Education, 20*(3), 144–158. doi: 10.2167/eri406.0
- Muthén, L. K., & Muthén, B. O. (2012). *Mplus User's Guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.
- Newcomb, A. F., Bukowski, W. M., & Pattee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average

- sociometric status. *Psychological Bulletin*, *113*, 99–128. doi: 10.1037/0033-2909.113.1.99
- Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, *91*, 328–346. doi: 10.1037/0033-295X.91.3.328
- Ollendick, T. H., Weist, M. D., Borden, M. G., & Greene, R. W. (1992). Sociometric status and academic, behavioral, and psychological adjustment: A five-year longitudinal study. *Journal of Consulting and Clinical Psychology*, *60*, 80–87. doi: 10.1037/0022-006X.60.1.80
- Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research*, *66*, 543–578. doi: 10.3102/00346543066004543
- Peetsma, T., Hascher, T., Van der Veen, I., & Roede, E. (2005). Relations between adolescents' self-evaluations, time perspectives, motivation for school and their achievement in different countries and at different ages. *European Journal of Psychology of Education*, *20*, 209–225, doi: 10.1007/BF03173553
- Petermann, F., & Winkel, S. (2007a). *FLM 7–13. Fragebogen zur Leistungsmotivation für Schüler der 7. bis 13. Klasse*. Manual. Frankfurt, Germany: Harcourt Test Services GmbH.
- Petermann, F., & Winkel, S. (2007b) Assessment of achievement motivation. In P. R. Zelic (Ed.), *Issues in the psychology of motivation* (pp.23–39). New York, NY: Nova Science Publishers.
- Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology*, *95*(4), 667–686. doi: 10.1037/0022-0663.95.4.667
- Preacher, K. J., & Hayes, A. F. (2008a). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879–891. doi: 10.3758/BRM.40.3.879
- Preacher, K. J., & Hayes, A. F. (2008b). Contemporary approaches to assessing mediation in communication research. In A. F. Hayes, M. D. Slater, & L. B. Snyder (Eds.), *The Sage sourcebook of advanced data analysis methods for communication research* (pp. 13–54). Thousand Oaks, CA: Sage.
- Radel, R., Sarrazin, P., Legrain, P., & Wild T. C. (2010). Social contagion of motivation between teacher and student: analyzing underlying processes. *Journal of Educational Psychology*, *102*, 577–587. doi: 10.1037/a0019051

- Raufelder, D. & Mohr, S. (2011). Zur Bedeutung sozio-emotionaler Faktoren im Kontext Schule unter Berücksichtigung neurowissenschaftlicher Aspekte. In A. Ittel, H. Merkens, L. Stecher, & J. Zinnecker (Eds.). *Jahrbuch Jugendforschung* (S. 74–96). Wiesbaden: VS Verlag.
- Raufelder, D., Bukowski, W., & Mohr, S. (2013). Thick description of the teacher-student relationship in the educational context of school: Results of an ethnographic field study. *Journal of Education and Training Studies*, 1(2), 1–18. doi: 10.11114/jets.v1i2.108
- Raufelder, D., Drury, K., Jagenow, D., Hoferichter, F., & Bukowski, W. (2013). Development and validation of the relationship and motivation (REMO) scales to assess students' perceptions of peers and teachers as motivators in adolescence. *Learning and Individual Differences*, 23, 182–189. doi: 10.1016/j.lindif.2013.01.001
- Raufelder, D., Jagenow, D., Drury, K., & Hoferichter, F. (2013). Social relationships and motivation in secondary school: 4 different motivation types. *Learning and Individual Differences*, 22, 89–95. doi: 10.1016/j.lindif.2012.12.002
- Reeve, J., Deci, E. L., & Ryan, R. M. (2004). Self-determination theory: A dialectical framework for understanding socio-cultural influences on student motivation. In D. M. McInerney & S. Van Etten (Eds.), *Big theories revisited* (pp. 31–60). Greenwich, CT: Information Age Press.
- Régner, I., Loose, F., & Dumas, F. (2009). Students' perceptions of parental and teacher academic involvement: Consequences on achievement goals. *European Journal of Psychology of Education*, 24, 263–277. doi: 10.1007/BF03173016
- Roeser, R. W., & Eccles, J. S. (1998). Adolescents' perceptions of middle school relation to longitudinal changes in academic and psychological adjustment. *Journal of Research on Adolescence*, 8, 123–158. doi: 10.1207/s15327795jra0801_6
- Rubin, K. H., Bukowski, W. M., & Parker, J. (2006). Peer interactions, relationships, and groups. In N. Eisenberg (Ed), *Handbook of child psychology: Social, emotional, and personality development* (pp. 571–645). New York, NY: Wiley.
- Rubin, K., Bukowski, W. M., & Laursen, B. (Eds.) (2009). *Handbook of peer interactions, relationships, and groups*. New York, NY: Guilford Press.
- Ryan, R. M., & Stiller, J. (1991). The social contexts of internalization: Parent and teacher influences on autonomy, motivation, and learning. In P. Pintrich & M. Maehr (Eds.), *Advances in motivation and achievement* (pp. 115–149). Greenwich, CT: JAP Press.

- Ryan, A. M. (2001). The peer group as a context for the development of young adolescent motivation and achievement. *Child Development, 72*(4), 1135–1150. doi: 10.1111/1467-8624.00338
- Schoene, C., Dickhaeuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2002). *Skalen zur Erfassung des schulischen Selbstkonzepts. Manual*. Goettingen, Germany: Hogrefe.
- Schunk, D. H. (1984, April). *Self-efficacy and classroom learning*. Paper presented at the meeting of the American Educational Research Association, New Orleans.
- Schwartz, D., Gorman, A. H., Nakamoto, J., & Toblin, R. L. (2005). Victimization in the peer group and children's academic functioning. *Journal of Educational Psychology, 97*, 425–435. doi: 10.1037/0022-0663.97.3.425
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and non-experimental studies: new procedures and recommendations. *Psychological Methods, 7*, 422–445. doi: 10.1037//1082-989X.7.4.422
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*(4), 571–581. doi: 10.1037/0022-0663.85.4.571
- Spector, P. E. (2006). Method variance in organizational research: Truth or urban legend? *Organizational Research Methods, 9*(2), 221–232. doi: 10.1177/1094428105284955
- Stipek, D. J. (1996). Motivation and instruction. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 85–113). New York, NY: Macmillan.
- Tresemmer, D. W. (1977). *Fear of success*. New York, NY: Plenum Press.
- Watt, H. M. G. (2004). Development of adolescents' self-perceptions, values and task perceptions according to gender and domain in 7th - through 11th- grade Australian students. *Child Development, 7*, 1556–1574. doi: 10.1111/j.1467-8624.2004.00757.x
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review, 92*, 548–573. doi: 10.1037/0033-295X.92.4.548
- Weiner, B. (1990). History of motivational research in education. *Journal of Educational Psychology, 82*, 616–622. doi: 10.1037/0022-0663.82.4.616
- Weiner, B. (1994). *Motivationspsychologie*. Weinheim, Germany: Beltz.
- Wentzel, K. R. (1998). Social relationships and motivation in middle school: the role of parents, teachers and peers. *Journal of Educational Psychology, 90*(2), 202–209. doi: 10.1037/0022-0663.90.2.202

- Wentzel, K. R. (2005). Peer relationships, motivation, and academic performance at school. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 279–296). New York, NY: Guilford.
- Wentzel, K. R. (2009a). Peers and academic functioning at school. In K. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 531–547). New York, NY: Guilford.
- Wentzel, K. R. (2009b). Students' relationships with teachers as motivational contexts. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 301–322). New York, NY: Routledge.
- Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology, 35*, 193–202. doi: 10.1016/j.cedpsych.2010.03.002
- Wentzel, K. R., Donlan, A., & Morrison, D. (2012). Peer relationships and social motivational processes. In A. M. Ryan & G. W. Ladd (Eds.), *Peer relationships and adjustment at school* (pp. 79–107). Charlotte, NC: Information Age.
- Wigfield, A., Eccles, J. S., & Rodriguez, D. (1998). The development of children's motivation in school contexts. In P. D. Pearson & A. Iran-Nejad (Eds.), *Review of research in education* (Vol. 23, pp. 73–118). Washington, DC: American Educational Research Association.
- Wigfield, A., & Eccles, J. S. (2001). *Development of achievement motivation*. San Diego, CA: Academic Press.
- Yuan, K.-H., & Bentler, P. M. (2004). On chi-square difference and z-tests in mean and covariance structure analysis when the base model is misspecified. *Educational and Psychological Measurement, 64*, 737–757. doi: 10.1177/0013164404264853
- Yussen, S. R., & Kane, P. T. (1985). Children's ideas about intellectual ability. In R. L. Leahy (Ed.), *The child's construction of social inequality* (pp. 207–241). New York, NY: Academic Press.
- Zusho, A., & Pintrich, P. R. (2001). Motivation in the second decade of life. In T. Urdan & F. Pajares (Eds.), *Adolescence and education* (pp.163–200). Greenwich, CT: Information Age.

CHAPTER 3

Study II

Do socio-motivational relationships predict motivation in adolescents with high and low school self-concepts?

3.1. Abstract

Considering the essential role that socio-motivational relationships at school play with respect to achievement motivation, this study examined the differences between students with a low school self-concept and students with a high school self-concept in a large sample of 7th and 8th grade students ($N= 1088$; $M_{Age}= 13.7$) in secondary schools in Brandenburg, Germany. Multi-group structural equation modelling was used to estimate the associations between the variables of socio-motivational support and achievement motivation. The results showed that students with a high school self-concept report higher levels of socio-motivational support than students with a low school self-concept, whereas a teacher plays a more important role in motivating low self-concept students. Furthermore, the results underline the importance of adjusting the teacher's support to the level of the student's school self-concept as one of the possible prevention and intervention strategies aimed at boosting adolescents' achievement motivation after the transition to secondary school.

Keywords: school self-concept, social relationships, motivation, adolescence

Do socio-motivational relationships predict motivation in adolescents with high and low school self-concepts?

Adolescence is a developmental period when individuals have to deal not only with physical maturation but also with changes in social structures around them (Wigfield & Eccles, 2001; McInerney & McInerney, 2006) brought about by transition from primary to secondary school (Eccles & Midgley, 1990; Burns, 1982). The combination of these changes is challenging for an adolescent student, which often results in a dramatic decline in achievement motivation (Eccles, Wigfield, & Schiefele, 1998; Peetsma, Hascher, Van der Veen, & Roede, 2005; Watt, 2004; Zusho & Pintrich, 2001). Self-concept becomes an especially important issue during this transitional period of time (Burns, 1982; Brinthaupt & Lipka, 2002).

In its broadest meaning, self-concept is a part of self-worth theory (Covington, 1992; Covington, 1998, 2000; Covington & Dray, 2002) and can be understood as a multifaceted construct that reflects an individual's perception of him- or herself⁶ (Shavelson, Hubner, & Stanton, 1976). Within the school context, school self-concept⁷ might be defined as an individual's set of beliefs about their own academic abilities, attributes and activities (cf. Schoene, Dickhaeuser, Spinath, & Stiensmeier-Pelster, 2003). Various studies provide evidence that school self-concept has both a direct and an indirect influence on students' performance (Multon, Brown, & Lent, 1991; Eckert, Schilling, & Stiensmeier-Pelster, 2006) and is positively related to achievement motivation (Areepattamannil, 2012).

The relation between school self-concept and academic achievement has been discussed for decades (Brookover, Thomas, & Paterson, 1964; Byrne, 1984, 1996; Brookover & Lezotte, 1979; Marsh & Richards, 1988; cf. Marsh & Köller, 2003) and resulted in the so-called reciprocal effects model (Marsh, 1990). This model argues that school self-concept and academic achievement are cyclically related and mutually reinforcing (Marsh & Craven, 2005). This is to say that a high school self-concept leads to better academic achievement, and better academic achievement in turn results in a higher school self-concept (Marsh & Craven, 2005). Moreover, high school self-concept plays a

⁶ There has been considerable confusion of utilization of the terms self-concept, self-worth and self-esteem, as they are often used interchangeably (Shavelson et al., 1976). However, each of these terms addresses a different facet of perception of self: while self-concept presents the most global view (Shavelson & Bolus, 1982), self-esteem addresses the evaluative component and also emphasizes self-worth and self-respect (Snow, Corno, & Jackson, 1996). Therefore, self-worth and self-esteem can be hierarchically placed as components of self-concept (Bear, Minke, & Manning, 2002; Harter, 1999). Addressing the issue of self-concept in the paper we refer to its broadest meaning.

⁷ or academic self-concept as in literature these terms are often used interchangeably.

significant role in buffering the potentially negative influence of failure in academic performance (Eckert, Schilling, & Stiensmeier-Pelster, 2006). In turn, academic achievement is strongly associated with achievement motivation (Wang, Haertel, & Walberg, 1993; Weinstein, 1998). The majority of theories prevailing in the sphere of motivation nowadays are based on the first “learned drive” theory (Atkinson, 1974) that defines achievement motivation as a learned drive, aimed at achieving success and avoiding failure.

In this context Petermann and Winkel (2007a) distinguish between achievement drive and perseverance and effort. While achievement drive includes dimensions of hope of success, learning and performance goals, perseverance and effort refers to time and effort students use in order to achieve these goals (Brophy, 2010). Various studies have shown that there is a positive association between school self-concept and achievement motivation, thus students with high school self-concepts have a more stable achievement motivation throughout a school year (Skaalvik & Valås, 1999; Marsh & Köller, 2003; Byrne, 1996). Furthermore, there is evidence that high self-concept is positively associated with perseverance (Skaalvik & Rankin, 1996; Skinner, Wellborn, & Connell, 1990) and effort (Skaalvik & Rankin, 1995).

In sum, considering the beneficial character of a high school self-concept for students’ academic motivation, support of a high school self-concept is of great importance in an educational context. This issue is particularly important in adolescence when students’ motivation tends to decline (Eccles, Wigfield, & Schiefele, 1998; Peetsma et al., 2005; Watt, 2004; Zusho & Pintrich, 2001). As various studies have shown, both peer relationships at school and relationships with teachers provide an important context for motivation among the majority of adolescent students (Flanagan, Erath, & Bierman, 2008; Harter, 1996; Raufelder & Mohr, 2011; Raufelder, Jagenow, Drury, & Hoferichter, 2013; Wentzel, 1998; 2009a, 2009b; Wentzel, Battle, Russell, & Looney, 2010). However, especially adolescents perceive their teachers as more distant and less friendly and supportive, compared to the teachers they had in elementary school (Harter, 1996; Hawkins & Berndt, 1985). At the same time, supportive teachers have more motivated students who show lower levels of anxiety, (Hartmut, 1978) and are generally more interested in school activities (Goodenow, 1993; Fraser & Fisher, 1982; Midgley, Feldlaufer, & Eccles, 1989; Skinner & Belmont, 1993). Additionally, teachers act as non-parental adult role models and provide support different to that of a parent (Raufelder, 2007; Midgley et al., 1989). In school setting teachers contribute to the classroom climate,

and assess a student as a person, which has a certain impact on his or her self-concept (Jennings & Greenberg, 2009). Therefore, the development and maintenance of positive teacher-student relationships should become one of the main goals during the period of transition from primary to secondary school.

Whereas teachers' primary role is the support of academic achievement and motivation (Wentzel et al., 2010), peers are important for providing emotional support (Azmitia, Cooper, & Brown, 2009), understanding, advice and comfort (Harter, 1996; Juvonen & Wentzel, 1996; Kindermann, 1993; Ladd, Herald-Brown, & Kochel, 2009; Rubin, Bukowski, & Laursen, 2009; Rubin, Bukowski, & Parker, 2006; Wentzel, 2009a, 2009b; Wentzel et al., 2010), which might also influence academic motivation and achievement (Achermann et al., 2006; Birch & Ladd, 1996; Kindermann, McCollam, & Gibson, 1996). That makes the transition from primary to secondary school in adolescence even more challenging since youth have to adjust to a new peer group, as well as coordinate old and new friendships. A possible outcome of the process of adjustment might be jealousy and feelings of exclusion (Azmitia, Kamprath, & Linnet, 1998). The nature of peer relationships in adolescence is also complex (Bukowski, Simard, Dubois, & Lopez, 2011) and negative peer relationships or maladjustment to a new peer group may have dramatic outcomes such as low achievement motivation, low self-worth, and poor school performance (Buhs, Herald, & Ladd, 2006; Coie, Lochman, Terry, & Hyman, 1992; DeRosier, Kupersmidt, & Patterson, 1994; Ollendick, Weist, Borden, & Greene, 1992). Therefore, socio-motivational relationships with peers also play an important role in educational context.

Although there is a large body of research on the association between social relationships and motivation, less is known about possible differences between students with high and low school self-concepts.

3.2. Objective and Hypotheses

Based on the empirical background outlined above, the current study examines the relationships between the perception of socio-motivational relationships, achievement drive and perseverance and effort among students with high and low school self-concept. Specifically, the current study explores the following two hypotheses:

Hypothesis 1: Students possessing (1) low school self-concept and (2) high school self-concept will differ in their perception of teacher-student relationships, teachers as positive motivators, student-student relationships, peers as positive motivators, as well as

in perseverance and effort and achievement drive. As students with high general self-concept tend to show greater motivation (Hay, Ashman, & van Kraayenoord, 1998) and report better relationships with their peers and teachers (Azmitia, Ittel, & Radmacher, 2005), we expect that they will report higher scores on each variable (teacher-student relationships, teachers as positive motivators, student-student relationships, peers as positive motivators, as well as in perseverance and effort and achievement drive) in comparison to students with low school self-concept.

Hypothesis 2: Based on the benefits of positive social relationships for achievement motivation, it is hypothesized that positive teacher-student and student-student relationships, as well as perceptions of teachers and peers as positive motivators will predict greater perseverance and effort and achievement drive. Given that school self-concept functions as a positive predictor of achievement motivation (Guay et al., 2010; Areepattamannil, 2012), and students with a high general self-concept show better relationships with peers and teachers (Azmitia, Ittel, & Radmacher, 2005; Chen et al., 2011) it is hypothesized the relationships between the included variables will be stronger for students with high school self-concept.

3.3. Method

Participants

The sample consists of 1088 seventh- and eighth- grade students aged 12-15 years ($M_{\text{age}} = 13.7$; $SD = 0.53$) attending secondary schools in Brandenburg, Germany. This choice of age has been based on existing research on students' achievement motivation (Harter, 1996), and evidences a motivational decline that starts after the transition to secondary school, rapidly decreases within the first three years of secondary school, and reaches its lowest point in the 9th grade (Eccles et al., 1998; Watt, 2004; Zusho & Pintrich, 2001). The participating schools ($N = 23$) are a result of random choice. In the sample both boys and girls are represented (46.1%, $N = 501$ and 53.9%, $N = 587$ consistently). The data on ethnic background and socio-economic status of students is not provided due to the low percentage of ethnic minorities in Brandenburg, and the complexity of German law (it is not allowed to ask a first party (students) for information about a second party (e.g., income of the parents)).

Procedure

In order to conduct our research we firstly obtained official permission from the Governmental Department of Education, Youth and Sport of Brandenburg in summer 2011. Secondly we got school and parental permissions, which determined the participating students. Finally we collected data on 2 consecutive school days in each of the participating schools in the autumn term of 2011. Students were thoroughly instructed on how to fill in the forms and use Likert scales. They were also informed that participation was voluntary and all their answers would be treated anonymously. Our research is based on self-report data, considering both its advantages and disadvantages (Chan, 2009) which will be discussed in detail in the “Strengths, Limitations and Future Research” section of this article.

Measures

All measures used in this study are well-established and validated instruments for German adolescent students.

Absolute School Self-Concept (ASSC) ($\alpha = .86$) was measured with the help of a subscale of SESSKO (Skalen zur Erfassung des schulischen Selbstkonzepts) by Schoene, Dickhaeuser, Spinath, and Stiensmeier-Pelster (2002). These scales were deployed for measurement of school self-concept in German speaking countries and validated on 3326 students (grades 5 to 9). The absolute school self-concept scale we used showed the internal consistency of $\alpha = .84$; Split-half reliability was $.84$. It consisted of 5 items measuring one’s own perception of his or her current abilities at school without any social comparison or comparison according to some definite criterion. Each item suggested a sentence with missing data ranging from 1 (most negative) to 5 (most positive): e.g., “Tasks I have at school are very difficult//very easy for me”⁸.

We built high and low self-concept groups following the instructions of the SESSKO manual according to the result interpretation tables; which included the raw values, percentage, T-value and T-value Band. The low school self-concept group had the lower end of the T-value band below 50, whereas the high school self-concept group had the

⁸ The items were used in German and solely translated for the current work to provide examples for international readers.

upper end of the T-value band above 50. As a result the group of students with a high school self-concept included 624 students (303 boys, 321 girls), and the group of students with a low school self-concept consisted of 435 students (184 boys, 251 girls).

Achievement Drive (AD) ($\alpha = .83$) was assessed with a scale of the Achievement Motivation Questionnaire for Students (FLM) in 7th to 13th grade by Petermann and Winkel (2007a). It explored how important it was for students to expand their own competences, show own abilities, and how well they believed they could reach their goals. In the original validation study it had an acceptable reliability ($\alpha = .73$, $N = 811$). The scale consisted of 8 items with answers ranging from “(1) it is not true at all” to “(5) it is absolutely true” on a 5-point Likert scale. The items that comprised the scale assessed hope of success, (e.g., “I prefer to solve challenging tasks”) as well as learning goals, (e.g., “when I have a chance I try to improve my own achievements”) and performance goals (e.g., “I want to belong to best students in school”).

Perseverance and Effort (PE) ($\alpha = .75$) was assessed with a scale of the Achievement Motivation Questionnaire for Students (FLM) in 7th to 13th grade by Petermann and Winkel (2007a). In the original validation study of the instrument this scale showed a good reliability ($\alpha = .74$, $N = 813$). The scale assessed perseverance of a student with which he or she followed his or her goals. This dimension included aspects of hope of success combined with such volitional components as conscious concentration, self-control, and discipline (e.g., “I plan a lot of time to get ready for exams”). The scale consisted of 8 items with answers ranging from “(1) it is not true at all” to “(5) it is absolutely true” on a 5-point Likert scale.

Socio-Motivational Relationships. While addressing the issue of socio-motivational relationships two different dimensions were included: (1) the perceived quality of the social relationships at school, and (2) the perceived positive role that peers and teacher play in students’ motivation.

In order to assess the first dimension we used the Student-Student Relationships questionnaire (SSR) and the Teacher-Student Relationships questionnaire (TSR) from the Program for International Student Assessment (PISA) (Kunter et al., 2002). In the SSR scale the participants were to rate six statements concerning the social climate in class (e.g., “Many students are envious, if others have better grades”). The scale ranged from 1 (definitely does not apply) to 4 (definitely applies) and showed an internal consistency of

$\alpha = .70$. As the original scale measured negative SSR items were further recoded for the following analyses and easier interpretation of the results. In the TSR scale the students rated five statements such as “Most teachers treat me fairly” or “Most teachers care about the students’ well-being in school”. The scale ranged from 1 (definitely does not apply) to 4 (definitely applies) and had an $\alpha = .78$.

With the aim of measuring the influence of teachers and peers as positive motivators two subscales from the Relationship and Motivation (REMO) scale (Raufelder, Drury, Jagenow, Hoferichter, & Bukowski, 2013) were involved. The REMO scale was developed and validated to assess socio-motivational dependency, which existed when the motivation of students was affected by other’s motivation, learning behavior, or perceived support. In the school context a student’s motivation could be predominantly affected by motivation, learning behavior, or social support from peers and/or through teachers’ motivation and perceived support (Raufelder, Drury, Jagenow, Hoferichter, & Bukowski, 2013; Wentzel, 2009a, 2009b). The subscale “teachers as positive motivators” (TPM) ($\alpha = .78$) consisted of 6 items assessing teachers as motivators (e.g., “When a teacher notices that I have tried my best, I will try to give my best again in the future.”). The subscale “peers as positive motivators” (PPM) ($\alpha = .80$) was comprised of 9 items concerning the perception of motivation from other students, (e.g., “When my friends learn, I am also motivated to learn more.”). Responses for both subscales were scored on a 4-point Likert scale ranging from “strongly disagree” to “strongly agree”. The split half reliability of the scores of the original validation (PPM: $\alpha = .78$; TPM: $\alpha = .81$) as well as the re-test reliability scores (PPM: $\alpha = .70$; TPM $\alpha = .75$) were satisfactory (Raufelder, Drury, Jagenow, Hoferichter, & Bukowski, 2013).

3.4. Statistical Analyses

Bivariate Correlations

We conducted bivariate correlations between all latent variables: TSR, SSR, TPM, PPM, achievement drive and perseverance and effort for students with a high school self-concept and students with a low school self-concept separately using Mplus.

Multi-group CFA

The multivariate analysis of variance (MANOVA) is the most commonly used instrument to test the group mean differences on a set of observed variables (Dimitrov,

2006). However, due to its limitations, it is more appropriate when groups are compared on a construct, which “emerges” as a linear composite of the observed variables. In contrast, structural equation modeling (SEM) is more applicable to a latent variable system in which the construct has a causal influence on the observed variables (Bollen, 1989). Moreover SEM eliminates the random error of measurement for the observed variables associated with the latent variable(s) (Aiken, Stein, & Bentler, 1994; Dimitrov, 2006). A great advantage of multi-groups CFA is the examination of all aspects of measurement invariance and population heterogeneity across groups (Brown, 2006). We examined the equivalence of all measurement and structural parameters of the factors across the variables in a five-step process (Brown, 2006; Christ & Schlüter, 2012). We (1) tested the CFA model separately in each group, (2) tested for equal form invariance (identical factor structure), (3) tested the equality of factor loadings (metric invariance), (4) tested the equality of indicator intercepts (scalar invariance) and (5) tested the equality of factor covariances. Based on the results of these analyses we subsequently tested for group mean differences.

We started the analysis with the least restricted solution (equal form), and subsequent models evaluated entailed increasingly restrictive constraints (using nested χ^2 methods). As such the variability of the fully constrained model rests on the results of the less restrictive models. This method also allows testing the partial invariance which entails comparing group means when some, but not all of the factor loadings and intercepts are invariant.

Multi-Group Structural Equation Modeling (MGSEM)

The hypothesized relations between the variables of interest were assessed with the help of Structural Equation Models (SEM) with Mplus version 7.0 (Muthén & Muthén, 2012) and maximum likelihood estimation on a correlation matrix. Multi-group SEM was performed to test if socio-motivational relationships predict achievement drive as well as perseverance and effort for students with low and high school self-concept. In order to test for potential differences among students with high and low school self-concept in the SEM a step wise multi-group analysis was used by applying an (1) unrestricted model, a (2) semi-restricted model, and a (3) fully restricted model which were subsequently compared by using an χ^2 difference test (Geiser, 2010; Yuan & Bentler, 2004). In the first step the unrestricted model in which all parameters are free assumes that the factor loadings, residual variances, and regression coefficients may differ among students with high and

low school self-concept hence placing no restriction on the parameters whatsoever. In a second step the semi-restricted model was applied assuming equal factor loadings, free residual variances, and free regression coefficients among students with high and low school self-concept. In a third step the fully restricted model was applied, assuming equal factor loadings, equal residual variances, and equal regression coefficients across students with high and low school self-concept.

We conducted SEMs accounting for nesting in classes (“type is complex”), an approach proposed by Asparouhov (2005) for complex survey data. This multilevel approach corrects for standard error biases created by the nested nature (1088 students in 72 classes) of our data. To account for missing data models were estimated with full information maximum likelihood (FIML) using Mplus version 7.0 (Muthén & Muthén, 2012).

Model fit was estimated in Mplus with the help of 5 primary fit indices as recommended by Hu and Bentler (1999): Chi-Square Test of Model Fit (χ^2), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Standardized Root Mean Square Residuals (SRMR). The χ^2 -difference test was used to compare the baseline model to the SEM (Geiser, 2010). Moreover to take into account the proportion of explained variance we also estimated the value of the determination coefficient r^2 for both models. All statistical limitations will be discussed in detail in the “Strengths, Limitations and Future Directions” section finally.

3.5. Results

Bivariate Correlations

Bivariate correlations between the latent variables of achievement motivation, socio-motivational relationships were conducted for both low and high absolute school self-concept groups separately (see Table 1) using Mplus version 7.0 (Muthén & Muthén, 2012).

The indices indicated a satisfactory fit for this model ($\chi^2(500) = 794.87, p < .001$; $CFI = .94$, $TLI = .95$; $RMSEA = .03$; $SRMR = .05$). Both groups did not differ in the correlations of the involved variables with the exception of the correlation of student-student relationships and perseverance and effort, which was significant only for the high school self-concept group ($r = .12$; $p < .05$).

Table 1. Intercorrelations between the latent variables of social and motivational relationships, perseverance and effort and achievement drive

<i>low school self-concept</i>						
Measure	2	3	4	5	6	Range
1. TPM	.15/.54***	.07/.29***	-.05/-.26**	.12/.34***	.14/.36***	1-4
2. PPM		.08/.33**	-.03/-.16	.13/.35***	.16/.42***	1-4
3. TSR			.04/.24*	.12/.41**	.07/.22*	1-4
4. SSR				.01/.03	-.08/-.28***	1-4
5. PE					.26/.52***	1-5
6. AD					-	1-5
<i>high school self-concept</i>						
Measure	2	3	4	5	6	Range
1. TPM	.11/.52***	.04/.24**	-.03/-.16*	.10/.27***	.08/.24***	1-4
2. PPM		.04/.21**	-.02/-.08	.10/.25***	.10/.29***	1-4
3. TSR			.05/.32***	.12/.38***	.04/.11*	1-4
4. SSR				.04/.12*	-.08/-.25***	1-4
5. PE					.16/.26***	1-5
6. AD					-	1-5

Note: TPM = Teacher as positive motivators; PPM = Peers as positive motivators; TSR = Teacher-student relationships; SSR = Student-Student Relationships; PE = Perseverance and Effort, AD = Achievement drive; correlations are presented as unstandardized coefficients (first position) and standardized coefficients (second position); * $p < .05$, ** $p < .01$, *** $p < .001$.

Comparing groups on latent variables: Multi-group CFA

Group mean comparisons were conducted on the following latent variables: achievement motivation (achievement drive and perseverance and effort), social relationships (teacher-student relationships and student-student relationships), and motivational relationships (teachers as positive motivators and peers as positive motivators). In accordance with Brown's 5-step procedure (Brown, 2006; Christ & Schlüter, 2012) we examined the equivalence of all measurement and structural parameters of the factors across the variables respectively: we (1) tested the CFA model separately in each group (see Table 2), (2) tested for equal form invariance (identical factor structure), (3) tested the equality of factor loadings (metric invariance), (4) tested the equality of indicator intercepts (scalar invariance) and finally (5) tested the equality of factor covariances (step2 - step5: see table 3).

Table 2. Model Fit Indices for Achievement Motivation, Social Relationships and Motivational Relationships

Construct	Model	df	χ^2	p	CFI	RMSEA	90% CI	SRMR
Achievement	Form Invariance:	19	18.471	.49	1.00	.00	(.00-.04)	.02
Motivation	Low ASSC							
	Form Invariance:	19	56.478	.00	.98	.06	(.04-.07)	.04
	High ASSC							
	Model 0	38	74.949	.00	.99	.04	(.03-.06)	.04
	Model 1	46	89.262	.00	.98	.04	(.03-.06)	.06
	Model 2	52	115.772	.00	.98	.05	(.04-.06)	.06
	Model 2b	50	94.494	.00	.98	.04	(.03-.05)	.06
	Model 3	51	113.371	.00	.98	.05	(.04-.06)	.06
Social	Form Invariance:	43	71.566	.00	.96	.04	(.02-.06)	.04
Relationships	Low ASSC							
	Form Invariance:	43	118.831	.00	.94	.05	(.04-.07)	.05
	High ASSC							

	Model 0	86	190.379	.00	.95	.05	(.04-.06)	.04
	Model 1	97	199.316	.00	.95	.05	(.04-.05)	.09
	Model 2	106	246.115	.00	.93	.05	(.04-.06)	.05
	Model 2b	105	206.563	.00	.95	.04	(.04-.05)	.05
	Model 3	104	207.189	.00	.95	.04	(.04-.05)	.05
Motivational	Form Invariance	52	78.888	.01	.98	.03	(.02-.05)	.03
Relationships	Low ASSC							
	Form Invariance	52	118.281	.00	.95	.05	(.03-.06)	.04
	High ASSC							
	Model 0	104	197.169	.00	.97	.04	(.03-.05)	.04
	Model 1	116	226.145	.00	.96	.04	(.03-.05)	.07
	Model 1b	114	212.275	.00	.96	.04	(.03-.05)	.05
	Model 2	124	240.057	.00	.96	.04	(.03-.05)	.06
	Model 2b	122	226.336	.00	.96	.04	(.03-.05)	.05
	Model 3	123	226.390	.00	.96	.04	(.03-.05)	.05

Note: Model 0 = Baseline all groups - equal form (form invariance); Model 1 = equality of factor loadings (metric invariance); Model 1b = partial metric invariance; Model 2 = equality of intercepts (scalar invariance), Model 2b = partial scalar invariance; Model 3 = Model 2b with covariance constraints.

Achievement Motivation

When examining the construct of achievement motivation across the two groups we found identical factor structure (form invariance), partial equality of factor loadings (partial metric invariance), and partial equality of indicator intercepts (partial scalar invariance). According to Brown (2006) these findings allow for the group mean comparisons on achievement motivation. Using the group of students with low absolute school self-concept as the reference group, mean comparisons showed the students with high absolute school self-concept displayed significantly more perseverance and effort ($\beta = .402, p < .001$) and achievement drive ($\beta = .715, p < .001$). Furthermore, the results showed that students with

high and low school self-concept significantly differed in the covariance between the two variables (see Table 3).

Social Relationships

When examining the construct of social relationships across the two groups we found identical factor structure (form invariance), equality of factor loadings (full metric invariance), as well as partial equality of indicator intercepts (partial scalar invariance). According to Brown (2006) these findings allow for the group mean comparisons on social relationships. Using the group of students with low absolute school self-concept as the reference group, mean comparisons showed that the students with high absolute school self-concept did not differ significantly from those with low self-concept in the quality of relationships with peers ($\beta = -.034, p = .676$) At the same time, students with high absolute self-concept proved to have significantly better teacher-student relationships ($\beta = .531, p < .001$). In addition, the results showed that students with high and low school self-concept did not significantly differ in the covariance between the two variables (see Table 3).

Motivational Relationships

When examining the construct of socio-motivational relationships across the two groups we found identical factor structure (form invariance), partial equality of factor loadings (partial metric invariance), and partial equality of indicator intercepts (partial scalar invariance). According to Brown (2006) these findings allow for the group mean comparisons on motivational relationships. Using the group of students with low absolute school self-concept as the reference group, mean comparisons showed that the students with high absolute school self-concept did not differ significantly from those with low self-concept in the perception of peers as motivators ($\beta = .108, p = .143$). At the same time, students with higher absolute self-concept perceived their teachers as motivators to a higher extent ($\beta = .184, p = .019$). Furthermore, the results showed that students with high and low school self-concept did not significantly differ in the covariance between these two variables (see Table 3).

Table 3. Testing for Equality of Form, Factor Loadings and Intercepts: χ^2 -Difference Tests

Construct	Step	Model	$\Delta \chi^2$	p	Δdf
Achievement					
Motivation	2	Model 0 (Baseline)			
	3	Model 1 compared to baseline	14.313	.07	8
	3	Model 2 compared to Model 1	26.51	.00	6
	4	Model 2b compared to Model 1	5.232	.26	4
	5	Model 3 compared to Model 2b	18.877	.00	1
Social					
Relationships	2	Model 0 (Baseline)			
	3	Model 1 compared to Baseline	8.937	.63	11
	3	Model 2 compared to Model 1	46.799	.00	9
	4	Model 2b compared to Model 1	7.247	.30	6
	5	Model 3 compared to Model 2b	0.626	.43	1
Motivational					
Relationships	2	Model 0 (Baseline)			
	3	Model 1 compared to Baseline	28.976	.00	12
	3	Model 1b compared to Baseline	15.106	.13	10
	4	Model 2 compared to Model 1b	27.782	.00	10
	4	Model 2b compared to Model 1b	14.061	.08	8
	5	Model 3 compared to Model 2b	0.054	.82	1

Note: Model 0 = Baseline all groups - equal form (form invariance); Model 1 = equality of factor loadings (metric invariance); Model 1b = partial metric invariance; Model 2 = equality of intercepts (scalar invariance), Model 2b = partial scalar invariance; Model 3 = Model 2b with covariances.

Multi-Group Structural Equation Modeling

In order to analyse the abovementioned interrelation patterns in accordance with hypothesis 2 a three-step multi-group analysis was conducted. All three models were constructed consisting of direct effects of (a) TPM/PPM/TSR/SSR on achievement drive, and (b) of TPM/PPM/TSR/SSR on perseverance and effort (see Figures 1 and 2). An unrestricted model with all parameters free was investigated as a first step (see Table 4). The indices indicated a satisfactory fit for this unrestricted model ($\chi^2 (470) = 751.44$, $p < .001$; $CFI = .94$; $TLI = .93$; $RMSEA = .03$; $SRMR = .05$).

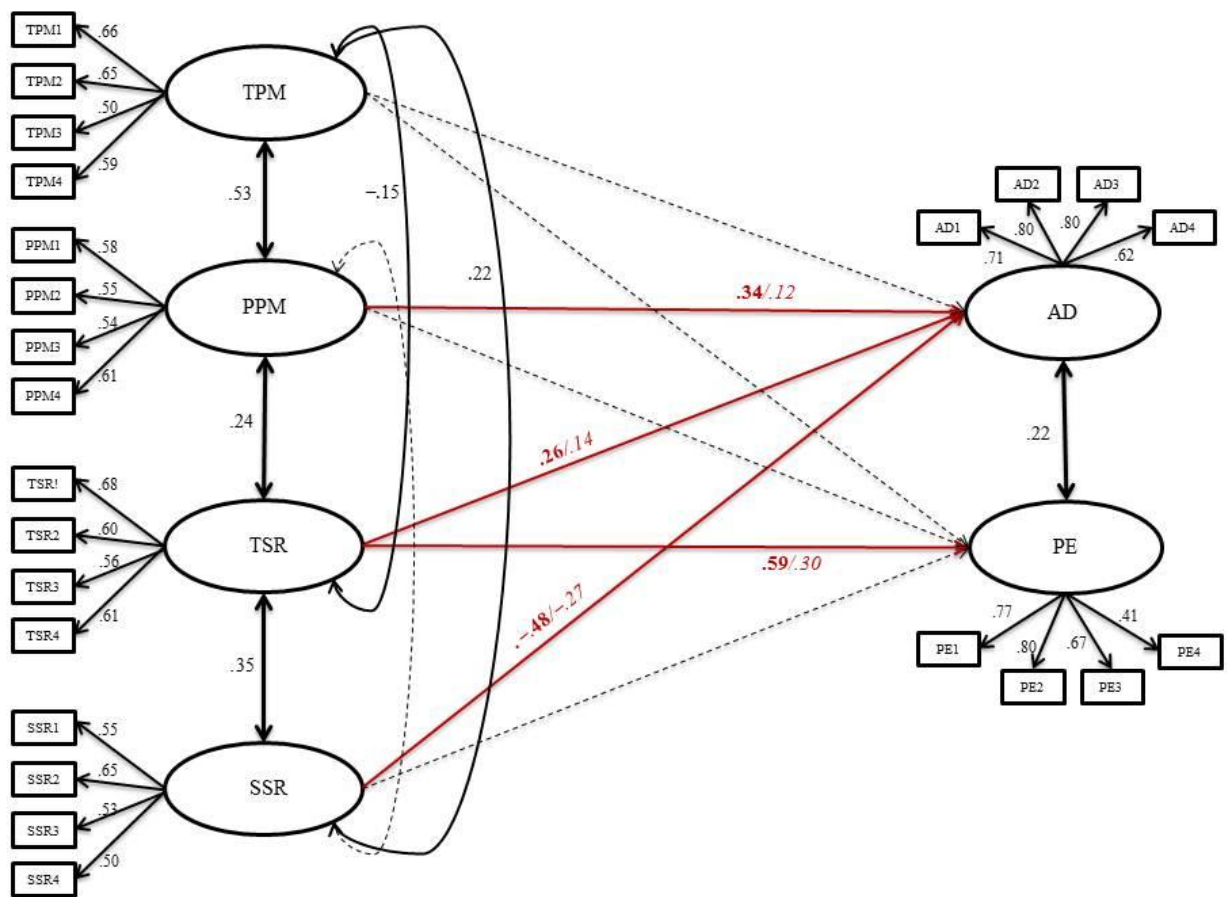


Figure 1. High School Self-Concept Group. PPM= Peers as Positive Motivators, TPM= Teachers as Positive Motivators, SSR=Student-Student Relationships, TSR= Teacher-Student Relationships, PE= Perseverance and Effort, AD=Achievement Drive; Significant effects shown as unstandardized coefficients (B) in bold face and standardized coefficients (β) in italics; bold pathways are significant at $p < .05$; dotted pathways are not significant.

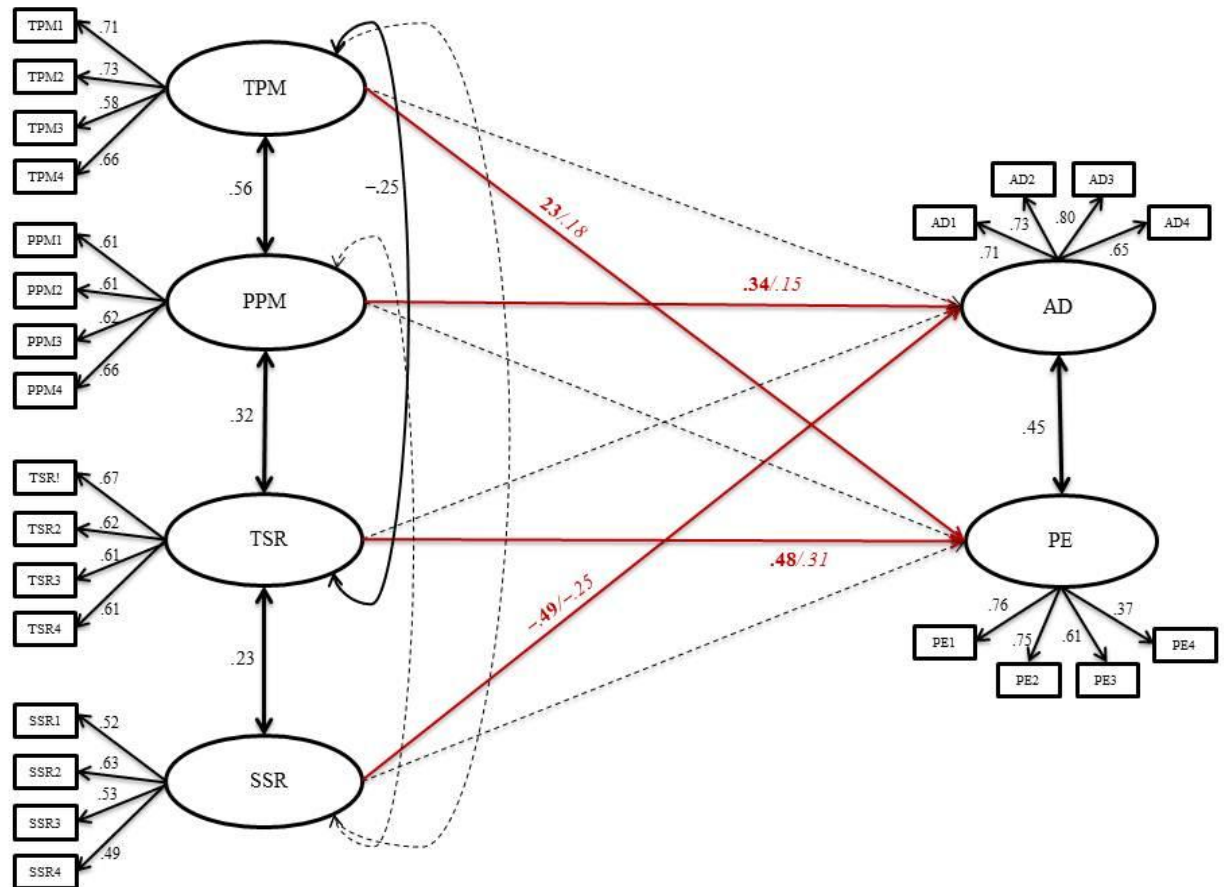


Figure 2. Low School Self-Concept Group. PPM= Peers as Positive Motivators, TPM= Teachers as Positive Motivators, SSR=Student-Student Relationships, TSR= Teacher-Student Relationships, PE= Perseverance and Effort, AD=Achievement Drive; Significant effects shown as unstandardized coefficients (B) in bold face and standardized coefficients (β) in italics; bold pathways are significant at $p < .05$; dotted pathways are not significant.

Table 4. Model Fit Indices for the Unrestricted Model, the Semi-Restricted Model and Fully Restricted Model

Indices	Unrestricted Model	Semi-restricted Model*	Fully restricted Model
χ^2 -Test of Model Fit	751.44	794.87	845.78
(df)	470	500	514
p(χ^2)	< .001	< .001	< .001
CFI/TLI	.94/.93	.94/.94	.93/.93
RMSEA (90% CI)	.03 (.03-.04)	.03 (.03-.04)	.04 (.03-.04)
SRMR	.05	.05	.05

Note: df = degrees of freedom, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Square Residuals; * In favor of a good model fit six intercepts were set free between the groups (partial measurement invariance).

In a second step a semi-restricted model was applied assuming equal factor loadings, free residual variances, and free regression coefficients among students with high and low school self-concept. This model also indicated good fit indices (χ^2 (500) = 794.87, $p < .001$; CFI = .94; TLI = .94; RMSEA = .03; SRMR = .05). Thereupon a χ^2 -difference test (Christ & Schlüter, 2012; Yuan & Bentler, 2004) was conducted to compare the unrestricted model to the semi-restricted model. The test did not reach significance ($\chi^2_{(df=30, N=1059)} = 42.46, p = .07$) (Satorra & Bentler, 2001) which allows for group comparison for the strength of the regression paths.

In a third step a fully restricted model was applied assuming equal factor loadings, equal residual variances, and equal regression coefficients across both groups of school self-concept. The indices indicated a satisfactory fit for this fully restricted model (χ^2 (514) = 845.78, $p < .001$; CFI = .93; TLI = .93; RMSEA = .04; SRMR = .05), though it was worse than for the semi-restricted model (see Table 4). The χ^2 -difference test (Christ & Schlüter, 2012; Yuan & Bentler, 2004) between the semi-restricted and the fully restricted model reached the level of significance ($\chi^2_{(df=14, N=1059)} = 35.27, p < .001$) (Satorra & Bentler, 2001) which meant the semi-restricted multi-group model replicated the data better than the fully restricted model. In other words, the interrelations among the study variables

exhibited different patterns for students with high, and students with low school self-concept (Geiser, 2010; Yuan & Bentler, 2004).

For the semi-restricted multi-group model not all specified paths were significant. In the group of students with low school self-concept the teacher-student relationships ($B = .48$, $\beta = .31$, $SE = .14$, $p = .001$) as well as perception of teachers as positive motivators ($B = .23$, $\beta = .18$, $SE = .15$, $p = .033$) predicted perseverance and effort. In contrast neither the student-student relationships ($B = .04$, $\beta = .02$, $SE = .16$, $p = .817$), nor peers as positive motivators ($B = .19$, $\beta = .15$, $SE = .13$, $p = .137$) acted as predictors of perseverance and effort. However the direct effects from both student-student relationships on achievement drive ($B = -.49$, $\beta = -.25$, $SE = .16$, $p = .002$), as well as from peers as positive motivators on achievement drive ($B = .34$, $\beta = .15$, $SE = .18$, $p = .045$) were significant for students with low school self-concept. In contrast, neither the teacher-student relationships ($B = .28$, $\beta = .17$, $SE = .19$, $p = .149$) nor perception of teachers as positive motivators ($B = .15$, $\beta = .11$, $SE = .12$, $p = .236$) predicted achievement drive of students with low school self-concept.

For students with high school self-concept only the teacher-student relationships were identified as a predictor of perseverance and effort ($B = .59$, $\beta = .30$, $SE = .13$, $p < .001$). In addition the direct effects between the teacher-student relationships and achievement drive ($B = .26$, $\beta = .14$, $SE = .14$, $p = .054$) between the student-student relationships and achievement drive ($B = -.48$, $\beta = -.27$, $SE = .12$, $p < .001$), as well as between peers as positive motivators and achievement drive ($B = .34$, $\beta = .12$, $SE = .15$, $p = .021$) were found to be significant.

In contrast, teachers as positive motivators predicted neither achievement drive ($B = .09$, $\beta = .05$, $SE = .11$, $p = .392$), nor perseverance and effort ($B = .25$, $\beta = .14$, $SE = .14$, $p = .070$) in the group of students with high school self-concept. Furthermore peers as positive motivators ($B = .21$, $\beta = .12$, $SE = .15$, $p = .148$) and the student-student-relationships ($B = .10$, $\beta = .05$, $SE = .12$, $p = .380$) were not identified as predictors of perseverance and effort.

3.6. Discussion

In order to deepen our knowledge about the role of adolescents' school self-concept the present study examined whether socio-motivational relationships at school predicted

achievement motivation to the same extent for students with low and high school self-concept.

In general our findings partially supported the hypothesized differences between the high and low self-concept groups. The results of the correlation matrix in the first step showed that the variables of socio-motivational support were associated with achievement motivation variables in both groups. However the association between the student-student relationships and perseverance and effort was significant for students with a high school self-concept only (see Table 1) which could mean students with high school self-concepts have perseverance and effort due to interpersonal relationships with their classmates, whereas students of the low self-concept group might have other resources. However, the multi-group CFA provided information that both groups did not differ significantly in the quality of socio-motivational relationships with peers. This finding was further supported by the MGSEM that showed that peer-oriented socio-motivational relationships did not predict perseverance and effort either in students with high school self-concept or in students with low school self-concept. As there were significant associations between PPM and PE, but no significant regression path in the MGSEM respectively, it could indicate a causal ordering of the variables that should be tested in future longitudinal analysis.

At the same time, both groups differed significantly in the perception of socio-motivational relationships with teachers (TSR as well as TPM). The group of students with the high school self-concept compared to the group with low self-concept reported better teacher-student relationships and more motivational support from teachers. These findings suggest students with a high self-concept might have better teacher-student relationships, and could perceive their teachers as motivators to a higher extent. This might be explained by an assumption that teachers treat high and low self-concept students differently, which Hay, Ashman, and van Kraayenoord (1998) showed for elementary school teachers. In other words students with a high self-concept might get more attention from teachers and more positive feedback for their achievement, which in turn could strengthen their motivation for further work (Harris & Rosenthal, 1985). This might imply students with a low school self-concept could feel disadvantaged; and especially these students need more teachers' support. Future research would be needed to clarify if this phenomenon is similar to the so-called "Pygmalion effect" (Rosenthal & Jacobson, 1968).

Furthermore in line with our first hypothesis the results of the latent mean comparison revealed students with high school self-concept showed more perseverance and effort as well as achievement drive, which might be partially explained by relations

outlined above. This finding is in line with research by Coopersmith (1967) that evidenced students with high general self-concept are more persistent at performing tasks. Other possible factors influencing this association should be an objective of further research.

In sum our first hypothesis could only partially be confirmed; the groups differed in their perception of socio-motivational support from teachers and achievement motivation variables (and, as expected, students from the high self-concept group had higher scores), but not in respect of the association with the peer socio-motivational support variables.

The structural equation modeling used in the study to check for assumptions of our second hypothesis extended these results; for the low school self-concept group both teacher variables predicted perseverance and effort, but not achievement drive. At the same time for the high self-concept group the teacher-student social relationships (but not the motivational relationships) functioned as a predictor of both perseverance and effort, and achievement drive.

The indicated differences might be explained by the assumption that one of the sources for motivation in the school context is the desire to meet the teacher's demands (Brophy, 2010). As students with low general self-concept are particularly sensitive to characteristics of their teachers (Midgey et al., 1989), and self-concept and achievement are cyclically related (Marsh, 1990), the low achievers group may feel teachers are demanding less from them than from high achieving students (Archambault, Janocz, & Choinard, 2012). This might provide other (or possible lack of) sources for their achievement drive in this association, but not obligatorily reduce their perseverance and effort applied to cope with the school program.

Previous achievements of high self-concept students could also play a role in forming positive teachers' beliefs (and better teacher-student relationships), which might in turn have a positive effect on their further achievement motivation (Archambault, Janocz, & Choinard, 2012). At the same time for students with a high self-concept the perception of teachers as positive motivators might rather contribute to classroom climate (Urduan & Schoenfelder, 2006) than directly affect their achievement motivation.

For both low and high student self-concept students peer-oriented socio-motivational variables (SSR and PPM) predicted achievement drive, but not perseverance and effort. Furthermore, the results for both groups indicated a negative association of student-student relationships and achievement drive. A possible reason for this could be the competitive nature of achievement drive which might be defined as an ambition to be better than others; desire to excel or will to win. Therefore better student-student relationships may

imply less competition in classroom and together with it less achievement drive (McClelland, 1961). These results stand in line with the work of Preckel, Niepel, Schneider, and Brunner (2013) who explored the social aspect of self-concept and concluded that high social self-concept (and therefore good relationships to peers) does not go together with higher achievement. Therefore our second hypothesis also could only partially be confirmed: though socio-motivational relationships were associated with achievement motivation variables for both students with low and high school self-concept, not every expected association could be confirmed.

The results underlined the differences between the two groups in socio-motivational relationships with teachers as well as achievement motivation and expanded our previous research on the mediating role of socio-motivational support in the association of self-concept and achievement motivation (Bakadorova & Raufelder, 2013). In contrast to the hypothesized relationships there was not much difference in perception of peers as positive motivators and student-student relationships between the groups. Therefore both our hypotheses could only partially be confirmed. Nevertheless the identified differences emphasized the importance of socio-motivational support from teachers for the low self-concept group.

These findings extend existing evidence about the role teachers play in the school context, but also support the assumption that teachers may not be equally supportive and motivating for all students. In other words the pattern of teacher-student interaction after the transition from primary to secondary school might need improvement and adjustment to the self-concept of students, which could have positive outcomes on achievement motivation.

Our findings extend current research by differentiating between the low and high self-concept students while exploring the role of socio-motivational support from peers and teachers on achievement motivation. The results suggest that perceived socio-motivational support from the teacher might be an effective interventional point in efforts aimed at boosting achievement motivation among students as well as preventing them from possible academic failure and school dropout after the transition to secondary school.

3.7. Practical Implications

As practical implications for our findings we suggest that teachers should be aware of different levels of school self-concept among their students and try to adjust their feedback accordingly. Particularly, among students with low school self-concept teachers could strengthen perseverance and effort through positive, warm and supportive relationships as well as through acting directly as positive motivators: positive feedback from teachers focused on students' skills and abilities affects the development of academic self-concept in a positive way (Craven, Marsh, & Debus, 1991). Furthermore, teachers should support group learning in class, as for both groups peers acting as positive motivators contributed to achievement drive. At the same time, it is important to organize learning activities in both mixed-ability and like-ability groups as stable groups might have a negative impact on student's school self-concept due to students' self-assessment by social comparison with their peers (Preckel & Brull, 2010; Trautwein, Ludtke, Nagy, & Marsh, 2009).

Moreover, as already mentioned above, students with low general self-concept are particularly sensitive to characteristics of their teachers (Midgey et al., 1989). That means teachers should avoid inappropriate comparison and adjust their support according to the specific needs of both groups: it might be another challenge for the teacher to motivate students with a high school self-concept and not discourage students with a low school self-concept. Teachers might create a more favorable classroom context by treating students fairly and respectfully, so that they feel accepted and valued (Battistich et al., 1995; Goodenow & Grady, 1993; Wentzel, 1997, 2002).

In sum, schools should foster positive self-concept development as early as possible and put a special emphasis on the maintaining a positive self-concept during adolescent years, as the development of a positive school self-concept is related not only to achievement, but also to student's general behaviors and emotions throughout their school life (e.g., positively influences happiness, self-esteem, self-worth and reduces anxiety levels) (Marsh & Martin, 2011).

3.8. Strengths, Limitations and Future Research

The present study has important theoretical, methodological, and statistical strengths. Firstly the differentiated school self-concept of students have been considered whereas most studies focus either on school self-concept without differentiating between high and low self-concept students (cf., Areepattammannil, 2012), or focus on achievement subdividing students into high-and low-achiever groups and not discussing the self-concept issue (cf., Crumpton & Gregory, 2011). Secondly both the latent mean comparison and structural equation modeling are a clear methodological strength of the study, as in multi-groups CFA all aspects of measurement invariance and population heterogeneity across groups are examined (Brown, 2006). Furthermore SEM eliminates the random error of measurement for the observed variables associated with the latent variable(s) (Aiken, Stein, & Bentler, 1994; Dimitrov, 2006). Thirdly the sample includes a large number of students and schools, which provides first hints for the generalizability of the findings for German adolescents. However findings may differ for early adolescents from other countries, or differing ethnic groups, which could be examined through further research. Finally with regard to differences in students' school self-concept our findings enhance our understanding of the complex nature of social relationships in the school context in adolescence.

As for the study as whole certain methodological limitations should be considered when interpreting the current findings. Firstly though students' individual perceptions of socio-motivational relationships at school were a focus of our study one might criticize the study is limited due to reliance on self-report measures. However all main problems associated with self-report data (construct validity of self-report data, interpreting the correlations, social desirability responding, value of data collected from non-self-reported measures) have been considered (Chan, 2009). Moreover the problems mostly associated with self-report data may also occur with non-self-report data (Chan, 2009), and negative attitudes toward self-report data might be unjustified (Spector, 2006). Secondly firm conclusions about the causal ordering of variables cannot be drawn since the data are cross-sectional in nature. Therefore a longitudinal research design is warranted in which students from different age groups (e.g., elementary, middle school, college students), and varying school types (e.g., private, public) ought to be considered. In a longitudinal extension of the present study inter- and intra-individual differences in students could be examined as well (also taking into consideration that for adolescents of this age social

relations might change within a year and therefore additional information about the quality of peer relationships (e.g., friendships, intimacy etc.) could better examine developmental changes in adolescent's peer relationships). In addition future research might include teachers' variables, as well as class and school level variables to better grasp the environmental influence on students' development of school self-concept. Additionally as there were more boys than girls in the group of students with low school self-concept gender differences should be investigated to identify gender-specific support mechanisms.

In conclusion the present findings regarding the association of school self-concept and achievement motivation are directly relevant to teachers' efforts to reduce motivational decline in early adolescence as they emphasize: (1) one should be aware of differences between high and low self-concept students, (2) treat them accordingly, and (3) provide more support to students with low school self-concept. Finally, in particular teachers are able to foster students' motivation and support the development of a strong school self-concept.

3.9. References

- Achermann, N., Pecorari, C., Winkler-Metzke, C., & Steinhausen, H. C. (2006). Schulklima und Schulumwelt in ihrer Bedeutung für psychische Störungen bei Kindern und Jugendlichen – Einführung in die Thematik. In H.-C. Steinhausen (Ed.), *Schule und psychische Störungen* (pp. 15–37). Stuttgart, Germany: Kohlhammer.
- Aiken, L. S., Stein, J. A., & Bentler, P. M. (1994). Structural equation analyses of clinical subpopulation differences and comparative treatment outcomes: Characterizing the daily lives of drug addicts. *Journal of Consulting and Clinical Psychology, 62*, 488–499. doi: 10.1037/0022-006X.62.3.488
- Archambault, I., Janocz, M., & Choinard, R. (2012). Teacher beliefs as predictors of adolescents' cognitive engagement and achievement in mathematics. *The Journal of Educational Research, 105*, 319–328. doi: 10.1080/00220671.2011.629694
- Areepattammannil, S. (2012). Mediation role of academic motivation in the association between school self-concept and school achievement among Indian adolescents in Canada and India. *Social Psychology of Education: An International Journal, 15*, 367–386. doi: 10.1007/s11218-012-9187-1
- Asparouhov, T. (2005). Sampling weights in latent variable modeling. *Structural Equation Modeling, 12*(3), 37–41. doi: 10.1073/pnas.0910967107
- Atkinson, J. W. (1974). *A theory of achievement motivation*. New York; NY: Wiley.
- Azmitia, M., Kamprath, N. A., & Linnet, J. (1998). Intimacy and conflict: The dynamics of boys' and girls' friendships during middle childhood and early adolescence. In L. H. Meyer, H.-S. Park, M. Grenot-Scheyer, I. S. Schwarz, & B. Harry (Eds.), *Making friends: The influences of culture and development* (pp. 171–187). Baltimore, MD: Brookes Publishing.
- Azmitia, M., Ittel, A., & Radmacher, K. (2005). Narratives of friendship and self in adolescence. *New Directions for Child and Adolescent Development, 107*, 23–29. doi: 10.1002/cd.119
- Azmitia, M., Cooper, C. R., & Brown, J. R. (2009). Support and guidance from families, friends, and teachers in latino early adolescents' math pathways. *The Journal of Early Adolescence, 29*, 142–169. doi: 10.1177/0272431608324476
- Bakadorova, O., & Raufelder, D. (2013). The mediating role of socio-motivational support in the association between individual school self-concept and achievement

- motivation amongst adolescent students. *European Journal of Psychology of Education*. Advance online publication. doi: 10.1007/s10212-013-0202-5
- Battistich, V., Solomon, D., Kim, D., Watson, M., & Schaps, E. (1995). Schools as communities, poverty levels of student populations, and students' attitudes, motives, and performance: A multi-level analysis. *American Educational Research Journal*, 32, 627–658. doi: 10.3102/00028312032003627
- Bear, G. G., Minke, K. M., & Manning, M. A. (2002). The self-concepts of students with learning disabilities: A meta-analysis. *School Psychology Review*, 31(3), 405–427. Retrieved from: <http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=df3974a5-5b91-4f5a-81c81b22a211ca23%40sessionmgr4003&vid=1&hid=4212>
- Birch, S. H., & Ladd, G. W. (1996). Interpersonal relationships in the school environment and children's early school adjustment: the role of teachers and peers. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation – Understanding children's school adjustment* (pp. 199–225). New York, NY: Cambridge University Press.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York, NY: Wiley.
- Brinthaup, T. M., & Lipka R. P. (Eds.) (2002). *Understanding early adolescent self and identity: Applications and interventions*. Albany, NY: State University of New York Press.
- Brookover, W. B., Thomas, S., & Paterson, A. (1964). Self-concept of ability and school achievement. *Sociology of Education*, 37(3), 271–278. Retrieved from: <http://www.jstor.org/stable/2111958>
- Brookover, W. B., & Lezotte, L. W. (1979). *Changes in schools characteristics coincident with changes in student achievement*. East Lansing, MI: Michigan State University. Retrieved from: <http://education.msu.edu/irt/PDFs/OccasionalPapers/op017.pdf>
- Brophy, J. (2010). *Motivating students to learn*. New York, NY: Routledge.
- Brown, T. A. (2006). *Confirmatory factor analysis*. New York, NY: Guilford.
- Buhs, E., Herald, S., & Ladd, G. (2006). Peer exclusion and victimization: Processes that mediate the relation between peer group rejection and children's classroom engagement and achievement. *Journal of Educational Psychology*, 98, 1–13. doi: 10.1037/0022-0663.98.1.1
- Bukowski, W. M., Simard, M., Dubois, M. E., & Lopez, L. S. (2011). Representations, process, and development: A new look at friendship in early adolescence. In E. Amsel & J. G. Smetana (Eds.), *Adolescent vulnerabilities and opportunities:*

- Development and constructivist perspectives* (pp.159–181). New York, NY: Cambridge University Press.
- Burns, R. B. (1982). *Self-concept development and education*. London, UK: Holt, Rinehart & Winston.
- Byrne, B. M. (1984). The general/academic self-concept nomological network: A review of construct validation research. *Review of Educational Research*, *54*(3), 427–456. doi: 10.3102/00346543054003427
- Byrne, B. M. (1996). Academic self-concept: Its structure, measurement, and relation to academic achievement. In B. A. Bracken (Ed.), *Handbook of self-concept: developmental, social, and clinical considerations* (pp 287–316). New York, NY: Wiley.
- Chan, D. (2009). So why ask me? Are self-report data really that bad? In C. E. Lance & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends* (pp. 309–336). New York, NY: Routledge.
- Chen, Y., Thompson, M., Kromrey, J., Chang, G. (2011). Relations of student perceptions of teacher oral feedback with teacher expectancies and student self-concept. *The Journal of Experimental Education*, *79*, 452–477. doi: 10.1080/00220973.2010.547888
- Christ, O., & Schlüter, E. (2012). *Strukturgleichungsmodelle mit Mplus. Eine praktische Einführung*. München, Germany: Oldenbourg.
- Coie, J. D., Lochman, J. E., Terry, R., & Hyman, C. (1992). Predicting early adolescent disorder from childhood aggression and peer rejection. *Journal of Consulting and Clinical Psychology*, *60*(5), 783–792. doi: 10.1037//0022-006X.60.5.783
- Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco, CA: Freeman & Co.
- Covington, M. V. (1992). *Making the grade: A self-worth perspective on motivation and school reform*. New York, NY: Cambridge University Press.
- Covington, M. V. (1998). *The will to learn: A guide for motivating young people*. New York, NY: Cambridge University Press.
- Covington, M. V. (2000). Goal theory, motivation and school achievement: An integrative review. *Annual Review of Psychology*, *51*, 171–200. doi: 10.1146/annurev.psych.51.1.171

- Covington, M. V., & Dray, E. (2002). The developmental course of achievement motivation. A need-based approach. In A. Wigfried & J. Eccles (Eds.), *Development of achievement motivation* (pp. 33–56). San Diego, CA: Academic Press.
- Craven, R. G., Marsh, H. W., & Debus, R. L. (1991). Effects of internally focused feedback and attributional feedback on enhancement of academic self-concept. *Journal of Educational Psychology, 83*, 17–27. doi: 10.1037/0022-0663.83.1.17
- Crumpton, H. E., & Gregory, A. (2011). I'm not learning: The role of academic relevancy for low-achieving students. *The Journal of Educational Research, 104*, 42–53. doi: 10.1080/00220670903567398
- DeRosier, M. E., Kupersmidt, J. B., & Patterson, C. J. (1994). Children's academic and behavioral adjustment as a function of the chronicity and proximity of peer rejection. *Child Development, 65*(6), 1799–1813. doi: 10.1111/j.1467-8624.1994.tb00850.x
- Dimitrov, D. M. (2006). Comparing groups on latent variables: A structural equation modeling approach. *A Journal of Prevention, Assessment and Rehabilitation, 26*(4), 429–436. doi: 1051-9815/06
- Eccles, J. S., & Midgley, C. (1990). Changes in academic motivation and self-perceptions during early adolescence. In R. Montemayor, G. R. Adams, & T. P. Gullotta (Eds.), *Advances in adolescent development: From childhood to adolescence* (pp. 134–155). Newbury Park, CA: Sage.
- Eccles J. S, Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology. Social, emotional and personality development* (Vol. 3, pp. 1017–1096). New York, NY: Wiley.
- Eckert, C., Schilling, D., & Stiensmeier-Pelster, C. (2006). Einfluss des Fähigkeitsselbstkonzeptes auf die Intelligenz- und Konzentrationsleistung. *Zeitschrift für Pädagogische Psychologie, 20*, 41–48. doi: 10.1024/1010-0652.20.12.41
- Flanagan, K. S., Erath, S. A., & Bierman, K. B. (2008). Unique associations between peer relationships and social anxiety in early adolescence. *Journal of Clinical Child and Adolescent Psychology, 37*, 759–769. doi: 10.1080/15374410802359700
- Fraser, B. J., & Fisher, D. L. (1982). Predicting students' outcomes from their perceptions of classroom psychosocial environment. *American Educational Research Journal, 19*, 498–518. doi: 10.3102/00028312019004498
- Geiser, C. (2010). *Datenanalyse mit Mplus. Eine anwendungsorientierte Einführung*. Wiesbaden, Germany: VS.

- Goodenow, C., & Grady, K. E. (1993). The relationship of school belonging and friends' values to academic motivation among urban adolescent students. *Journal of Experimental Education, 62*, 60–71. doi: 10.1080/00220973.1993.9943831
- Guay, F., Ratelle, C., Roy, A., & Litalien, D. (2010). Academic self-concept, autonomous academic motivation, and academic achievement: mediating and additive effects. *Learning and Individual Differences, 20*(6), 644–653. doi: 10.1016/j.lindif.2010.08.001
- Harris, M. J., & Rosenthal, R. (1985). Mediation of interpersonal expectancy effects: 31 meta-analyses. *Psychological Bulletin, 97*, 363–386. doi: 10.1037/0033-2909.97.3.363
- Harter, S. (1996). Teacher and classmate influences on scholastic motivation, self-esteem, and level of voice in adolescents. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation – Understanding children's school adjustment* (pp. 11–42). New York, NY: Cambridge University Press.
- Harter, S. (1999). *The construction of the self: a developmental perspective*. New York, NY: Guilford.
- Hartmut, J. (1978). Supportive dimensions of teacher behavior in relationship to pupil emotional cognitive processes. *Psychologie in Erziehung und Unterricht, 25*(2), 69–74.
- Hawkins, J. A., & Berndt, T. J. (1985, April). *Adjustment following the transition to junior high school*. Paper presented at the biennial meeting of the Society for Research in Child Development, Toronto.
- Hay, I., Ashman, A. F., & Van Kraayenoord, C. E. (1998) Educational characteristics of students with high or low self-concept. *Psychology in the Schools, 35*, 391–400. doi: 10.1002/(SICI)1520-6807(199810)35:4<391::AID-PITS10>3.0.CO;2-#
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*, 51–55. doi: 10.1080/10705519909540118
- Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research, 79*, 491–525. doi: 10.3102/0034654308325693
- Juvonen, J., & Wentzel, K. R. (Eds.) (1996). *Social motivation: Understanding children's school adjustment*. New York, NY: Cambridge University Press.

- Kindermann, T. A. (1993). Natural peer groups as contexts for individual development: The case of children's motivation in school. *Developmental Psychology*, 29(6), 970–977. doi: 10.1037/0012-1649.29.6.970
- Kindermann, T. A., McCollam, T. L., & Gibson Jr., E. (1996). Peer networks and students' classroom engagement during childhood and adolescence. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation: Understanding children's school adjustment* (pp. 279–311). New York, NY: Cambridge University Press.
- Kunter, M., Schümer, G., Artelt, C., Baumert, J., Klieme, E., Neubrand, M., ... Weiß, M. (2002). *PISA 2000: Dokumentation der Erhebungsinstrumente*. Berlin, Germany: Max-Planck-Institut für Bildungsforschung.
- Ladd, G. W., & Kochenderfer, B. J. (1996). Linkages between friendship and adjustment during early school transitions. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 322–345). New York, NY: Cambridge University Press.
- Ladd, G. W., Herald-Brown, S. L., & Kochel, K. P. (2009). Peers and motivation. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 323–348). New York, NY: Routledge.
- Marsh, H. W. (1990). The causal ordering of academic self-concept and academic achievement: A multiwave, longitudinal panel analysis. *Journal of Educational Psychology*, 82, 646–656. doi: 10.1037/0022-0663.82.4.646
- Marsh, H. W. & Craven, R. G. (2005). A reciprocal effects model of the causal ordering of self-concept and achievement. New support for the benefits of enhancing self-concept. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *New frontiers for self research* (Vol. 2, pp. 15–52). Greenwich, CT: Information Age Publishing.
- Marsh, H. W., & Köller, O. (2003). Bringing together two theoretical models of relations between academic self-concept and achievement. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *International advances in self research* (Vol. 1, pp. 17–48). Greenwich, CT: Information Age Publishing.
- Marsh, H. W., & Martin, A. J. (2011). Academic self-concept and academic achievement: Relation and causal ordering. *British Journal of Educational Psychology*, 81, 59–77. doi: 10.1348/000709910X503501
- Marsh, H. W., & Richards, G. (1988). The outward bound bridging course for low achieving high-school males: Effect on academic achievement and multidimensional self-concepts. *Australian Journal of Psychology*, 40, 281–298.

doi: 10.1080/00049538808260049

- McClelland, D. C. (1961). *The achieving society*. Princeton, NJ: van Nostrand.
- McInerney, D. M., & McInerney, V. (2006). *Educational psychology: Constructing learning*. Sydney, Australia: Pearson.
- Midgley, C., Feldlaufer, H., & Eccles, J. S. (1989). Student-teacher relations and attitudes toward mathematics before and after the transition to junior high school. *Child Development, 60*, 981–992. doi: 10.2307/1131038
- Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology, 38*, 30–38. doi: 10.1037/0022-0167.38.1.30
- Muthén, L. K., & Muthén, B. O. (2012). *Mplus User's Guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.
- Ollendick, T. H., Weist, M. D., Borden, M. C., & Greene, R. W. (1992). Sociometric status and academic, behavioral, and psychological adjustment: a five-year longitudinal study. *Journal of Consulting and Clinical Psychology, 60*, 80–87. doi: 10.1037/0022-006X.60.1.80
- Peetsma, T., Hascher, T., Van der Veen, I., & Roede, E. (2005). Relations between adolescents' self-evaluations, time perspectives, motivation for school and their achievement in different countries and at different ages. *European Journal of Psychology of Education, 20*(3), 209–225. doi: 10.1007/BF03173553
- Petermann, F., & Winkel, S. (2007a). *FLM 7–13. Fragebogen zur Leistungsmotivation für Schüler der 7. bis 13. Klasse. Manual*. Frankfurt, Germany: Harcourt Test Services GmbH.
- Petermann, F., & Winkel, S. (2007b). Assessment of Achievement Motivation. In P. R. Zelic (Ed.), *Issues in the psychology of motivation* (pp.23–39). New York, NY: Nova Science Publishers.
- Preckel, F., Niepel, C., Schneider, M., & Brunner, M. (2013). Self-concept in adolescence: A longitudinal study on reciprocal effects of self-perceptions in academic and social domains. *Journal of Adolescence, 36*(6), 1165–1175. doi: 10.1016/j.adolescence.2013.09.001
- Preckel, F., & Brull, M. (2010). The benefits of being a big fish in a big pond: Contrast and assimilation effects on academic self-concept. *Learning and Individual Differences, 20*, 522–531. doi: 10.1016/j.lindif.2009.12.007

- Raufelder, D. (2007). *Von Machtspielen zu Sympathiegesten. Das Verhältnis von Lehrern und Schülern im Bildungsprozess*. Marburg, Germany: Tectum.
- Raufelder, D., & Mohr, S. (2011). Zur Bedeutung sozio-emotionaler Faktoren im Kontext Schule unter Berücksichtigung neurowissenschaftlicher Aspekte. In A. Ittel, H. Merkens, L. Stecher, & J. Zinnecker (Eds.), *Jahrbuch Jugendforschung* (S. 74–96). Wiesbaden, Germany: VS.
- Raufelder, D., Jagenow, D., Drury, K., & Hoferichter, F. (2013). Social relationships and motivation in secondary school: 4 different motivation types. *Learning and Individual Differences*, 22, 89–95. doi: 10.1016/j.lindif.2012.12.002
- Raufelder, D., Drury, K., Jagenow, D., Hoferichter, F., & Bukowski, W. (2013). Development and validation of the relationship and motivation (REMO) scales to assess students' perceptions of peers and teachers as motivators in adolescence. *Learning and Individual Differences*, 23, 182–189. doi: 10.1016/j.lindif.2013.01.001
- Roeser, R., Eccles, J. S., & Sameroff, A. J. (1998). Academic and emotional functioning in early adolescence: Longitudinal relations, patterns, and prediction by experience in middle school. *Development and Psychopathology*, 10, 321–352. doi: 10.1017/S0954579498001631
- Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the classroom: Teacher expectation and pupils' intellectual development*. New York, NY: Holt, Rinehart & Winston.
- Rubin, K. H., Bukowski, W. M., & Parker, J. (2006). Peer interactions, relationships, and groups. In N. Eisenberg (Ed), *Handbook of child psychology: Social, emotional, and personality development* (pp. 571–645). New York, NY: Wiley.
- Rubin, K., Bukowski, W. M., & Laursen, B. (Eds.) (2009). *Handbook of peer interactions, relationships, and groups*. New York, NY: Guilford.
- Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika*, 66, 507–514. doi: 10.1007/BF02296192
- Schoene, C., Dickhaeuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2002). *Skalen zur Erfassung des schulischen Selbstkonzepts. Manual*. Göttingen, Germany: Hogrefe.
- Schoene, C., Dickhaeuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2003). Das Fähigkeitsselbstkonzept und seine Erfassung. In J. Stiensmeier-Pelster, & F. Rheinberg (Eds.), *Diagnostik von Motivation und Selbstkonzept. Tests und Trends* (S. 3–14). Göttingen, Germany: Hogrefe.
- Shavelson, R. J., & Bolus, R. (1982). Self-concept: The interplay of theory and methods. *Journal of Educational Psychology*, 74, 3–17. doi: 10.1037/0022-0663.74.1.3

- Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: validation of construct interpretations. *Review of Educational Research, 46*, 407–441. doi: 10.3102/00346543046003407
- Skaalvik, E. M., & Rankin, R. J. (1995). A test of the internal/ external frame of reference model at different levels of math and verbal self-perception. *American Educational Research Journal, 32*, 161–184. doi: 10.2307/1163217
- Skaalvik, E. M., & Rankin, R. J. (1996, August). *Studies of academic self-concept using a Norwegian modification of the SDQ*. Paper presented at the XXVI International Congress of Psychology, Canada, Montréal.
- Skaalvik, E. M., & Valås, H. (1999). Relations among achievement, self-concept, and motivation in mathematics and language arts: A longitudinal study. *The Journal of Experimental Education, 67*, 135–149. doi: 10.1080/00220979909598349
- Skinner, E. A., Wellborn, J., & Connell, J. (1990). What it takes to do well in school and whether I've got it: A process model of perceived control and children's engagement and achievement in school. *Journal of Educational Psychology, 82*, 22–32. doi: 10.1037/0022-0663.82.1.22
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*(4), 571–581. doi: 10.1037/0022-0663.85.4.571
- Snow, R. E., Corno, L., & Jackson, D. (1996). Individual differences in affective and conative functions. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 243–310). New York, NY: Simon & Schuster Macmillan.
- Spector, P. E. (2006). Method variance in organizational research: Truth or urban legend? *Organizational Research Methods, 9*(2), 221–232. doi: 10.1177/1094428105284955
- Trautwein, U., Ludtke, O., Nagy, G., & Marsh, H. W. (2009). Within-school social comparisons: How students perceive the standing of their class predicts academic self concept. *Journal of Educational Psychology, 101*, 853–866. doi: 10.1037/a0016306
- Urduan, T., & Schoenfelder, E. (2006). Classroom effects on student motivation: Goal structures, social relationships, and competence beliefs. *Journal of School Psychology, 44*, 331–349. doi: 10.1016/j.jsp.2006.04.003
- Wang, M., Haertel, G., & Walberg, H. (1993). Toward a knowledge base for school learning. *Review of Educational Research, 63*, 249–294. doi: 10.3102/00346543063003249

- Watt, H. M. G. (2004). Development of adolescents' self-perceptions, values and task perceptions according to gender and domain in 7th - through 11th- grade Australian students. *Child Development, 7*, 1556–1574. doi: 10.1111/j.1467-8624.2004.00757.x
- Weinstein, R. (1998). Promoting positive expectations in schooling. In N. Lambert & B. McCombs (Eds.), *How students learn: Reforming schools through learner-centered education* (pp. 81–111). Washington, DC: American Psychological Association.
- Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology, 89*, 411–419. doi: 10.1037/0022-0663.89.3.411
- Wentzel, K. R. (1998). Social relationships and motivation in middle school: the role of parents, teachers and peers. *Journal of Educational Psychology, 90*(2), 202– 209. doi: 10.1037/0022-0663.90.2.202
- Wentzel, K. R. (2002). The contribution of social goal setting to children's school adjustment. In A. Wigfield & J. Eccles (Eds.), *Development of achievement motivation* (pp. 221–246). San Diego, CA: Academic Press.
- Wentzel, K. R. (2009a). Peers and academic functioning at school. In K. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 531–547). New York, NY: Guilford.
- Wentzel, K. R. (2009b). Students' relationships with teachers as motivational contexts. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 301–322). New York, NY: Routledge.
- Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology, 35*, 193–202. doi: 10.1016/j.cedpsych.2010.03.002
- Wigfield, A., & Eccles, J. S. (2001). *Development of achievement motivation*. San Diego, CA: Academic Press.
- Yuan, K.-H., & Bentler, P. M. (2004). On chi-square difference and z-tests in mean and covariance structure analysis when the base model is misspecified. *Educational and Psychological Measurement, 64*, 737–757. doi: 10.1177/0013164404264853
- Zusho, A., & Pintrich, P. R. (2001). Motivation in the second decade of life. In T. Urdan & F. Pajares (Eds.), *Adolescence and education* (pp.163–200). Greenwich, CT: Information Age.

CHAPTER 4

Study III

Perception of teachers and peers during adolescence: does school self-concept matter?

Results of a qualitative study

4.1. Abstract

A subsample of 36 adolescents with high ($n = 18$) and low ($n = 18$) stable over 2 years school self-concepts ($M_{Age} = 16.4$, $SD = .54$) was selected from a longitudinal study ($N_{Time1} = 1088$; $N_{Time2} = 845$) in order to participate in semi-structured interviews addressing their motivation and social relationships at school. A comparative thematic analysis was run inductively and revealed two themes (peer relationships and teacher relationships) and nine subthemes. The qualitative approach provided evidence for both similarities (e.g. classroom climate, motivation) and differences (e.g. emotional vs. learning support, high vs. low competition, acceptance vs. acknowledgement) among the subthemes. The results suggest the importance of acknowledging students' self-concept in the teaching process, as students' perception of social relationships at school may vary according to their level of self-concept: while students with a high school self-concept attribute equal importance to the emotional support provided by peers and teachers in their aspiration to "win the race", students with a low school self-concept prioritize the learning support provided by peers and teachers and express a desire to "be like the rest" in terms of classwork and grades.

Keywords: low school self-concept, high school self-concept, social relationships, support, adolescence, thematic analysis

Perception of teachers and peers during adolescence: does school self-concept matter?

Results of a qualitative study

Students proceeding through their educational journeys experience a natural development from childhood to adolescence. This is a complex process when a growing child develops the learning skills necessary to maximize their academic performance and develops a sense of self by acquiring important social skills. The transition from primary to secondary school is a crucial moment in this development. This time of “storm and stress” (Arnett, 1999) is generally characterized by physical and psychical changes in adolescents (Rosenberg, 1979) as well as shifts in their social environment: after four to six years of primary school⁹ students entering secondary school encounter new peers and teachers who may uphold new or different expectations (Harter, 1996). Maladjustment to these new surroundings and their academic and social requirements might result in academic failure or school dropout (Ellis, Marsh, & Craven, 2005). Although there is a general downward trend associated with adolescence (Ladd, Herald-Brown, & Kochel, 2009; Dohn 1991), not all students are equally affected by it: while some experience changes as threatening, others take the opportunity for their own personal development (Ellis et al., 2005).

Self-concept plays a special role in this respect (Brinthaupt & Lipka, 2002). There is evidence that, particularly during early adolescence (Seiffge-Krenke, 1990), self-concept (Shavelson, Hubner, & Stanton, 1976) undergoes structural changes by becoming more abstract, differentiated and organized (Harter, Whitesell, & Junkin, 1998). Concerning the stability of self-concept during adolescence, findings from previous research are contradictory indicating either a slight rise (Harter, 1998) or a relative fall (Eccles et al., 1983). The dissonance of these results might be explained by the interchangeable use of self-related terms in earlier research (Hattie, 1992) – therefore a clear and consistent definition must be established.

In its broadest sense, self-concept can be defined as a person’s perception of him- or herself (Shavelson et al., 1976). More recent research makes a further distinction between the cognitive component (self-concept) and the affective component (self-esteem) of the term (e.g., Schöne et al., 2003). Following this logic, self-concept might be defined as the sum of cognitive representations a person maintains about him- or herself (cf. Maier & Pekrun, 2004). Self-concept is an important research area, especially for educational

⁹ Primary education in Germany typically lasts between four and six years, depending on the federal state.

research, seen as it is considered to be both a condition for, and a major outcome of learning situations (Burns, 1979; Marsh, Craven, & MacInerney, 2005).

Several studies have found evidence that a high self-concept (which indicates a person's positive cognitive representation of him- or herself) contributes to the general psychological well-being of an individual (Craven & Marsh, 2008). Therefore, a high self-concept might be considered an important protective factor (Gilman & Huebner, 2006; Steinhausen & Winkler-Metzke, 2001) throughout the whole period of scholastic transitions and adjustments. Meanwhile, a low self-concept might put students at risk by negatively affecting their social competence and inducing problematic behavior (Marsh, Parada, & Ayotte, 2004).

The relationship between self-concept and academic achievement has been discussed at length throughout several decades of research (Wylie, Miller, Cowles, & Wilson, 1979) producing a variety of theories. Covington's self-worth theory of achievement motivation (Covington & Berry, 1976; Covington, 1984), for instance, views a person's self-concept of ability as an important element of his or her self-definition because it motivates them to strive for academic achievement and seek social approval which, in turn, strengthens self-concept in the school setting. According to Shavelson's multidimensional model (Shavelson et al., 1976), self-concept in school is a constituent of general self-concept and can be defined as the set of beliefs an individual has about his or her own study-related abilities, attributes and activities in school (Schoene, Dickhaeuser, Spinath, & Stiensmeier-Pelster, 2003). Moreover, Covington's theory argues that developing and maintaining a positive school self-concept (a sense of academic competence) contributes to individual's self-worth development.

Further research on the association between school self-concept and achievement also produced the reciprocal effects model (Marsh, 1990) which postulates that school self-concept and academic achievement are mutually dependent and cyclically reinforce one another. These theories have inspired further research that explores the mediating role of achievement motivation in this association (Areepattamannil, 2012; Guay, Ratelle, Roy, & Litalien, 2010).

There is evidence that self-concept not only becomes more complex and differentiated during adolescence, but it also becomes increasingly dependent on others' perception of oneself (Fuhrer, Mars, Holländer, & Möbes, 2000). As the focus of attention shifts from the family to the social environment (Harter, 2012; Steinberg & Morris 2001; Fend, 1998), relationships with both peers and teachers gain importance. This produces

another disjunction between adolescents' individual needs and the implications of undergoing a major transition at school: new (academic and social) demands, multiple teachers, larger classes and often a new or altered peer groups (Rosenberg, 1979).

In adolescence, students' peers and friends adopt some of the social functions that are otherwise performed by their family members: they provide emotional comfort and attachment (Rubin, Bukowski, & Laursen, 2009; Steinberg & Morris, 2001), emotional support (Azmitia, Cooper, & Braun, 2009), as well as learning support (Seiffge-Krenke, 1990), which positively affects students' academic motivation and achievement (Birch & Ladd, 1996; Kindermann, McCollam, & Gibson, 1996; Achermann, Pecorari, Winkler-Metzke, & Steinhausen, 2006) and helps resolve related problems (Seiffge-Krenke, 1990). However, a new peer group simultaneously challenges the coordination of old and new friendships (Azmitia, Kamprath, & Linnet, 1998), which might result in feelings of exclusion or jealousy (Azmitia et al., 2009). Moreover studying in a new and larger peer group might result in peer pressure (Steinberg, Brown, & Dornbush, 1996) and increased competitiveness (Harter, 1996).

In the event of maladjustment to a new peer group, a student must rely on alternative sources of support. Unsurprisingly, the transition to secondary school is also a time when students' need for social and emotional connectedness with their teachers increases (Yeung & Leadbeater, 2010). This presents yet another challenge for the teacher-student relationships: as teachers become responsible for a growing number of students, their ability to develop supportive relationships with each individual student is compromised (Eccles et al., 1993; Wang, Brinkworth, & Eccles, 2013). At the same time, emotional support from teachers is positively associated with students' school self-concept (Skaalvik & Skaalvik, 2013), commitment to learning (Becker & Luthar, 2002), and higher achievement (Goodenow, 1993), especially during adolescence. Such positive effects promote better school adjustment and reduce the risks of peer victimization (Yeung & Leadbeater, 2010). In contrast, troubled relationships with teachers result in reduced intrinsic motivation, impoverished engagement at school and potential school dropout (Brophy & Good, 1974, Ryan & Deci, 2000, Skinner & Belmont, 1993, Roeser & Eccles, 1998).

In sum, the current state of the literature provides evidence for the positive effects of a high self-concept in general, and a high school self-concept in particular. It also indicates a positive association between social support and self-concept, especially during adolescence. At the same time, empirical research combined with practical observations

suggests the challenges of designing appropriate educational practices that assist students in the transition to secondary school which requires adapting to new social environments (Eccles & Midgey, 1989) whilst compromising close relationships with new teachers (Eccles et al., 1993) and potentially inducing adjustment-related problems.

Most research on school self-concept employs quantitative methods, yet qualitative literature, which holds the potential of generating a deep understanding of real experiences by exploring individuals' subjective viewpoints, feelings, thoughts, interpretations, and perceptions (Smith & Osborn, 2003), is lacking. Only few studies address the issue of school self-concept and social relations at school among adolescent students. To our knowledge, there are no studies that consider differences in high and low school self-concept and students' perception of social relationships.

4.2. Current Study

Hence, the current qualitative study investigates potential differences in the perception of teachers and peers among students with high and low school self-concepts in an attempt to determine the specific influence of these social actors on motivational, learning and educational processes. In particular, the results should lead to (a) a deeper understanding of possible differences in the social competence and sources of academic motivation between students with a high and low school self-concept, and (b) the advancement of a differentiated, student-centered approach to developing prevention and intervention strategies in secondary schools that aim to support motivational, learning and educational processes during the transition from primary into secondary school.

4.3. Method

Participants and Procedure

A subsample of 36 German-speaking adolescents was based on a prior longitudinal quantitative study ($N_{Time1} = 1088$; $N_{Time2} = 845$), conducted in secondary schools ($n = 23$) in Brandenburg in 2011 and 2013 based on self-report data. Data from both measurement points identified 36 participants, out of which 18 had a stable high school self-concept (HSSC), whilst the other 18 had a stable low school self-concept (LSSC), as determined by result interpretation tables from the SESSKO¹⁰ manual. The SESSKO scales were developed by Schoene, Dickhaeuser, Spinath and Stiensmeier-Pelster (2002) to measure

¹⁰ SESSKO-Skalen zur Erfassung des schulischen Selbstkonzepts [Scales to access the school self-concept]

school self-concept in German-speaking countries. The subdivision was based on the raw values, percentage, T-value and T-value Band. The scale we used consisted of 5 items (see Table 1) addressing an individual's general perception of his or her current scholastic abilities, without implying any type of comparison.

Table 1. Absolute School Self-Concept Subscale

I am not....very talented in studying at school

It is difficult...easy for me to learn new things

I am not....very intelligent

At school I can do little...a lot.

At school the tasks are difficult...easy for me

Note. Adapted from: Schöne, C., Dickhäuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2012). *Skalen zur Erfassung des schulischen Selbstkonzepts - SESSKO*. (2nd rev. ed.) [Scales to assess school self-concept] (p. 14). Göttingen, Germany: Hogrefe. Reprinted with permission of C. Schöne. The original items are in German, translated for the current work to provide examples for international readers. APA is not responsible for the accuracy of translation.

The participants' school self-concept level remained stable over the two years (data was collected in 2011 (7th-8th grade) and 2013 (9th-10th grade)). In both groups boys and girls were represented: HSSC: 7 boys, 11 girls ($M_{Age} = 16.3$, $SD = .53$); LSSC: 10 boys, 8 girls ($M_{Age} = 16.5$, $SD = .55$).

The informants were invited to participate in qualitative interviews through letters addressed to their parents or guardians. Interviews were held at the Free University of Berlin, and were conducted in German and recorded with an audio recorder. Each interview lasted between 20 and 30 minutes. In the transcriptions, all informants were given pseudonyms.

We chose to conduct semi-structured interviews following an interview guideline (Smith & Osborn, 2003) so as to obtain reliable and comparable data (Bernard, 1988). The guiding questions addressed attitudes towards school, organization of the learning process, motivation and social relationships (see Appendix). Two pilot interviews tested and confirmed the suitability of the initial interview guideline. The strengths and limitations of this approach will be discussed in the "Strengths, Limitations and Future Directions" section.

Data Analysis

Thematic analysis (Braun & Clarke, 2006) was used to interpret the data in order to enrich the prior quantitative study and provide a profound analysis of possible differences between the groups. A review of the literature found no research that explores potential differences in adolescents' level of self-concept whilst accounting for social relations at school. Hence, the data was analyzed inductively.

In the data analysis process we first became acquainted with the data through a) manual transcriptions of interviews and b) repeatedly reading the transcripts. Next, initial codes for the data were constructed and mapped onto potential themes that were revised and refined. In the last stage, the final themes were defined and split into subthemes. The analyses were based on a coding process of the whole sample ($N = 36$) with a good inter-rater agreement in both groups ($\kappa \geq .89$).

4.4. Results

During the interviews all students spoke openly about their school life, relationships with teachers and peers and their motivation patterns, which proved an appropriate choice of setting and interviewees. Two major themes emerged from the data: (1) peer relations and (2) teacher relations. The peer relations theme included six subthemes; the teacher relations theme consisted of three subthemes. Based on the findings, two models (Figure 1, Figure 2) were conceptualized to illustrate the indicated similarities and differences between the groups with regard to social relationships.

The dotted line subdivides each model into two fields: the left field represents the HSSC group, whereas the right field is devoted to the LSSC group. The common subthemes are listed in the middle, whilst aspects that are specific to a single group are noted in the following field.

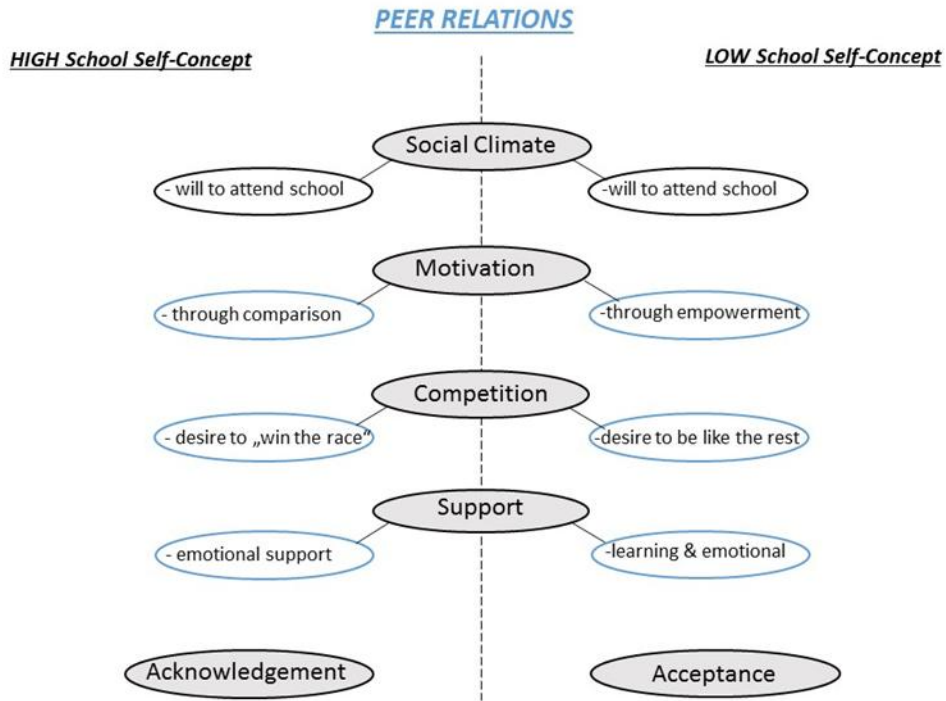


Figure 1. A model of differences in the perception of peers among students with high and low school self-concept

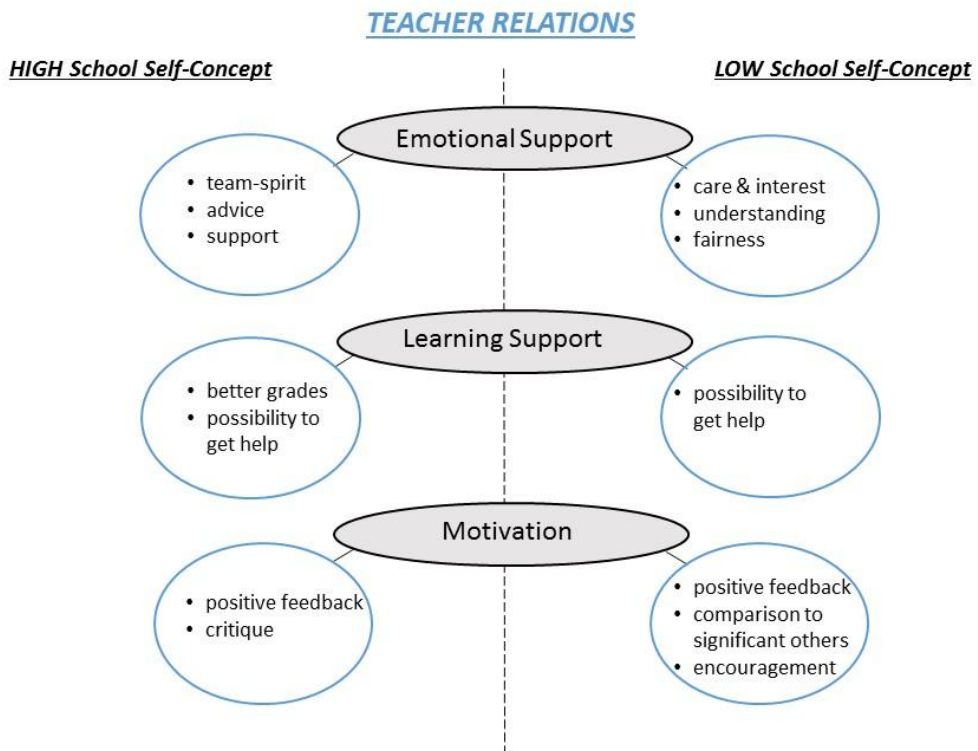


Figure 2. A model of differences in the perception of teachers among students with high and low school self-concept

The following passages present the details; quotations¹¹ provide illustrations.

Theme 1: Peer Relations

This theme addressed students' relations with their classmates/friends and the roles they played in motivational, learning and educational processes at school. Subthemes include: "Social Climate", "Motivation", "Competition", "Support" and "Acknowledgement"/"Acceptance". The absolute majority of students stated that the primary motivation for attending school was to see their friends, whereas educational/professional aspirations were secondary. Further similarities and differences between the groups will be discussed in the following passages.

Subtheme 1: Social Climate

All students emphasized the role of peers in maintaining a positive classroom climate. Positive relations with peers were important for mutual understanding, help and support within a class. Students noted that the presence of one or two friends in the classroom contributed to their well-being by providing an opportunity to share important concerns. On the contrary, troubled relations with peers resulted in poor concentration and could lead to reduced achievement levels as well as generally reduce students' desire to attend classes. Overall, all interviews highlight the importance of maintaining positive social relations with peers – irrespective of the self-concept level – in order to foster a better social climate at school, improve concentration and enhance the general desire to attend school. Social relationships with peers were also found to be important sources of academic motivation.

Subtheme 2: Motivation

All interviewees identified their peers as a primary source of motivation. For example, when asked whether her behavior in class was affected by friends, Lara (16 years, HSSC) responded: "*A friend of mine, she sits next to me; when she is active in the lesson, I also try to participate more*". David (17 years, HSSC) admitted: "*When my best friends study more, I think: if they can do it, you can do it too.*" While friends motivate students by setting a good example, peers directly affect motivation through positive feedback (e.g., Peter (17 years, HSSC): "*Fellow students motivate me,*

¹¹ Originally quotations were stated in German. They were translated for the current paper so as to provide examples for international readers. The participants were assigned pseudonyms.

too. They say: 'well done, go on!' if I get a three¹²) or encouragement for greater participation.

In contrast, the LSSC group students highlighted that encouragement from both peers and friends helped them overcome fear of failure. Moreover, peers' comments (e.g., "You could have done it better!") empowered them for future participation. In sum, students from both groups perceived their peers as motivators. However, the issue of encouragement /empowerment was mostly observed in the LSSC group while students from the HSSC group were more motivated by direct comparisons, which resulted in greater competition.

Subtheme 3: Competition

Although friendly relationships with peers were important for the HSSC group, competition through comparison was one of the key aspects. Students reported feeling in constant competition with others (in terms of academic effort and grades), which motivated them to improve their own results. Academic results were mostly shared with friends, who were perceived as trustworthy sources of comfort and consolation in the event of unsatisfying grades. At the same time, if they were outperformed by their friends, HSSC students felt sad and disappointed, albeit willing to improve the next time.

In contrast, the LSSC group avoided competition and emphasized the desire to be like the rest – to integrate. Marcel (17 years, LSSC) mentioned that he would raise his hand if everybody else did and felt relieved when his friends were "all on the same level" as him. The LSSC student group used class average as a point of reference for comparisons and tried to keep the pace of the majority. They also perceived friends' success more apathetically, although they mentioned it motivated them to do better in subsequent tests to keep up with their friends.

In sum, HSSC students expressed the desire to compete, excel and 'win the race', comparing themselves to friends. In contrast, LSSC students compared themselves with the class average and expressed a desire "to integrate". Therefore the feeling of being on par with others provided them with sufficient support.

Subtheme 4: Support

Interviews with students from the HSSC group highlighted the importance of emotional support from peers and friends. Peers were described as persons one can address

¹² In German schools 6-grade system is used, 6 being the worst and 1 the best grade

when in trouble. Moreover, friends were expected to provide emotional comfort in the event that teachers treated students unfairly. Learning support was not often addressed and most students claimed that they studied better individually. Their individual learning, in turn, boosted competitiveness. However, some students claimed that they were prepared to provide learning support for those students who performed worse than them. Thus, students with a HSSC were both in need of emotional support from peers and ready to support peers as long as they would not outperform them.

In contrast, LSSC students concentrated on learning aspects. The majority expressed a clear preference for learning in a group (or with friends). Friends were expected to show understanding as well as provide learning support.

Overall, students pertaining to different self-concept groups expressed the need for different kinds of support. While HSSC students turned to their friends and peers mostly for emotional support, LSSC students expressed the need for mutual support in all aspects of learning. Moreover, while LSSC students preferred group activities, most HSSC students were individual learners. These findings correspond with issues of acceptance and acknowledgment which represent the most apparent difference between the groups.

Subtheme 5: Acknowledgement

This subtheme only emerged in the HSSC group. The majority of students implicitly or explicitly indicated the desire to have their efforts acknowledged by peers, which induced feelings of inner satisfaction, positive feelings about the work done and a general good feeling: *“Well, it is slightly important. Perhaps it sounds stupid, but a bit of acknowledgement...feels quite good.”* (Andrea, 16 years, HSSC).

Subtheme 6: Acceptance

In contrast, the reflections of LSSC students focused largely on the acceptance of peers and friends, regardless of their achievement behavior or other factors. Monica, (16 years, LSSC) commented: *“My friends should know me like I am and when I do not willingly take part in the lesson or cannot do anything, that’s just the way it is. My friends should like me just like that, for the way I am”*.

Theme 2: Teacher Relations

This theme addressed students' relations with their teachers and emerged in all interviews. Although subthemes ("Emotional Support", "Learning Support" and "Motivation") were similar for both groups, there was a difference in the aspects emphasized by students from the HSSC or LSSC group. While HSSC students stressed the feeling of belonging to a group, which a teacher helped them develop, the LSSC group put greater emphasis on fairness and equal opportunities. Furthermore, HSSC students generally assessed their teachers more critically.

Subtheme 1: Emotional Support

Both groups saw teachers as providers of emotional support. Good teachers were described by the HSSC group as fostering a positive classroom climate and maintaining a feeling of belonging to the group. Their personality was described as caring and interested, which was stressed in relation to professional competence: "*She is a little bit like my mother, she is interested in me, and she explains well.*" (Claudia, 17 years, HSSC).

For the LSSC group the teacher also played an important role in maintaining a positive classroom climate and providing emotional comfort. However fairness and equal opportunities were emphasized. Qualities such as understanding, inclusiveness, and evaluating students based on their work and not their personality were mentioned. LSSC students also stressed the importance that teachers create opportunities to compensate for bad results: "*some [teachers] are very understanding, when one does something wrong, they listen and then they give you a chance to compensate for the grade...*" (Sandro, 17 years, LSSC). Interestingly, the possibility of having another shot at a task was often interpreted as equal opportunities.

In sum, positive relations with teachers help create a better classroom atmosphere, provide emotional comfort, and promote better interactions with others resulting in a better functioning in class. Another important aspect was learning support.

Subtheme 2: Learning Support

A recurring theme in HSSC students' interviews was the belief that positive relations with teacher would enhance students' efforts, allow them to achieve better results in the case of uncertainty between two grades, and improve their chances for academic support. Moreover mutual understanding was emphasized. Study assistance and chances to obtain

further help were also put forward by the LSSC group: however, while HSSC students viewed themselves as active and independent learners, LSSC students were more dependent on the teacher's help. In sum, good interpersonal relations with teachers provided students from both groups with learning support and task management skills; the latter was especially important for the LSSC group.

Subtheme 3: Motivation

Motivation was another important aspect of teacher-student relations. HSSC students were most motivated when they felt that teachers saw potential in them and provided positive feedback. Surprisingly, critique was perceived as a source of motivation and encouragement to improve efforts.

Students from the LSSC group also highlighted the importance of feedback for their motivation. However, the type of feedback they mentioned was aimed at boosting students' participation and effort, but not necessarily assessing them as persons. Another motivation strategy was to compare results with family members or close friends.

Overall, teachers' feedback played a significant role in motivation processes. However, while HSSC students were focused on direct motivation from teachers (i.e., feedback, critique), LSSC students benefited more from indirect motivation strategies (i.e., encouragement to participate in class; comparison to significant others such as siblings, friends). All in all, both students with HSSC and LSSC emphasized that a particular teacher with whom they felt an emotional connection had a greater impact on motivation.

In sum, though all students profited from positive interpersonal relations with teachers, the students from different groups emphasized different aspects of these relations. While HSSC students suggested that good relationships with teachers might be advantageous for improving grades, students with a LSSC appreciated additional learning support and the possibility to get another chance.

4.5. Discussion

The aim of present study was to examine whether and in what way adolescent students with a high and low school self-concept differ in their perception of peers and teachers. Thematic analysis of face-to-face interviews was used in order to produce detailed results and investigate the issue "in depth" (Smith & Osborn, 2003). The results are in line with existing research: peers are an important source of motivation (Harter,

1996; Wentzel, 2009a, 2009b; Wentzel, Battle, Russell, & Looney, 2010; Raufelder, Drury, Jagenow, Hoferichter & Bukowski, 2013) for high and low school self-concept students alike. Moreover, peers, particularly friends, largely contribute to a positive social climate in school (Wilson, 2004) and fulfill important psychological and emotional needs (Harter, 1996; Rubin, Bukowski, & Laursen, 2009; Rubin, Bukowski, & Parker, 2006). However, significant differences were found between the high and low school self-concept groups: while the former felt more motivated through comparison to others, the latter were more motivated by support and empowerment. Unsurprisingly, then, competitiveness was stronger in the HSSC group.

For all students peer support played an important role, which is in line with the work of Stanton-Salazar and Spina (2005) and Goodenow (1993). However our research suggests that, whilst students with a HSSC valued emotional support as well as acknowledgement from their peers, students with a LSSC prioritized learning support and acceptance. This might be explained by the association between self-concept and achievement (Marsh & Martin, 2011; Marsh & Köller, 2003; Marsh & Craven, 2005), which suggests that students with a LSSC tend to be underachievers (Schunk, 1998).

Close relations with teachers provided emotional support for both groups. This finding is in line with previous research that identified teachers' emotional support as essential for students' motivation (Federici & Skaalvik, 2014; Hamre & Pianta, 2006; Colarossi & Eccles, 2003). However, we discovered that for students with a HSSC, mastering feelings of belonging to the group and creating a better classroom atmosphere were important well-being factors. In contrast, students with a LSSC felt that good relations with teachers not only provided them with emotional comfort, but also contributed to feelings of fairness.

Prior research found teacher feedback to have a direct effect on students' motivation and learning process (Hamre & Pianta 2006; Kluger & DeNisi, 1996). However, our research emphasized the necessity of providing specific feedback and accustoming teaching methods for both groups: in particular, students of the HSSC group were more motivated by direct feedback including critique, whereas students of the LSSC group profited from a more indirect involvement on the teacher's part (encouragement in participation at the lesson and involvement of important others).

The results stand in line with the self-worth theory (Covington, 1984; Covington and Berry, 1976). High self-concept students expressed the need for their progress to be acknowledged, which would boost their perception of their own ability, increase their self-

worth, and motivate them for further success. In contrast, low self-concept students expressed a greater need for acceptance irrespective of their ability, perhaps as a strategy to maintain their feeling of self-worth. Moreover, these students were prepared to invest greater efforts if given a second chance to improve their academic results. Finally, this group especially emphasized the importance of receiving feedback for their efforts, albeit not for personal characteristics, which is in line with existing research (Eccles & Wigfield, 2002).

Overall, the most important conclusion to draw from the present findings is that groups of students with a high and low school self-concept differ in their needs and perceptions of peers and teachers, which validates our previous assumptions (Bakadorova & Raufelder, in press).

4.6. Practical Implications

Considering our findings, we strongly advise teachers to become aware of the importance of differing levels of school self-concept among students. This also implies that teaching methods and feedback should be adjusted accordingly. Furthermore, it is important to establish positive relations within the class as this contributes to students' sense of belonging and emotional well-being, and creates a positive social climate that benefits all students, regardless of their self-concept.

The interview analysis proved that one-directional teaching methods (e.g., individual work (according to the classification of Winkel (1991)) are especially appropriate for HSSC students, while LSSC students profit more from collaborative teaching practices (project work, group tasks in non-homogenous self-concept groups, as social comparison may strengthen the self-concept of some students, whilst harming that of others who do not belong to the same group (Preckel & Brull, 2010; Trautwein, Ludtke, Marsh, & Nagy, 2009)). In addition, self-concept level must be considered when tailoring and moderating group discussions in respect of fear of failure, especially among LSSC students.

Furthermore, teachers should be aware of their own role in providing academic and emotional support for their students. Only a teacher can make students feel respected and fairly treated. Our findings suggest that feedback should be adjusted to the student's self-concept level: while HSSC students interpret criticism as a sign of teachers' interest, LSSC students are particularly sensitive to critique. Moreover, feedback should address students' ability and effort, not their personality (Eccles & Wigfield, 2002).

In sum, HSSC not only supports better adjustment but also makes a positive contribution to a student's behavior and emotions (e.g., maintains self-worth; reduces anxiety levels) (Marsh & Martin, 2011). To help improve students' school self-concept and maintain a high and stable level throughout the school years, we recommend that teachers adjust their feedback to individual students' self-concept and develop student-centered strategies to promote interaction in class.

4.7. Strength, Limitations and Future Directions

A clear strength of the study is its qualitative approach to the research questions, which helps gain a deeper understanding (Mayring, 2002) of adolescents' perception of peers and teachers in the school context. The prior quantitative longitudinal study allowed us to identify high and low school self-concepts in students. At the same time, a high selectivity of informants (students with a stable school self-concept from 8th to 10th grade) might be regarded as a limitation of the study. Future research should account for the possible instability of school self-concept over time, and include additional actors (e.g., teachers, parents, school personnel) to introduce diverse perspectives.

Another limitation is the sample size (36 students from one federal state). Although we refined the data until no further themes and subthemes emerged (Mayring, 2002; Braun & Clarke, 2006), the small sample size might account for a limited number of themes. Therefore the results cannot be generalized for all students and should be interpreted with caution. Furthermore we focused on school self-concept and did not consider potentially relevant differences in gender, though several studies suggest gender differences in perceptions of social relations (Colarossi & Eccles, 2003; Hay & Ashman, 2003; Ryan & Shim, 2012). Hence, future studies are warranted that differentiate "relational self-worth" (Harter, Waters, & Whitesell, 1998) from "contingent self-worth" (Park, Crocker, & Vohs, 2006), which might be a valuable theoretical and empirical approach to research students' school self-concept and the role of social relations with peers and teachers. Finally, it is important to note that no follow-up interviews were conducted.

In conclusion, the findings underline the necessity to raise awareness amongst teachers of the specific needs of high and low school self-concept students, and adjust their support accordingly: while HSSC students need emotional support and can critically evaluate learning support, LSSC students are in need of a combination of both emotional and academic support, which might be challenging to implement in modern secondary school settings.

Further studies should develop practical strategies to measure school self-concept, which would allow teachers to identify the individual needs of their students and tailor their classroom management accordingly. In general, teachers should be aware of the necessity of making students feel treated fairly, accepted and valued in order to create a favorable classroom environment (Battistich, Solomon, Kim, Watson, & Schaps, 1995; Goodenow & Grady, 1993; Wentzel, 1997, 2002).

4.8. References

- Achermann, N., Pecorari, C., Winkler-Metzke, C., & Steinhausen, H. C. (2006).
Schulklima und Schulumwelt in ihrer Bedeutung für psychische Störungen bei
Kindern und Jugendlichen – Einführung in die Thematik. In H.-C. Steinhausen (Ed.),
Schule und psychische Störungen (pp. 15–37). Stuttgart, Germany: Kohlhammer.
- Areepattammannil, S. (2012). Mediation role of academic motivation in the association
between school self-concept and school achievement among Indian adolescents in
Canada and India. *Social Psychology of Education: An International Journal*, *15*,
367–386. doi: 10.1007/s11218-012-9187-1
- Arnett, J. J. (1999) Adolescent storm and stress, reconsidered. *American Psychologist*,
54(5), 317–326. doi: 10.1037/0003-066X.54.5.317
- Azmitia, M., Kamprath, N. A., & Linnet, J. (1998). Intimacy and conflict: The dynamics of
boys' and girls' friendships during middle childhood and early adolescence. In L. H.
Meyer, H.-S. Park, M. Grenot-Scheyer, I. S. Schwarz, & B. Harry (Eds.), *Making friends:
The influences of culture and development* (pp. 171–187). Baltimore, MD: Brookes
Publishing.
- Azmitia, M., Cooper, C. R., & Brown, J. R. (2009). Support and guidance from families,
friends, and teachers in Latino early adolescents' math pathways. *The Journal of
Early Adolescence*, *29*, 142–169. doi: 10.1177/0272431608324476
- Bakadorova, O., & Raufelder, D. (in press). Do socio-motivational relationships predict
motivation in adolescents with low and high school-self-concept? *The Journal of
Educational Research*.
- Battistich, V., Solomon, D., Kim, D., Watson, M., & Schaps, E. (1995). Schools as
communities, poverty levels of student populations, and students' attitudes, motives,
and performance: A multilevel analysis. *American Educational Research Journal*,
32, 627–658. doi: 10.3102/00028312032003627
- Becker, B., & Luthar, S. (2002). Social-emotional factors affecting achievement outcomes
among disadvantaged students: Closing the achievement gap. *Educational
Psychologist*, *37*, 197–214. doi: 10.1207/S15326985EP3704_1
- Bernard, H. R. (1988). *Research methods in cultural anthropology*. Newbury Park, CA:
Sage.
- Birch, S. H., & Ladd, G. W. (1996). Interpersonal relationships in the school environment
and children's early school adjustment: the role of teachers and peers. In J. Juvonen

- & K. R. Wentzel (Eds.), *Social motivation – Understanding children's school adjustment* (pp. 199–225). New York, NY: Cambridge University Press.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. doi: 10.1191/1478088706qp063oa
- Brophy, J. E., & Good, T. L. (1974). *Teacher-student relationships. Causes and consequences*. New York, NY: Holt, Rinehart & Winston.
- Brown, B. B. (1990). Peer groups and peer cultures. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold* (pp. 171–196). Cambridge, MA: Harvard University Press.
- Brinthaup, T. M., & Lipka R. P. (Eds.) (2002). *Understanding early adolescent self and identity: Applications and interventions*. Albany, NY: State University of New York Press.
- Burns, R. B. (1979). *The self concept in theory, measurement, development and behaviour*. London, UK: Longman Group Limited.
- Colarossi, L. G., & Eccles, J. S. (2003). Differential effects of support providers on adolescents' mental health. *Social Work Research*, 27, 19–30. doi: 10.1093/swr/27.1.19
- Covington, M. V. (1984). The self-worth theory of achievement motivation: Findings and implications. *The Elementary School Journal*, 85, 4–20. doi: 10.1086/461388
- Covington, M. V., & Berry, R. G. (1976). *Self-worth theory and school learning*. New York, NY: Holt, Rinehart & Winston.
- Craven, R. G., & Marsh, H. W. (2008). The centrality of the self-concept construct for psychological wellbeing and unlocking human potential: Implications for child and educational psychologists. *Educational and Child Psychology*, 25(2), 104–118.
- Craven, R. G., Marsh, H. W., & Debus, R. L. (1991). Effects of internally focused feedback and attributional feedback on enhancement of academic self-concept. *Journal of Educational Psychology*, 83, 17–27. doi: 10.1037/0022-0663.83.1.17
- Dohn, H. (1991). “Drop-out” in the Danish high school (gymnasium): An investigation of psychological, sociological and pedagogical factors. *International Review of Education*, 37(4), 415–428. doi: 10.1007/BF00597619
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109–132. doi:10.1146/annurev.psych.53.100901.135153.
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & MacIver, D. (1993). Development during adolescence: the impact of stage-

- environment fit on young adolescents' experience in schools and in family. *American Psychologist*, 48(2), 90–101. doi: 10.1037/0003-066X.48.2.90
- Eccles, J., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J., & Midgley, C. (1983). Expectancies, values and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motives* (pp. 75–146). San Francisco, CA: Freeman.
- Eccles, J. S., & Midgley, C. (1989). Stage-environment fit: Developmentally appropriate classrooms for young adolescents. In C. Ames & R. Ames (Eds.), *Research on motivation in education* (Vol. 3, pp. 139–186). San Diego, CA: Academic Press.
- Ellis, L. A., Marsh, H. W., & Craven, R. G. (2005). Navigating the transition to adolescence and secondary school: A critical evaluation of the impact of peer support. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *New frontiers for self research* (Vol. 2, pp. 329–356). Greenwich, CT: Information Age Publishing.
- Federici, R. A., & Skaalvik, E. M. (2014). Students' perceptions of emotional and instrumental teacher support: Relations with motivational and emotional responses. *International Education Studies*, 7, 21–36. doi: 10.5539/ies.v7n1p21
- Fend, H. (1998). *Eltern und Freunde. Soziale Entwicklung im Jugendalter*. Bern, Switzerland: Huber.
- Fuhrer, U., Marx, A., Holländer, A., & Möbes, J. (2000). Selbstentwicklung in Kindheit und Jugend. In W. Greve (Ed.), *Psychologie des Selbst* (S. 39-57). Weinheim, Germany: Psychologie Verlagsunion.
- Goodenow, C. (1993). Classroom belonging among early adolescent students: Relationships to motivation and achievement. *Journal of Early Adolescence*, 13, 21–43. doi: 10.1177/0272431693013001002
- Goodenow, C., & Grady, K. E. (1993). The relationship of school belonging and friends' values to academic motivation among urban adolescent students. *Journal of Experimental Education*, 62, 60–71. doi:10.1080/00220973.1993.9943831
- Gilman, R., & Huebner, E. S. (2006). Characteristics of adolescents who report very high life satisfaction. *Journal of Youth and Adolescence*, 35, 311–319. doi: 10.1007/s10964-006-9036-7
- Guay, F., Ratelle, C. F., Roy, A., & Litalien, D. (2010). Academic self-concept, autonomous academic motivation, and academic achievement: Mediating and additive effects. *Learning and Individual Differences*, 20, 644–653. doi: 10.1016/j.lindif.2010.08.001
- Hamre, B. K., & Pianta, R. C. (2006). Student-teacher relationships. In G. G. Bear &

- K. M. Minke (Eds.), *Children's needs: Development, prevention, and intervention* (pp. 59–72). Bethesda, MD: National Association of School Psychologists.
- Harter, S. (1996). Teacher and classmate influences on scholastic motivation, self-esteem, and level of voice in adolescents. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation — Understanding children's school adjustment* (pp. 11–42). Cambridge, MA: University Press.
- Harter, S., Whitesell, N. R., & Junkin, L. J. (1998). Similarities and differences in domain specific and global self-evaluations of learning disabled, behaviourally disordered, and normally achieving adolescents. *American Educational Research Journal*, *35*, 653–680. doi: 10.3102/00028312035004653
- Harter, S., Waters, P., & Whitesell, N. R. (1998). Relational self-worth: Differences in perceived worth as a person across interpersonal contexts. *Child Development*, *69*, 756–766. doi: 10.2307/1132202
- Harter, S. (1998). The development of self-representation. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology* (Vol. 3, pp. 553–618). New York, NY: Wiley.
- Hattie, J. (1992). *Self-concept*. Hillsdale, NJ: Erlbaum.
- Hay, I., & Ashman, A. F. (2003). The development of adolescents' emotional stability and general self-concept. The interplay of parents, peers and gender. *International Journal of Disability, Development and Education*, *50*, 77–91. doi: 10.1080/1034912032000053359
- Juvonen, J., & Wentzel, K. R. (Eds.) (1996). *Social motivation: Understanding children's school adjustment*. New York, NY: Cambridge University Press.
- Kindermann, T. A., McCollam, T. L., & Gibson, E. (1996). Peer networks and students' classroom engagement during childhood and adolescence. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation: Understanding children's school adjustment* (pp. 279–311). New York, NY: Cambridge University Press.
- Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance. A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, *119*, 254–284. doi: 10.1037/0033-2909.119.2.254
- Ladd, G. W., & Kochenderfer, B. J. (1996). Linkages between friendship and adjustment during early school transitions. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 322–345). New York, NY: Cambridge University Press.

- Ladd, G. W., Herald-Brown, S. L., & Kochel, K. P. (2009). Peers and motivation. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 323–348). New York, NY: Routledge.
- Maier, M. A., & Pekrun, R. (2004). Selbstkonzept. In R. W. Keck, U. Sandfuchs, & B. Feige (Hrsg.), *Wörterbuch Schulpädagogik* (S.452). Regensburg: Klinkhardt.
- Marsh, H. W., & Martin, A. J. (2011). Academic self-concept and academic achievement: Relation and causal ordering. *British Journal of Educational Psychology, 81*, 59–77. doi: 10.1348/000709910X503501
- Marsh, H. W., & Craven, R. G. (2006). Reciprocal effects of self-concept and performance from a multidimensional perspective: Beyond seductive pleasure and unidimensional perspectives. *Perspectives on Psychological Science, 1*, 133–163. doi: 10.1111/j.1745-6916.2006.00010.x
- Marsh, H. W., & Craven, R. G. (2005). A reciprocal effects model of the causal ordering of self-concept and achievement. New support for the benefits of enhancing self-concept. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *New frontiers for self research* (Vol. 2, pp. 15–52). Greenwich, CT: Information Age Publishing.
- Marsh, H. W., & Köller, O. (2003). Unification of theoretical models of relations between academic self-concept and achievement. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *International advances in self research* (Vol. 1, pp. 17–48). Greenwich, CT: Information Age Publishing.
- Marsh, H. W., Parada, P. H., & Ayotte, V. (2004). A multidimensional perspective of relations between self-concept (Self Description Questionnaire II) and adolescent mental health (Youth Self-Report). *Psychological Assessment, 16*, 27–41. doi: 10.1037/1040-3590.16.1.27
- Marsh, H. W., & Hattie, J. (1996). Future directions in self-concept research. In B. A. Bracken (Ed.), *Handbook of self-concept: Developmental, social, and clinical considerations* (pp. 421–462). Oxford, UK: John Wiley and Sons.
- Marsh, H. W. (1990). The causal ordering of academic self-concept and academic achievement: A multiwave, longitudinal panel analysis. *Journal of Educational Psychology, 82*, 646–656. doi: 10.1037/0022-0663.82.4.646
- Mayring, P. (2002). *Einführung in die Qualitative Sozialforschung*. Weinheim, Germany: Beltz.
- Midgley, C., Feldlaufer, H., & Eccles, J. S. (1989). Student-teacher relations and attitudes

- toward mathematics before and after the transition to junior high school. *Child Development*, 60, 981–992. doi: 10.2307/1131038
- Park, L. E., Crocker, J., & Vohs, K. D. (2006). Contingencies of self-worth and self-validation goals: Implications for close relationships. In K. D. Vohs & E. Finkel (Eds.), *Self and relationships: Connecting intrapersonal and interpersonal processes* (pp. 84–103). New York, NY: Guilford.
- Preckel, F., & Brüll, M. (2010). The benefit of being a big fish in a big pond: Contrast and assimilation effects on academic self-concept. *Learning and Individual Differences*, 20, 522–531. doi: 10.1016/j.lindif.2009.12.007
- Raufelder, D., Drury, K., Jagenow, D., Hoferichter, F., & Bukowski, W. (2013). Development and validation of the relationship and motivation (REMO) scales to assess students' perceptions of peers and teachers as motivators in adolescence. *Learning and Individual Differences*, 23, 182–189. doi: 10.1016/j.lindif.2013.01.001
- Roeser, R. W., & Eccles, J. S. (1998). Adolescents' perceptions of middle school relation to longitudinal changes in academic and psychological adjustment. *Journal of Research on Adolescence*, 8, 123–158. doi: 10.1207/s15327795jra0801_6
- Rosenberg, M. (1979). *Conceiving the self*. New York, NY: Basic Books.
- Rubin, K., Bukowski, W. M., & Laursen, B. (Eds.) (2009). *Handbook of peer interactions, relationships, and groups*. New York, NY: Guilford Press.
- Rubin, K. H., Bukowski, W. M., & Parker, J. (2006). Peer interactions, relationships, and groups. In N. Eisenberg (Ed.), *Handbook of child psychology: Social, emotional, and personality development* (pp. 571–645). New York, NY: Wiley.
- Ryan, A. M., & Shim, S. S. (2012). Changes in help seeking from peers during early adolescence: Associations with changes in achievement and perceptions of teachers. *Journal of Educational Psychology*, 104, 1122–1134. doi: 10.1037/a0027696
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68–78. doi: 10.1037/0003-066X.55.1.68
- Schoene, C., Dickhaeuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2002). *Skalen zur Erfassung des schulischen Selbstkonzepts. Manual*. Goettingen, Germany: Hogrefe.
- Schoene, C., Dickhaeuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2003). Das Fähigkeitsselbstkonzept und seine Erfassung. In J. Stiensmeier-Pelster & F. Rheinberg (Eds.), *Diagnostik von Motivation und Selbstkonzept. Tests und Trends* (S. 3–14). Göttingen, Germany: Hogrefe.

- Schöne, C., Dickhäuser, O., Spinath, B., & Stiensmeier-Pelster, J. (2012). *Skalen zur Erfassung des schulischen Selbstkonzepts – SESSKO* (2nd rev. ed.). Göttingen, Germany: Hogrefe.
- Schunk D. H. (1998, November). *Motivation and self-regulation among gifted learners*. Paper presented at the annual meeting of the national association of gifted children, Louisville, Kentucky.
- Seiffge-Krenke, I. (1990). Developmental processes in self-concept and coping behaviour. In H. A. Bosma, & A. E. Jackson (Eds.), *Coping and self-concept in adolescence* (pp. 49–68). Berlin, Germany: Springer.
- Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: Validation of construct interpretations. *Review of Educational Research*, *46*, 407–441. doi: 10.2307/1170010.
- Skaalvik, E. M., & Skaalvik, S. (2013). School goal structure: Associations with students' perceptions of their teachers as emotionally supportive, academic self-concept, intrinsic motivation, effort, and help seeking behavior. *International Journal of Educational Research*, *61*, 5–14, doi: 10.1016/j.ijer.2013.03.007
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, *85*(4), 571–581. doi: 10.1037/0022-0663.85.4.571
- Smith, J. A., & Osborn, M. (2003). Interpretative phenomenological analysis. In J. A. Smith (Ed.), *Qualitative psychology: A practical guide to methods* (pp. 51–80). London, UK: Sage.
- Song, I., & Hattie, J. (1984). Home environment, self-concept, and academic achievement: A causal modeling approach. *Journal of Educational Psychology*, *76*(6), 1269–1281. doi: 10.1037/0022-0663.76.6.1269
- Stanton-Salazar, R. D., & Spina, S. U. (2005). Adolescent peer networks as a context for social and emotional support. *Youth & Society*, *36*, 379–417. doi: 10.1177/0044118X04267814
- Steinberg, L. D., Brown, B. B., & Dornbusch, S. M. (1996). *Beyond the classroom: Why school reform has failed and what parents need to do*. New York, NY: Simon & Schuster.
- Steinberg L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology*, *52*, 83–110. doi: 0066-4308/01/0201-0083
- Steinhausen, H.-C., & Winkler-Metzke, C. (2001). Risk, compensatory, vulnerability, and

- protective factors influencing mental health in adolescence. *Journal of Youth and Adolescence*, *30*, 259–280. doi :10.1023/A:1010471210790
- Trautwein, U., Lüdtke, O., Marsh, H. W., & Nagy, G. (2009). Within-school social comparison: How students' perceived standing of their class predicts academic self-concept. *Journal of Educational Psychology*, *101*, 853–866. doi: 10.1037/a0016306
- Wang, M., Brinkworth, M., & Eccles, J. (2013). Moderating effects of teacher–student relationship in adolescent trajectories of emotional and behavioral adjustment. *Developmental Psychology*, *49*, 690–705. doi: 10.1037/a0027916
- Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology*, *89*, 411–419. doi: 10.1037/0022-0663.89.3.411
- Wentzel, K. R. (2002). Are effective teachers like good parents? Teaching styles and student adjustment in early adolescence. *Child Development*, *73*, 287–301. doi: 10.1111/1467-8624.00406
- Wentzel, K. R. (2009a). Peer relationships and motivation at school. In K. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 531–547). New York, NY: Guilford.
- Wentzel, K. R. (2009b). Students' relationships with teachers as motivational contexts. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 301–322). New York, NY: Routledge.
- Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology*, *35*, 193–202. doi: 10.1016/j.cedpsych.2010.03.002.
- Wilson, D. (2004). The interface of school climate and school connectedness and relationships with aggression and victimization. *Journal of School Health*, *74*, 293–299. doi: 10.1111/j.1746-1561.2004.tb08286.x
- Winkel, R. (1991). Die siebzehn Unterrichtsmethoden. In H. Gudjons (Ed.), *Unterrichtsmethoden: Grundlegung und Beispiele* (S.11–24). Hamburg, Germany: Bergmann & Helbig.
- Ybrandt, H. (2008). The relation between self-concept and social functioning in adolescence. *Journal of Adolescence*, *31*, 1–16. doi: 10.1016/j.adolescence.2007.03.004
- Yeung, R. S., & Leadbeater, B. J. (2010). Adults make a difference: The protective effects of parent and teacher emotional support on emotional and behavioral problems

among peer victimized adolescents. *Journal of Community Psychology*, 38, 80–98.

doi: 10.1002/jcop.20353

Wylie, R. C., Miller, P. G., Cowles, S. S., & Wilson, A. W. (1979) *The self-concept: Theory and research on selected topics* (2nd rev. ed.). Lincoln, NE: University of Nebraska Press.

Appendix

Interview Guideline

- Please tell me, how do you generally get along with your classmates?
- Do you have (many) friends in class?
- Are there fellow-students you do not like?
- Do you hold together in class and how do you feel about it?
- Are there any specific groups that always stick together?
- Would you say that there are any outsiders in your class?
- Do you compare your grades to others?
- How do you feel when you get worse results than others?
- How do you prepare for a test?
- Do you know whether your classmates learn, too? Does that matter/ motivate/ stress you?
- If your friend takes active part in class, do you also try to participate more?
- Do you motivate each other sometimes to take part in class or is it rather uncool to be active?
- How do you feel when one of your friends/fellow-students is better in a subject than you? Does it motivate you?
- How important it is for you to get along with classmates?
- Is it important to you that your classmates notice that you do a lot for school?
- Do you get along well with your teachers?
- Are there any teachers at whose lessons you work really hard? Do you have any favorite teachers?
- Are there any teachers at whose lessons you feel that class is more fun? How do they differ from others?
- How could a teacher motivate you?
- Is it important for you to get along well with a teacher?
- Do think it is important that a teacher notices your effort in class?
- What motivates you to learn?
- When and in which context/situation do you learn best?

CHAPTER 5

The main objective of this Ph.D. thesis was to investigate the role of both socio-motivational teacher-student and student-student relationships in the association of school self-concept and achievement motivation among adolescent students. Specifically, it was aimed to expand the existing research by identifying and exploring potential differences between students with a high or low school self-concept. The investigation was based on the data obtained from 1088 7th and 8th grade students from 23 schools in the federal state of Brandenburg, Germany.

5.1 Review of the Main Findings

Though decades of research are devoted to the association of self-concept in general as well as school self-concept as its component and achievement (Hattie, 1992), and there is a developing trend towards accounting for achievement motivation in this respect (Valentine & DuBois, 2005), no authoritative works were found that consider both school self-concept, achievement motivation and socio-motivational relationships as possible mediators between the abovementioned constructs. The most recent works relating to the role of social relationships in the school context were either focused on one type of relationships only (teacher-student relationships (Federici & Skalvik 2014) or student-student relationships (Nelson & DeBacker, 2008)) or linked to achievement and motivation oriented variables (Manyu, Frieze, Nokes-Malach, & Cheong, 2013; Molloy, Gest, Rulison, 2010) without considering school self-concept. In terms of the reciprocal relation between achievement and school self-concept (Marsh & Köller, 2003; Lyon, 1993; Marsh, 1990), research to date has made the assumption that intervention strategies aimed only at achievement boost would lack long-term orientation. A more complex approach is required, and therefore current research work is aimed at investigating the role of both social and motivational relations with teachers and peers in the association of school self-concept and achievement motivation. The objective is to advance the existing body of research and thereby contribute in that way to the development of new, improved prevention and intervention strategies for the period of school transition among adolescent students.

With that aim, **STUDY I** was focused on investigating the associations among school self-concept, achievement motivation and socio-motivational relationships. Specifically, it explored the function of socio-motivational relationships with teachers and peers as

mediators between the individual school self-concept and achievement motivation components (achievement drive, perseverance and effort, fear of success). The choice of individual aspect of the school self-concept was determined by existing research (Leahy & Hunt, 1983; Nicholls, 1984; Yussen & Kane, 1985) that suggests that adolescent students benefitted more from comparing their cognitive abilities to own cognitive abilities in the past, which could contribute to the quality of self-report results.

The hypothesized associations were addressed by means of correlation analyses and structural equation modeling (SEM). The results showed that both social and motivational relationships with teachers played an important role in school setting. In particular, individual school self-concept positively correlated with both social and motivational teacher relations as well as perseverance and effort and achievement drive. In addition to that, teacher-student relationships negatively correlated with fear of success, whereas teachers as positive motivators had a positive correlation with perseverance and effort as well as achievement drive levels. The SEM showed that the teacher-student relationships partially mediated the association between individual school self-concept and achievement drive, whereas the association between individual school self-concept and fear of success, as well as between individual school self-concept and perseverance and effort were fully mediated by it. Moreover, the variable teachers as positive motivators partially mediated the association between the individual school self-concept and achievement drive as well as the association between individual school self-concept and perseverance and effort.

In contrast, peer-oriented variables had in general less relevance in the association of individual school self-concept and achievement motivation. Furthermore, they revealed more differentiated functions: while peers as positive motivators was positively correlated with achievement drive (which supports the existing research results of Ladd, Herald-Brown and Kochel (2009), Juvonen and Wentzel (1996), Wentzel, Battle, Russell and Looney (2010)), student-student relationships correlated positively with perseverance and effort and negatively with fear of success, and in this way could contribute to students' emotional well-being (also suggested by the findings of Harter (1996); Rubin, Bukowski and Laursen (2009); Rubin, Bukowski and Parker (2006); Furman and Buhrmester (1992)). The peer-oriented variables did not correlate with school self-concept and the hypothesis that they might serve as mediators could not be confirmed. However, it might be the nature of the individual self-concept variable that did not account for peer influence. To clarify this issue and add more detail to the school self-concept role, socio-motivational

relationships and achievement motivation in educational context, **STUDY II** was conceptualized and implemented.

With regard to the first results, **STUDY II** put absolute school self-concept as the most universal dimension forward in the basis of the high and low school self-concept group distinction. It was focused on possible differences among high and low school self-concept students in their perception of socio-motivational relationships with teachers and peers as well as in their perseverance, effort and achievement drive.

Bivariate correlations, latent mean comparison and multigroup SEM were used to address this issue. The findings of the latent mean comparison showed that high and low school self-concept students differed significantly in their perception of socio-motivational support from teachers and achievement motivation variables. Specifically, students with a high school self-concept displayed significantly more perseverance and effort, achievement drive, as well as reported better social and motivational relationships with teachers.

As the results of the multigroup SEM have shown, both teacher-related variables predicted perseverance and effort for the low school self-concept group, but not achievement drive, which could possibly be explained by fewer demands and expectations from a teacher in regard of low school self-concept students (Archambault, Janocz, & Choinard, 2012), which could be a factor in reducing their motivation, but not their perseverance and effort to master the school program.

At the same time for the high school self-concept group the teacher-student relationships predicted both perseverance and effort, and achievement drive. The findings suggest that students with a high school self-concept might have better relationships with their teachers, and be motivated by them to a greater extent. Existing research taps that teachers might treat high and low self-concept students differently (Hay, Ashman & van Kraayenoord, 1998) thus in the process of studying high school self-concept students might get more attention and feedback, which in turn could have a positive effect on their motivation for further work (Harris & Rosenthal, 1985) if compared to their low school self-concept peers. This additionally implies that low school self-concept students might be disadvantaged in the process of school education especially during the period of transition when their affiliative needs for bonding with teachers is increased (Raufelder, 2007; Raufelder, Bukowski, & Mohr, 2013).

In contrast to that, no differences between the groups were revealed when addressing the peer-oriented variables. Curiously, for both groups student-student relations were

negatively associated with achievement drive, a possible reason for which could be the competitive nature of achievement drive that implies the desire to outperform others, and therefore might negatively address the comradeship in class (Preckel, Niepel, Schneider, & Brunner, 2013).

These findings not only suggest the differentiated role of peers (social vs. motivational) but also extend existing evidence concerning the role teachers play in school. They suggest that teachers might be not equally supportive and motivating in perception of all students. Particularly low school self-concept students might feel disadvantaged, which might result in lower achievement motivation and consequently in lower achievement results, which in turn might keep their self-concept on a constant lower level.

The assumptions produced by the second study were further investigated in **STUDY III**. To provide a more profound analysis of differences and similarities between the groups as well as account for possible important aspects not covered by the quantitative data survey, it was decided to conduct a study using qualitative research methods. Semi-structured interviews with an interview guideline including questions concerning students' relationships with teachers, peers and motivation were chosen as the most appropriate method to address the research issue. In total 36 students who had a stable school self-concept were interrogated: 18 belonging to low and 18 to the high school self-concept group. The data obtained in the interviewing process was interpreted by means of thematic analysis (Braun & Clarke, 2006).

The analysis results stood in line with the findings of STUDY II. However, they revealed various aspects of peer relations. The results showed that peers generally contribute to a positive social climate (Wilson, 2004) and provide emotional support (which was also suggested by the works of Harter, 1996; Rubin, Bukowski, & Laursen, 2009; Rubin, Bukowski, & Parker, 2006). Moreover peers served as important sources of motivation for both high and low school self-concept groups, which corresponds with already existing research (Harter, 1996; Wentzel, 2009a, 2009b; Wentzel, Battle, Russell, & Looney, 2010; Raufelder, Drury, Jagenow, Hoferichter, & Bukowski, 2013). However, the motivational drive differed between the groups: while high school self-concept students felt more motivated through comparison to peers and the competitions levels were quite high, the low school self-concept group needed support and empowerment. The needs of groups also differed from one another; for example, the high school self-concept group was rather searching emotional support as well as acknowledgement from their peers, while

low school self-concept students required emotional support alongside of learning support and acceptance.

As thematic analysis showed, close relations with teachers were important sources of emotional and motivational support for all students. This finding is in line with previous research that identified teachers' emotional support as essential for students' motivation (Federici & Skaalvik, 2014; Hamre & Pianta, 2006; Colarossi & Eccles, 2003). In this respect high school self-concept students emphasized the feelings of belonging to the group and creating a better classroom atmosphere that teachers accounted for. In contrast, low school self-concept students prioritized not only emotional comfort, but also a feeling of being fairly treated. Another interesting point was the feedback issue: students of the HSSC group were more motivated by direct feedback including critique, whereas students of the LSSC group benefited more from an indirect involvement on the teacher's part (e.g., encouragement to participate at the lesson).

The results as interpreted in terms of the Self-Worth Theory of Achievement Motivation (Covington, 1984; Covington & Berry, 1976) suggest: high school self-concept students emphasized the need to be acknowledged, which might boost their ability perceptions and as a result increase their self-worth and motivate them. In contrast, low self-concept students were in need of acceptance irrespective of their ability, which might be their strategy to maintain their feeling of self-worth. In addition, they were ready to invest greater effort when given a second chance and emphasized the importance of feedback applied to their effort instead of being assessed as a person, which stands in line with existing research (Eccles & Wigfield, 2002).

In sum, the results suggest that positive interpersonal relationships in school setting during the first years of secondary school can improve the achievement drive, perseverance and effort and partially reduce fear of success among adolescent students. Thereby, the findings emphasize the differentiated roles that teachers and peers play in this context as well as accentuate interindividual differences while addressing specific needs of high and low school self-concept students. Overall, teachers play a significant role for all students, however, while high self-concept students are especially in need of emotional support from teachers, for low school self-concept students learning and emotional support from teachers are of equal importance. This serves another argument in educational discourse that especially this group is vulnerable to changes brought about by the transition from primary to secondary school. The particular theoretical and practical implications stemming from the current research are enlisted in the next chapter.

5.2 Theoretical and Practical Implications

The idea that in the school context self-concept is “not only present in all learning but also a major outcome of all learning situations, though its presence might pass unnoticed by teachers intent on inculcation of academic knowledge and skill” dates back as far as 1958 (Burns, 1979). Later on this aspect was addressed while widening the task of a teacher as “to help each student gain a positive image of himself as a learner” (Purkey, 1967, p. 24). Nowadays the maintenance of general self-concept as well as school self-concept as its component along with education goals stands in focus of the majority of educational policies (Craven, Marsh, & Burnett, 2005). However, in practice the adolescent years that institutionally coincide with the period of school transition are still the years of deterioration of achievement and achievement motivation (Watt 2004; Zusho & Pintrich, 2001; Peetsma et al., 2005), which might negatively affect students’ school self-concept, in turn negatively influencing further achievement (Marsch, 1990; Marsh & Köller, 2003), which might lead as far as to school dropout (Dohn, 1991; Finn, 1989). The current research serves an empirical proof that low school self-concept students are especially vulnerable in this period of time and need more learning and emotional support from teachers to successfully overcome it. Moreover, the results indicate that social and motivational perspectives in relations with significant others are important to be distinguished as these might produce impact on the generalization of results.

5.2.1 Theoretical Implications

The findings suggest that it is important to address school self-concept research including not only achievement dimensions, but also motivation- and socially-oriented factors and regard the whole as a result of complex interplay among multiple factors. Moreover, in future research precise definitions of school self-concept as well as types of relationships with significant others should be provided in order to account for detailed results. Particularly important is the distinct subdivision of the terms of school self-concept and self-esteem. As consequences of earlier research (which was critically observed by Wylie, 1974; 1979) the terms are still often used interchangeably in a variety of works. However, while high self-concept results in positive outcomes, high self-esteem might produce a contrary result in the educational process (Baumeister, Campbell, Krueger, & Vohs, 2003). In addition, the issue of stability and conditions of the maintenance of school self-concept deserve more precise attention of the researchers in order to develop new

interventional strategies, aimed at preventing students from motivational decline associated with the school transition. Furthermore, the findings of this thesis underline differences in students' emotional and motivational needs, depending on their having a high or a low school self-concept. Until today, there are no theoretical assumptions concerning this issue. A link between SDT and self-concept research might be a first initial step towards overcoming this gap in the literature.

The current predominant achievement-oriented approach used at schools was largely criticized by Covington (1989), who stated that both teachers and students are victims „ensnared by the same outmoded views of motivation and learning that hold their students hostage“ (Covington, 1998, p. 9) and emphasized the importance of the role of reasons to achieve. The SDT (Deci & Ryan, 1985, 1991, 2000) also reflects these ideas in suggesting the different levels of autonomy-based behavior and outing self-determination as highest value. Therefore, it is important to include not only the association of school self-concept and grades but also such aspects as acceptance or acknowledgement in further empirical research to implement theory into practice.

Moreover, it is important to account not only for intra- and inter-individual differences of students in further research, but also consider a teacher's self-concept (Yeung, Craven, & Kaur, 2014) and its impact on teacher-student communication and motivation strategies, especially considering the issue of feedback. It is also important to account for sex differences as patterns of interaction and support between male or female students with male and female teachers might differ (Malecki & Demaray, 2003; Webb & Kenderski, 1985). In addition, the influence of the school environment (e.g., relations with peers and teachers) should be examined in a longitudinal way, particularly in respect of the quality of the relationships following Lerner's Developmental Contextualism (Lerner, 1986, 1991, 1998).

5.2.2 Practical Implications

Current research emphasizes the importance of accounting for intra- and inter-individual differences of learners in the process of teaching. In particular, it suggests that students with high and low school self-concepts reveal different needs with regard to socio-motivational relationships with teachers and peers and achievement motivation aspects.

The quotation of Purkey (1967), used as an epigraph to the dissertation, states that self-concept, on the one hand “resists change as much as possible in order to enjoy a consistent and organized world” and on the other hand “will change if the need is great enough”. Considering that Purkey published these ideas more than half a century ago, it can be said that they have an enduring relevance in the context of current educational theory. In practical terms, the sensibilization of both practicing educators and intending teachers in regard of different levels of school self-concept in their students is urgently required. As different school self-concept levels reveal different needs of students, accounting for a students’ school self-concept in the school environment could be beneficial to provide the nessesary support and in this way enable positive school self-concept development.

Considering the differentiated roles that peer and teachers play in achievement motivation among high and low school self-concept students, teachers might use peer support for low school self-concept students in terms of student-student mentoring or in group activities. Additionally, teaching and learning methods should be analyzed and, when implemented, adjusted to the students’ school self-concept levels on an individual basis. For example, while high school self-concept students may profit from direct feedback from the teachers and prefer to perform their tasks by themselves, low school self-concept students may need more time and empathy from a teacher as well as may perform better in group-based activities. Moreover, the self-concept issue should be carefully considered in the context of such activities as group discussions, as low school self-concept student may show less activity irrespective of their knowledge level. The learner-centered (MacLellan, 2008) methodological concepts and approaches are to be developed and practically implemented.

Particularly important in this process of teaching and learning is the issue of feedback (Kluger & DeNisi, 1996) as it should be used according to the student’s school self-concept: though in general person-oriented feedback is reported to be a low effect strategy (Hattie & Timperley, 2007), it seems to be quite often used by teachers. While high school self-concept students would take critique for teachers’ interest in them, low school self-concept students are especially sensitive to teachers’ verbal characteristics, and express the wish of feedback to address the accomplished task but not their individual ability to accomplish the task. In addition, though students with different levels of school self-concept might be empirically identified by teachers (Hay, Ashman, & Van Kraayenoord, 1998), more practical strategies to identify high and low school self-concept

students (for example, tests at the beginning and the end of the school year combined with practical observations) are to be developed.

Based on the theoretical and practical implications outlined above new or modified prevention and intervention programs should be developed and evaluated, focusing on socio-motivational relationships as a starting point to foster both students' school self-concept and achievement motivation.

5.3 Future Directions

In summary, the present Ph.D. study extends the existing research by addressing school self-concept, achievement motivation and socio-motivational relations within the frame of one research. Methodologically, both qualitative and quantitative methods are used to explore the role of socio-motivational relations in the association of school self-concept and achievement motivation as well as the differences in perception of social and motivational support from peers and teachers among low and high school self-concept students. It should be emphasized that only students with stable (over two years) high and stable (over two years) low school self-concept were interviewed, whereas the study did not account for students whose school self-concept was subject to changes during two years of secondary school. To draw possible conclusions on what the developmental trends in their self-concepts were, and how they can be taken into account in the schooling process, a longitudinal design is required. In addition, for further analysis and better interpretation of the results, the inclusion of additional raters for more accurate estimation of learners' self-concept, such as parents, school psychologists or teachers, is required. Together with it, for the development of particular practical strategies, subject-specific school self-concepts (Marsh, 1990) might be considered. Future investigations of associations between school self-concept, achievement motivation and socio-motivational relations using an international sample are required as it might contribute to generalization of results and development of universal strategies for practical application in the improvement of secondary school education systems worldwide. Gender differences should also be considered in further investigations, in light of research showing that girls may differ from boys in a variety of aspects, such as perception of support (Malecki & Demaray, 2003) or fear of success (Horner, 1974) levels.

Moreover, it might be important to account for a teacher' self-concept (Yeung, Craven, & Kaur, 2014), as it might affect not only a teacher's perceptions and behavior in class, but also the teaching styles and methods implemented during the lesson.

In addition, the inclusion of social self-concept and a more distinct subdivision between peers and friends (Coleman & Hendry, 1990) is recommended. Furthermore, the association between school self-concept and grades should be taken into account, providing empirical evidence that high school self-concept students are in fact high achievers (McCoach & Siegle, 2001).

Overall, the present Ph.D. study extends the existing research on school self-concept and achievement motivation by including socio-motivational relationships with peers and teachers in this association. The findings indicate that (a) relationships with teachers mediate the abovementioned association, that (b) socio-motivational relationships with teachers positively predict motivation of students with high and low school self-concept and thereby (c) reveal inter-individual differences and differentiated needs of high and low school self-concept students in respect of their socio-motivational relationships with both peers and teachers in the context of education.

5.4 General Conclusions

The results from the studies I, II and III allow to draw the following conclusions:

- Socio-motivational relationships with teachers play a mediating role in the association of individual school self-concept and achievement motivation components. In particular, teacher-student relationships partially mediate the association of individual school self-concept and achievement drive and fully mediate the association of individual school self-concept and perseverance and effort as well as fear of success. Moreover, teachers as positive motivators partially mediate the association of individual school self-concept and achievement drive and fully mediate the association with perseverance and effort. In contrast, neither student-student relationships nor peers as positive motivators function as mediators (STUDY I).
- Students with a high school self-concept displayed significantly more perseverance and effort, achievement drive, as well as reported better social and motivational relationships with teachers. In contrast, students with low and high school self-concept did not significantly differ in their perception of socio-motivational relationships with peers (STUDY II). However, when addressed qualitatively, the high and low school self-concept students revealed different needs concerning their peers: while high school self-concept students addressed acknowledgement and general emotional comfort, low school self-concept students emphasized acceptance by others and both learning and emotional support (STUDY III).
- For low and high absolute school self-concept students socio-motivational relations with teachers play differentiated roles: while for the high school self-concept group teacher-student relations predict both perseverance and effort and achievement drive, for the low school self-concept groups the same is true with respect to perseverance and effort only. This suggests that teachers are not equally supportive for all students and low school self-concept students may be disadvantaged especially during the school transition period (STUDY II).
- Qualitative analysis with high and low absolute school self-concept students revealed that they have different expectations and needs addressing their teachers. While in relationships with teachers high school self-concept students take critical feedback as a sign of teacher's interest and put emotional support forward, low school self-concept students accentuate both learning and emotional support,

combined with care, understanding, empowerment and the possibility of receiving another chance (STUDY III).

- Overall, the power and differentiated roles of socio-motivational relationships in school and the association of teacher-related variables with both school self-concept and achievement motivation is underlined and should further be investigated in upcoming studies.

5.5 References

- Archambault, I., Janocz, M., & Choinard, R. (2012). Teacher beliefs as predictors of adolescents' cognitive engagement and achievement in mathematics. *The Journal of Educational Research, 105*, 319–328. doi: 10.1080/00220671.2011.629694
- Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003) Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest, 4*, 1–44. doi: 10.1111/1529-1006.01431
- Braun, V., & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77–101. doi: 10.1191/1478088706qp063oa
- Burns, R. B. (1979). *The self concept in theory, measurement, development and behavior*. London, UK: Longman Group Limited.
- Colarossi, L. G., & Eccles, J. S. (2003). Differential effects of support providers on adolescents' mental health. *Social Work Research, 27*, 19–30. doi: 10.1093/swr/27.1.19
- Coleman, J. C., & Hendry, L. (1990). *The nature of adolescence*. London, UK: Routledge.
- Covington, M. V. (1984). The self-worth theory of achievement motivation: Findings and implications. *The Elementary School Journal, 85*, 4–20. doi: 10.1086/461388
- Covington, M. V. (1998). *The will to learn. A guide for motivating young people*. New York, NY: Cambridge University Press.
- Covington, M. V., & Berry, R. G. (1976). *Self-worth theory and school learning*. New York, NY: Holt, Rinehart & Winston.
- Craven, R. G., Marsh, H. W., & Burnett, P. (2003). Cracking the self-concept enhancement conundrum: A call and blueprint for the next generation of self-concept enhancement research. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *International Advances in Self Research* (Vol. 1, pp. 91–126). Greenwich, CT: Information Age Publishing.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.
- Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska symposium on motivation. Perspectives on motivation* (pp. 237–288). Lincoln: University of Nebraska Press.

- Deci, E. L., & Ryan, R. M. (2000). The what and why of goal pursuits: Human needs and the self-determination of behaviour. *Psychological Inquiry*, 11(4), 227–268. doi:10.1207/S15327965PLI1104_01
- Dohn, H. (1991). “Drop-out” in the Danish high school (gymnasium): An investigation of psychological, sociological and pedagogical factors. *International Review of Education*, 37(4), 415–428. doi: 10.1007/BF00597619
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109–132. doi: 10.1146/annurev.psych.53.100901.135153.
- Federici, R. A., & Skaalvik, E. M. (2014). Students’ perceptions of emotional and instrumental teacher support: Relations with motivational and emotional responses. *International Education Studies*, 7, 21–36. doi: 10.5539/ies.v7n1p21
- Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research*, 59(2), 117–142. doi: 10.3102/00346543059002117
- Furman, W., & Buhrmester, C. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development*, 63, 103–105. doi: 10.1111/j.1467-8624.1992.tb03599.x
- Hamre, B. K., & Pianta, R. C. (2006). Student-teacher relationships as a source of support and risk in schools. In G G. Bear & K. M. Minke (Eds.), *Children’s needs: Development, prevention, and intervention* (pp. 59–71). Bethesda, MD: National Association of School Psychologists.
- Harris, M. J., & Rosenthal, R. (1985). Mediation of interpersonal expectancy effects: 31 meta-analyses. *Psychological Bulletin*, 97, 363–386. doi: 10.1037/0033-2909.97.3.363
- Harter, S. (1996). Teacher and classmate influences on scholastic motivation, self-esteem, and level of voice in adolescents. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation – Understanding children’s school adjustment*, (pp. 11–42). New York, NY: Cambridge University Press.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77, 81–112. doi: 10.3102/003465430298487
- Hattie, J. (1992). *Self-concept*. Hillsdale, NJ: Erlbaum.
- Hay, I., Ashman, A. F., & Van Kraayenoord, C. E. (1998). Educational characteristics of students with high or low self-concept. *Psychology in the Schools*, 35, 391–400. doi: 10.1002/(SICI)1520-6807(199810)35:4<391::AID-PITS10>3.0.CO;2-#
- Horner, M. S. (1974). The measurement and behavioral implications of fear of success in

- women. In J. Atkinson & J. Raynor (Eds.), *Motivation and achievement*. (pp.91-117) New York, NY: Wiley.
- Juvonen, J., & Wentzel, K. R. (Eds.) (1996). *Social motivation: Understanding children's school adjustment*. New York, NY: Cambridge University Press.
- Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance. A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, *119*, 254–284. doi: 10.1037/0033-2909.119.2.254
- Ladd, G. W., Herald-Brown, S. L., & Kochel, K. P. (2009). Peers and motivation. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 323–348). New York, NY: Routledge.
- Leahy, R. L., & Hunt, T. M. (1983). A cognitive-developmental approach to the development of conceptions of intelligence. In R. L. Leahy (Ed.), *The child's construction of social inequality* (pp. 135-160). New York, NY: Academic Press.
- Lerner, R. M. (1986). *Concepts and theories of human development* (2nd ed.). New York, NY: Random House.
- Lerner, R. M. (1991). Changing organism–context relations as the basic process of development: A developmental contextual perspective. *Developmental Psychology*, *27*, 27–32. doi: 10.1037/0012-1649.27.1.27
- Lerner, R. M. (1998). Theories of human development: Contemporary perspectives. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Theoretical models of human development* (Vol. 1, pp. 1–24). New York, NY: John Wiley & Sons.
- Lyon, M. A. (1993). Academic self-concept and its relationship to achievement in a sample of junior high school students. *Educational and Psychological Measurement*, *53*, 201–211. doi: 10.1177/0013164493053001022
- MacLellan, E. (2008). The significance of motivation in student-centred learning: a reflective case study. *Teaching in Higher Education*, *13*(4), 411-421. doi: 10.1080/13562510802169681
- Malecki, C. K., & Demaray, M. K. (2003). What type of support do they need? Investigating student adjustment as related to emotional, informational, appraisal, and instrumental support. *School Psychology Quarterly*, *18*, 231–252. doi:10.1521/scpq.18.3.231.22576
- Manyu, L., Frieze, E. H., Nokes-Malach, T. J., & Cheong, J. (2013). Do friends always help your studies? Mediating processes between social relations and academic

- motivation. *Social Psychology of Education*, 16, 129–149. doi 10.1007/s11218-012-9203-5
- Marsh, H. W. (1990). The causal ordering of academic self-concept and academic achievement: a multiwave, longitudinal panel analysis. *Journal of Educational Psychology*, 82, 646–656. doi: 10.1037/0022-0663.82.4.646
- Marsh, H. W., & Köller, O. (2003). Bringing together two theoretical models of relations between academic self-concept and achievement. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *International advances in self research* (Vol. 1, pp. 17–45). Greenwich, CT: Information Age Publishing.
- McCoach, D. B., & Siegle, D. (2001). A comparison of high achievers' and low achievers' attitudes, perceptions, and motivations. *Academic Exchange Quarterly*, 5(2), 71–76. Retrieved from: <http://www.gifted.uconn.edu/siegle/Publications/AEQ/ComparisonOfAchievers.pdf>
- Molloy, L. E., Gest, S. D., & Rulison, K. L. (2010). Peer influences on academic motivation: exploring multiple methods of assessing youths' most "influential" peer relationships. *The Journal of Early Adolescence*, 31(13), 13–40. doi: 10.1177/0272431610384487.
- Nelson, R. M., & DeBacker, T. K. (2008). Achievement motivation in adolescents: the role of peer climate and best friends. *Journal of Experimental Education*, 76(2), 170–189. doi:10.3200/JEXE.76.2.170-190
- Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, 91, 328–346. doi: 10.1037/0033-295X.91.3.328
- Peetsma, T., Hascher, T., Van der Veen, I., & Roede, E. (2005). Relations between adolescents' self-evaluations, time perspectives, motivation for school and their achievement in different countries and at different ages. *European Journal of Psychology of Education*, 20, 209–225. doi: 10.1007/BF03173553
- Preckel, F., Niepel, C., Schneider, M., & Brunner, M. (2013). Feeling good at school but not accepted by peers? A longitudinal study on reciprocal effects of adolescents' academic and social self-concepts. *Journal of Adolescence*, 36, 1165–1175. doi:10.1016/j.adolescence.2013.09.001
- Purkey, W. (1967). The self and academic achievement. *The Florida educational research and development council*, 3, 1–36. Retrieved from: <http://files.eric.ed.gov/fulltext/ED026681.pdf>

- Raufelder, D. (2007). *Von Machtspielen zu Sympathiegesten. Das Verhältnis von Lehrern und Schülern im Bildungsprozess*. Marburg, Germany: Tectum.
- Raufelder, D., Bukowski, W., & Mohr, S. (2013). Thick description of the teacher-student relationship in the educational context of school: results of an ethnographic field study. *Journal of Education and Training Studies*, *1*(2), 1–18.
doi:10.11114/jets.v1i2.108
- Raufelder, D., Jagenow, D., Drury, K., & Hoferichter, F. (2013). Social relationships and motivation in secondary school: 4 different motivation types. *Learning and Individual Differences*, *22*, 89–95. doi: 10.1016/j.lindif.2012.12.002
- Rubin, K., Bukowski, W. M., & Laursen, B. (Eds.) (2009). *Handbook of peer interactions, relationships, and groups*. New York, NY: Guilford.
- Rubin, K. H., Bukowski, W. M., & Parker, J. (2006). Peer interactions, relationships, and groups. In N. Eisenberg (Ed.), *Handbook of child psychology: Social, emotional, and personality development* (pp. 571–645). New York, NY: Wiley.
- Valentine, J. C., & DuBois, D. L. (2005). Effects of self-beliefs on academic achievement and vice versa. Separating the chicken from the egg. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *New Frontiers for Self Research* (Vol. 2, pp. 53-78). Greenwich: Information Age Publishing.
- Watt, H. M. G. (2004). Development of adolescents' self-perceptions, values and task perceptions according to gender and domain in 7th - through 11th- grade Australian students. *Child Development*, *7*, 1556–1574. doi: 10.1111/j.1467-8624.2004.00757.x
- Webb N. M., & Kenderski, C. M. (1985). Gender differences in small-group interaction and achievement in high- and low-achieving classes. In L .C. Wilkinson & C. B. Marrett (Eds.), *Gender differences in classroom interaction* (pp.209–234). New York, NY: Academic Press.
- Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology*, *35*, 193–202. doi: 10.1016/j.cedpsych.2010.03.002
- Wentzel, K. R. (2009a). Peers and academic functioning at school. In K. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 531–547). New York, NY: Guilford.
- Wentzel, K. R. (2009b). Students' relationships with teachers as motivational contexts.

- In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 301–322). New York, NY: Routledge.
- Wylie, R. C. (1974). *The self-concept: A review of methodological considerations and measuring instruments*. Lincoln: University of Nebraska Press.
- Wylie, R. C., Miller, P. G., Cowles, S. S., & Wilson, A. W. (1979). *The self-concept. Revised edition*. Lincoln: University of Nebraska Press.
- Wilson, D. (2004). The interface of school climate and school connectedness and relationships with aggression and victimization. *Journal of School Health, 74*, 293–299. doi: 10.1111/j.1746-1561.2004.tb08286.x
- Yeung, A. S., Craven, R. G., & Kaur, G. (2014) Teachers' self-concept and valuing of learning: relations with teaching approaches and beliefs about students. *Asia-Pacific Journal of Teacher Education, 42*(3), 305–320.
doi: 10.1080/1359866X.2014.905670
- Yussen, S. R., & Kane, P. T. (1985). Children's concept of intelligence. In Yussen, S. R. (Ed.), *The growth of reflection in children* (pp. 207–241). New York, NY: Academic Press.
- Zusho, A., & Pintrich, P. R. (2001). Motivation in the second decade of life. In T. Urdan & F. Pajares (Eds.), *Adolescence and education* (pp.163–200). Greenwich, CT: Information Age.

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7. Lebenslauf

Mein Lebenslauf wird aus Gründen des Datenschutzes in der elektronischen Fassung meiner Arbeit nicht veröffentlicht.

8. Zusammenfassung der Ergebnisse in deutsche Sprache

Die Ergebnisse der Studien I, II und III erlauben folgende Schlüsse:

- Sozio-motivationale Beziehungen mit Lehrern/-innen spielen eine mediiierende Rolle in der Verbindung zwischen individuellem schulischen Selbstkonzept sowie den Komponenten der Leistungsmotivation („achievement motivation“). Im speziellen mediiieren Lehrer-Schüler-Beziehungen teilweise die Verbindung zwischen individuellem schulischen Selbstkonzept und Leistungsstreben („achievement drive“). Sie mediiieren zudem vollständig die Beziehung zwischen individuellem schulischen Selbstkonzept, Ausdauer und Fleiß („perseverance and effort“) sowie der Angst vor Erfolg („fear of success“). Weiter mediiieren Lehrer/-innen als positive Motivatoren teilweise die Verbindung zwischen individuellem schulischen Selbstkonzept und Leistungsstreben („achievement drive“), und vollständig mit Ausdauer und Fleiß („perseverance and effort“). Im Gegensatz dazu fungieren weder Schüler-Schüler-Beziehungen noch Peers als positive Motivatoren als Mediatoren.
- Schüler/-innen mit hohem schulischem Selbstkonzept zeigen signifikant mehr Ausdauer und Fleiß („perseverance and effort“), Leistungsstreben („achievement drive“) und berichten auch von besseren sozio-motivationalen Beziehungen zu Lehrern/-innen. In Abgrenzung dazu unterscheiden sich Schüler/-innen mit hohem oder niedrigem Selbstkonzept nicht signifikant in ihrer Wahrnehmung von sozio-motivationalen Beziehungen zu ihren Peers (Studie II). Nichtsdestotrotz konnten bei der weiterführenden qualitativen Untersuchung Unterschiede in den Bedürfnissen der Schüler/-innen festgestellt werden, die auf das schulische Selbstkonzept zurückzuführen sind: während Schüler/-innen mit hohem Selbstkonzept Bestätigung und emotionales Wohlbefinden für wichtig befinden, setzen Schüler/-innen mit niedrigem Selbstkonzept den Schwerpunkt auf Akzeptanz durch andere sowie Unterstützung in fachlichen und emotionalen Themen (Studie III).
- Für Schüler/-innen mit niedrigem und hohem absoluten Selbstkonzept spielen sozio-motivationale Beziehungen mit Lehrern/-innen unterschiedliche Rollen: während für Schüler/-innen mit hohem schulischem Selbstkonzept Lehrer-Schüler-Beziehungen sowohl Ausdauer und Fleiß („perseverance and effort“) als auch

Leistungsstreben („achievement drive“) begünstigen, gilt dies bei Schülern/-innen mit niedrigem schulischen Selbstkonzept nur für Ausdauer und Fleiß („perseverance and effort“). Dies legt den Schluss nahe, dass Lehrer/-innen möglicherweise nicht gleichermaßen hilfreich für alle Schüler/-innen sind und insbesondere Schüler/-innen mit niedrigem schulischen Selbstkonzept dadurch Nachteile erfahren.

- Die qualitativen Analysen der Interviews mit Schülern/-innen mit hohem bzw. niedrigem absoluten schulischen Selbstkonzept zeigten, dass die Schüler/-innen unterschiedliche Erwartungen und Bedürfnisse gegenüber ihren Lehrern/-innen haben. Während Schüler/-innen mit hohem schulischen Selbstkonzept Kritik des Lehrers bzw. der Lehrerin als Zeichen der Aufmerksamkeit wahrnehmen und ansonsten Wert auf emotionale Unterstützung legen, betonen Schüler/-innen mit niedrigem schulischen Selbstkonzept die Relevanz sowohl der fachlichen als auch der emotionalen Unterstützung in Kombination mit Fürsorge, Verständnis und der Möglichkeit auf eine zweite Chance (Studie III).
- Insgesamt unterstreichen diese Ergebnisse die Relevanz der unterschiedlichen Rollen sozio-motivationaler Beziehungen in der Schule sowie die Verbindung lehrerbezogener Variablen mit dem schulischen Selbstkonzept einerseits und der Leistungsmotivation („achievement motivation“) andererseits. Eine längsschnittliche Untersuchung in zukünftigen Studien wird empfohlen.

9. Liste der aus dieser Dissertation hervorgegangenen (Vor)Veröffentlichungen

Die vorliegende Dissertation wurde als kumulative Arbeit eingereicht. Grundlage dieser Arbeit sind die folgenden Publikationen:

Bakadorova, O., & Raufelder, D. (2014). The mediating role of socio-motivational support in the association between individual school self-concept and achievement motivation amongst adolescent students. *European Journal of Psychology of Education, 29*, 347–366. doi: 10.1007/s10212-013-0202-5

Bakadorova, O., & Raufelder, D. (in press). Do socio-motivational relationships predict motivation in adolescents with low and high school-self-concept? *The Journal of Educational Research*.

Bakadorova, O., & Raufelder, D. (in press). Perception of teachers and peers during adolescence: Does school self-concept matter? Results of a qualitative study. *Learning and Individual Differences* (accepted for publication)

10. Versicherung, die Arbeit selbständig verfasst zu haben

Erklärung

Hiermit versichere ich, die vorliegende Arbeit selbständig verfasst und nur angegebene Hilfsmittel verwendet zu haben. Die aus anderen Quellen übernommenen Daten und Konzepte sind unter Angabe der Quelle gekennzeichnet. Die Arbeit wurde bisher in gleicher oder ähnlicher Form keiner anderen Hochschule zur Promotion vorgelegt.

Olga Bakadorova

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