

# “It’s cool but challenging” The Relevance of Basic Need Fulfillment for Students’ School Enjoyment and Emotional Experiences at the Transition from Primary to Secondary Education

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**Abstract:** Based on the theoretical perspective of self-determination, this study examined the effects of basic need fulfillment (relatedness/competence/autonomy) on students’ school enjoyment before and after the transition from primary to secondary school. Furthermore, the academic and social impact of control beliefs on the emotions triggered by the upcoming transition was tested. The sample consisted of 63 students who filled out questionnaires at different time points before (grade 4; students between the ages of 9 and 10) and after (grade 5) the primary-secondary transition. The results highlight the importance of a positive teacher-student relationship as well as positive relationships amongst the students themselves for students’ school enjoyment before and after the transition. In terms of the emotions evoked by the upcoming transition, the results reveal that students with higher academic self-concept experienced more positive emotions than students with lower academic self-concept. From these findings, it can be concluded that positive relationships and the belief in one’s own academic capabilities can contribute to the likelihood of experiencing the transition to secondary school as an event accompanied by positive emotions such as joy and excitement rather than a stressful or threatening life-event.

**Keywords:** students’ emotions, primary-secondary transition, self-determination theory, appraisal theory

## 1 Introduction

Based on extensive empirical evidence, researchers have come to the consensus that not only is academic achievement influenced by the instructional practices of teachers and the cognitive-motivational factors of learners, but that emotions play a key role in successful student learning as well (Hascher, 2010; von Rhöneck & Melenk, 2003). Studies have shown that positive emotions in students (e.g. joy) are generally associated with positive characteristics in the learning process, such as deeper learning strategies, more effort invested, higher self-regulation and higher behavioural engagement during instruction; this, in turn, positively impacts student achievement (e.g. Hänze, 2003; Gendolla, 2003; Villavicencio & Bernardo, 2012). Thus, ground-

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24 ed in the perceived importance of student emotions for educational outcomes, the interest of educational researchers in studying the emotional processes of students has increased over the past 15 to 20 years (Efklides & Volet, 2005; Schutz & Pekrun, 2007), including not only investigations into the emotions of primary school students (e.g. Helmke, 1993; Wigfield & Eccles, 1989), secondary school students (e.g. Ahmed et al., 2010; Gläser-Zikuda et al., 2005; Hagenauer & Hascher, 2010) and students in further and higher education (e.g. Christie et al., 2008; Grieder, 2006), but also explorations of the emotions of teachers (e.g. Hargreaves, 2000; Sutton & Wheatley, 2003). In early studies of emotion research in education, the focus was placed primarily on test anxiety (e.g. Cassady & Johnson, 2002; Zeidner, 1998), however, current research examines the full variety of emotions experienced in educational settings, taking positive and negative emotions and their antecedents and effects into account (e.g. Astleitner, 2000; Gläser-Zikuda & Fuß, 2008; Pekrun et al., 2002a).

This article contributes to the growing number of empirical studies investigating student emotions in school. It focuses on a critical life-event for students (Sirsch, 2003), namely the transition from primary to secondary school which is of high relevance for students (e.g. Gillison, Standag, & Skevington, 2008; Zeedyk et al., 2003). According to appraisal theories of emotions (Lazarus, 2001), which highlight the importance of cognitions for the elicitation of emotions, emotions are triggered in situations that are *relevant* to the individual (primary appraisal). If situations are not significant and meaningful for a person, emotions are not likely to be evoked. Due to its obviously relevant character, it is expected that the transition from primary to secondary school will generally arouse a variety of emotions.

Pratt and George (2005, p. 16) define this transition as a “key rite of passage for boys and girls, as they move from the seemingly familiar safe environment of the primary school, to the unfamiliar and strange surrounding of the secondary school”. In 1985, Weißbach coined the term “secondary school shock” to describe the predominantly negative emotional experiences triggered by this transition. However, current research reflects a more heterogeneous picture in terms of the emotions experienced in the transition. The results of several studies suggest that the transition from primary to secondary school is not necessarily experienced negatively (e.g. by an increase in stress; Rudolph et al., 2001); it is equally likely to be accompanied by positive emotional experiences, such as hope, excitement and joy (Lucey & Reay, 2000). The differences in the positive or negative valence in emotions can be traced back to intra-individual differences among students, such as their academic or social self-concepts which can have an effect on the control cognitions, termed as “secondary appraisal” by Lazarus (2001) and thus on the emotional quality (e.g. Wargo Aikins, Bierman, & Parker, 2005; West, Sweeting, & Young, 2010). Apart from factors related to the individual learner, environmental conditions (e.g. the amount of teacher support, the quality of peer relationships; e.g. Demetriou, Goalen, & Rudduck, 2000; Martinez et al., 2011) are also assumed to influence the emotions evoked.

Based on the heterogeneous findings with respect to emotional experiences during the transition from primary to secondary education and due to the variability of

individual and contextual factors that can impact these experiences, the aim of the present research is to shed further light on student emotions in the primary-secondary transition. In the next chapter, we will introduce the Self-Determination Theory which (in addition to appraisal theories) will guide our approach to studying student emotions.

## 2 A self-determination perspective on emotions

Self-Determination Theory (SDT) is a theory of human motivation that was developed by Deci and Ryan in the 1980s (e.g. Deci & Ryan, 1985, 2002). Since then, it has been applied in a variety of research fields, including health care, counselling, organization and work and education (for an overview, see the self-determination theory homepage: <http://www.selfdeterminationtheory.org/>). SDT has proven to be a valuable framework in predicting motivation in individuals, including school students.

Self-determination theory posits that human motivation is driven by three basic psychological needs: the need for autonomy, the need for competence and the need for relatedness. It can be assumed that school learning environments that facilitate the fulfillment of these three basic needs will have a positive impact on students’ self-determined motivation as well as on positive emotions; this, in turn, is expected to foster engagement, effort, persistence and achievement/performance. The link between self-determined motivation and positive emotions has been empirically shown, for example by Ryan and Connell (1989) and Patrick et al. (1993) as well as by a prior study in our own research programme (Hagenauer & Hascher, 2011). Furthermore, in lower secondary education, one of our previous studies has demonstrated the association between students’ need fulfillment and their learning enjoyment (Hagenauer & Hascher, 2010). The results of this longitudinal study (grades 6 and 7) revealed that the fulfillment of the need for competence and the need for relatedness were the most important in predicting students’ learning enjoyment, while the fulfillment of the need for autonomy proved to be of less significance.

This study’s results also showed that students’ learning enjoyment decreased during the observed period due to an increase in dissatisfaction with school environmental conditions (e.g. students experienced their relationship with teachers as increasingly unsatisfactory; Hagenauer & Hascher, 2010). Stage-Environment Fit Theory (SEF), a theory that originated in the US but is currently being applied internationally across different educational systems (e.g. Eccles & Midgley, 1989; Eccles et al., 1993), explains the decrease in positive motivational and emotional student learning variables in secondary school by the mismatch between students’ needs and school environmental conditions. At this point, SDT comes into play again: We assume that the non-fulfillment of students’ need for autonomy, relatedness and competence is not only detrimental for students’ positive learning emotions in their current stage of schooling, but that it is also (at least partially) responsible for the pedagogically undesirable decline in student motivation and emotional state in secondary education.

In the present study, we will test a model of student emotions focusing on student school enjoyment from an SDT perspective. We will concentrate on school enjoyment because previous studies have shown the relevance of positive learning emotions in general (e.g. Pekrun et al., 2002b) and school enjoyment in particular for learning outcomes (Van Ophuysen, 2008) as well as for positive prospective emotions developed in the transition phase (e.g. high anticipatory joy; Van Ophuysen, 2009). In line with Van Ophuysen (2008), school enjoyment is defined as a positive affective attitude towards school in general (“liking school”). As predictors of school enjoyment, we will take into account school environmental conditions that are assumed to affect students’ need fulfillment. As Gillison et al. (2008, p. 151) have asserted, “the satisfaction of the three basic needs set out by SDT during the transition to secondary school has, to date, not received empirical research attention”.

### 3 Research questions and hypotheses

We are interested in students’ emotions and their predictors in grade 4 and 5, the period before and after the transition from primary to secondary education in Austria. Because the literature has shown that boys and girls frequently differ in terms of their emotional experiences (e.g. Frenzel, Pekrun, & Götz, 2007; Hascher & Hagenauer, 2011), student gender will be considered in the calculated models.

Firstly, in grade 4 and in grade 5, we test a model of student school enjoyment. We expect that a school environment that meets students’ basic needs would be likely to be positively associated with school enjoyment. In particular, we hypothesize that

- (1) an autonomy-supporting learning environment (need for autonomy),
- (2) a positive relationship with teachers (need for relatedness),
- (3) positive relationships with classmates (need for relatedness),
- (4) high competence beliefs (need for competence)

will be predictors of school enjoyment. Three predictor models will be described, one in grade 4 and two in grade 5, allowing a comparison of the levels of impact of different predictors in primary and secondary school.

Secondly, studies have shown that the abilities to make new friends and to adapt to new learning demands are crucial for a student’s successful transition. In accordance with Lazarus’ (2001) distinction between primary and secondary appraisal, we assume that secondary appraisals, namely the perceived controllability of the situation, become relevant in the phase of transition for the arousal of positive or negative emotions (see also the control-value theory of emotions for the importance of control cognitions for emotion elicitation; Pekrun, 2006). We hypothesize that students who believe they can master the social and academic challenges that accompany the transition will be more likely to experience positive emotions in comparison to students who have more doubts about the controllability of the situation (= low academic and/or social self-concept; Götz et al., 2010).

## 4 Method

### 4.1 Design and Participants

A longitudinal study was conducted with four measurement points – two in grade 4 (t1: 10 months before the transition to secondary school; t2: 5 months before transition) and two in grade 5 (t3: 3 months after transition; t4: 8 months after transition) – in two primary schools. Both schools were located in a rural area in Austria and the students transitioned into three different school forms after grade 4: a *Hauptschule/ Neue Mittelschule* (n = 60) or a *Gymnasium* (n = 3). Based on the second author’s consultations with head teachers, 119 students (6 classrooms, 2 schools) were asked to participate. After obtaining parental agreement, the final sample size was 63 students. These 63 students provided valid data at all four measurement points. After leaving their primary schools, the students moved to eight different secondary schools, but the majority (n = 57) opted to attend the two *Hauptschulen* closest to their homes.

In the Austrian school system, students are separated after grade 4 into two main tracks according to their achievement level: *Hauptschulen*, or low-track schools and high-track *Gymnasien*. A third school type, *Neue Mittelschule*, is currently being established as a substitute for the *Hauptschulen*. This school type is a kind of comprehensive school that applies many innovative forms of instructional practices (e.g. inner differentiation rather than ability grouping; team teaching). In rural areas, the majority of the students move to *Hauptschulen* or *Neue Mittelschulen* after primary school as the high-track schools (*Gymnasien*) are mainly located in cities.

52.4% (n = 33) of the participating students were female and the majority were born in Austria (95.2%; n = 60). Students were between 9 and 10 years old in grade 4.

### 4.2 Measures and Procedure

At all four measurement points, the students completed questionnaires during regular school hours. All of the students from a school, who were participating in the study, were gathered in a separate classroom and the data collection was conducted by the second author. Thus, the data collection setting featured a high degree of standardization and the students had the opportunity to directly and immediately ask any questions that occurred to them. Teachers were not present during data collection in order to enhance students’ trust in the confidentiality of the data and to minimize the potential risk of socially desirable response behaviour. Only the six students who did not move to the two nearby *Hauptschulen* after the transition filled in their questionnaires at home at t3 and t4 and returned them by mail.

As the context in secondary school differs to that in primary school, some of the scales had to be adapted after the transition; as a result, means and standard deviations are not directly comparable across the time points t1/t2 and t3/t4. The calculation of longitudinal analysis across school types was thus not possible. In our

28 analysis, we will only refer to t1, t3 and t4, as some of the variables used for the research question introduced in the present article were not integrated into the t2 questionnaire. Table 1 highlights the constructs that were measured at the different time points and consequently used for data analysis.

**Table 1** Scales used in the present study

| Scale   | t1 | t2 | t3 | t4 | Cronbach's Alpha                                       |
|---|----|----|----|----|--|
| School enjoyment                                  | x  |    | x  | x  | .90/.76/.75  |
| Autonomy support                                  | x  |    | x  | x  | .84/.80/.76  |
| Teacher-student relationship                      | x  |    |    |    | .86  |
| Satisfaction with teacher-student relationship    |    |    | x  | x  | (no alpha was calculated due to a single-item measure) |
| Social problems with classmates                   | x  |    | x  | x  | .67/.63/.63  |
| Academic self-concept                             | x  | x  | x  | x  | .71/.74/.64  |
| Social self-concept                               |    | x  |    |    | .63  |
| Positive emotions in connection to the transition |    | x  |    |    | .68  |

*Note.* t1 and t2 = primary school; t3 and t4 = secondary school

#### *School enjoyment* (adapted from Rauer & Schuck, 2003)

This measurement consisted of six items ranked by students in grade 4 (e.g. “Attending school is fun.”; “I am happy when I am at school.”) and four items ranked in grade 5 after the transition to secondary school (e.g. “I enjoy going to secondary school.”), on a scale ranging from 1 = *not true at all* to 4 = *very true*.

#### *Autonomy support* (self-developed scale, based on the results of Van Ophuysen, 2009)

Nine items were used to measure the support of autonomy in the classroom environment which would allow students to contribute to decision-making in the classroom (e.g. “How often are you and your classmates allowed to decide about the seating arrangement in the classroom?”).

#### *Teacher-student relationship and satisfaction with teachers* (adapted from Rauer & Schuck, 2003)

In primary school, students have one class teacher who teaches most of the subject areas. The students’ relationship with their teacher was assessed by six items (e.g. “My teacher listens to me if I want to tell him/her something.”) on a scale ranging from 1 = *not true at all* to 4 = *very true*. In secondary school, students are taught by many different teachers and the relationships they build with them are assumed to differ across teachers of different subjects. Thus, only overall satisfaction with

teachers as a general indicator of the relationship built with teachers was assessed. Students were asked to rank their relationship with their teachers using the Austrian grading system: 1 indicated the best mark (= very satisfied with the teachers) and 5 the worst mark (= not satisfied at all).

*Social problems with classmates* (Hascher, 2004)

The relationships that students form amongst themselves were assessed by the scale “social problems in the classroom”: The frequency of problems with classmates reported by students was taken as a measure of social integration (3 items, e.g. “How often have you experienced problems with your classmates during the last few weeks?” on a scale of 1 = *never* to 4 = *often*).

*Academic self-concept* (Hascher, 2004)

Three items were used to assess students’ academic self-concept (e.g. “I don’t have problems solving difficult learning tasks”; 1 = *not true at all*, 4 = *very true*).

*Social self-concept* (adapted from Kunter et al., 2002)

Social self-concept was measured at t2 by three items (e.g. “It is easy for me to make new friends”; 1 = *not true at all*; 4 = *very true*).

*Positive emotions evoked facing the transition* (a newly developed scale)

Before the transition took place (t2), students were asked to report on their emotional experiences triggered by the upcoming transition. Using six items, two of which addressed the students’ general mood (positive/negative) and four of which addressed particular emotions, these emotional experiences were operationalized (1 = *not true at all*; 4 = *very true*).

## 5 Results

In accordance with the research questions, the section on results is divided into two main sub-sections.

Firstly, after some descriptive information on the school enjoyment of students and the inter-correlation of the variables, a multiple regression analysis predicting students’ school enjoyment will be estimated at three time points (t1/t3/t4). Descriptive statistics illustrating the inter-correlations between the variables in the model will also be reported.

Secondly, we will focus on the emotions triggered by the upcoming transition (t2). A regression model of the emotions predicted by students’ social and academic self-concepts is tested.

## 5.1 Predictors of students' school enjoyment

Inter-correlations (see Table 2) show that all independent variables correlate on a significant level with students' school enjoyment in grade 4 but that the impact of these variables decreases in grade 5. At all measurement points, the relationship built with teachers is the variable that correlates most with school enjoyment. Furthermore, the means reveal that school enjoyment is rather high when students first enter secondary school (t3) but decreases after a few months in the new schools (t4). In addition, student satisfaction with teachers decreases during this time period, as does the autonomy experienced in the classroom. Academic self-concept and relationships among students remain relatively stable in grade 5 although some higher frequencies of social problems are revealed at t3 in comparison to t4.

**Table 2** Means, standard deviations and inter-correlations of school enjoyment and its predictor variables

|                                     | t                          | M    | SD   | Inter-correlations |        |        |         |         |
|-------------------------------------|----------------------------|------|------|--------------------|--------|--------|---------|---------|
|                                     |                            |      |      | (1)                | (2)    | (3)    | (4)     | (5)     |
| (1) School enjoyment                | t1                         | 3.06 | 0.85 | -                  | .41*** | .62*** | -.36**  | .29**   |
|                                     | t3                         | 3.34 | 0.55 |                    | .10    | -.35** | -.33**  | .17     |
|                                     | t4                         | 3.14 | 0.78 |                    | .15    | -.29** | -.27*   | .14     |
| (2) Autonomy support                | t1                         | 2.17 | 0.67 |                    | -      | .27*   | -.22*   | .12     |
|                                     | t3                         | 2.31 | 0.61 |                    |        | -.28*  | -.20+   | .40**   |
|                                     | t4                         | 2.13 | 0.60 |                    |        | .03    | -.13    | .22*    |
| (3) Teacher-student relationship    | t1                         | 3.53 | 0.59 |                    |        | -      | -.51*** | .45***  |
|                                     | t3                         | 1.41 | 0.59 |                    |        |        | .48***  | -.37**  |
|                                     | Satisfaction with teachers | t4   | 2.03 | 0.95               |        |        |         | .18+    |
| (4) Social problems with classmates | t1                         | 1.83 | 0.73 |                    |        |        | -       | -.35**  |
|                                     | t3                         | 1.77 | 0.71 |                    |        |        |         | -.42*** |
|                                     | t4                         | 1.51 | 0.58 |                    |        |        |         | -.39*** |
| (5) Academic self-concept           | t1                         | 3.44 | 0.60 |                    |        |        |         | -       |
|                                     | t3                         | 3.36 | 0.64 |                    |        |        |         |         |
|                                     | t4                         | 3.45 | 0.35 |                    |        |        |         |         |

*Note.* All constructs were measured with several indicators using 4-point scales, except the variable "satisfaction with teachers", which was measured with a single item using a scale based on the Austrian school grading system (1 = *very satisfied*, 5 = *not satisfied at all*). \*\*\* < .001; \*\* < .01; \* < 0.5; + < .10

Multiple regression analyses at t1 (grade 4), t3 and t4 (grade 5), taking into account indicators of basic need fulfillment, show that the relationship with teachers was the strongest predictor of students' school enjoyment at all three measurement points with the highest impact in primary school. In general, when students experienced a good relationship with their classroom teacher in primary school and when they were satisfied with their teachers in secondary school, they reported higher



school enjoyment. Additionally, support of autonomy proved to be an additional significant predictor in grade 4 but not after the transition to secondary education. In secondary school, students also reported higher school enjoyment when their relationship with classmates was good (= fewer social problems). The relationship with classmates did not explain significant additional variance in primary school as a predictor of school enjoyment although it correlated at a moderate to high level with the relationship with teachers, thus indicating joint variance. Students' competence beliefs or gender did not function as significant predictors (see Table 3).

**Table 3** Multiple regression analysis predicting students' school enjoyment in grades 4 and 5

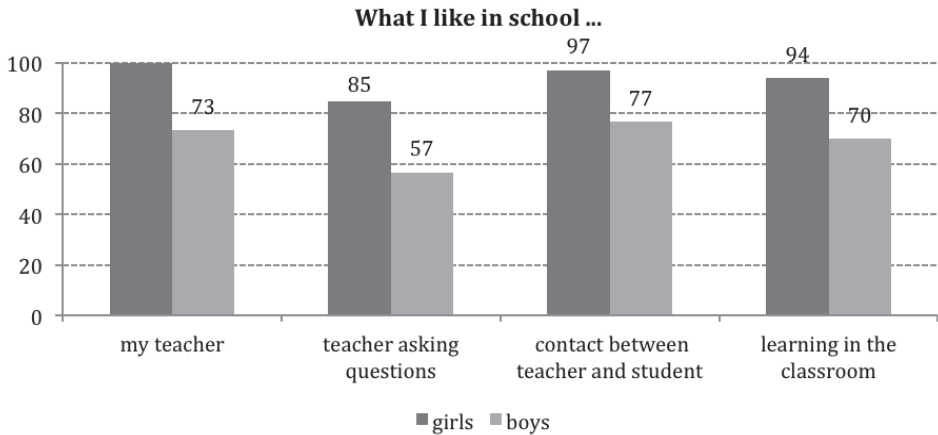
| School enjoyment  | Primary school | Secondary school |              |
|---|----------------|------------------|--------------|
|   | Grade 4 (t1)   | Grade 5 (t3)     | Grade 5 (t4) |
| Autonomy support<br>( <i>need for autonomy</i> )  | .23*           | -.02             | .12          |
| Teacher-student relationship (gr. 4)<br>Satisfaction with teachers (gr. 5)<br>( <i>need for relatedness</i> ) | .51***         | -.24+            | -.25+        |
| Social problems with classmates<br>( <i>need for relatedness</i> )  | -.05           | -.24+            | -.22+        |
| Academic self-concept<br>( <i>need for competence</i> )   | .00            | -.02             | -.04         |
| Gender  | -.12           | -.19             | -.05         |
| R2  | .46***         | .19*             | .15+         |

Note. Standardized beta coefficients are displayed; \*\*\* < .001; \*\* < .01; \* < 0.5; + < .10; gender: 0 = girl; 1 = boy

For grade 4, single independent t-tests testing for gender differences showed that boys experienced lower school enjoyment. However, when we controlled for the other variables in the model, this difference disappeared due to the impact of the relationship with the classroom teacher. Boys reported a less positive relationship with their classroom teacher in primary school which was associated with their school enjoyment. The higher negative attitude towards the teacher and towards scholastic learning among boys was also reflected in the question concerning feelings about interactions with teachers (see Figure 1). In secondary school, no further gender differences could be found in school enjoyment or in the predictor variables.

### 5.2 Transition emotions and their associations with academic and social self-concepts

Students were asked about distinct emotions evoked by the upcoming transition including emotions such as anticipatory joy, excitement, worry or sadness. In general, an examination of the frequency of the distinct experienced emotions on a descriptive level reveals that the majority of students seem to look forward to the transition to



**Figure 1** What boys and girls like in school in grade 4, indicating gender differences in the relationship with teachers and the enjoyment of learning (% of agreement)

secondary school, as indicated by the reported experience of emotions being more positive than negative. For example, 41% of the students completely agreed with the statement that they were looking forward to the transition (= anticipatory joy) and another 35% of students partially agreed. In comparison, 9.5% of students completely agreed and another 20.6% agreed in part that they felt concern with regard to the transition.

With regard to the second hypothesis, we tested the proposed predictive function of social and academic self-concepts on the emotions evoked by the upcoming transition. Inter-correlations reveal that positive emotions are positively associated with social and academic self-concepts at a moderate level (see Table 4).

**Table 4** Means, standard deviations and inter-correlations of positive emotions and students' social and academic self-concepts

|                        | M    | SD   | Positive emotions | Social self-concept | Scholastic self-concept |
|------------------------|------|------|-------------------|---------------------|-------------------------|
| Positive emotions (t2) | 2.97 | 0.69 | -                 | .26*                | .40***                  |
| Social self-concept    | 3.17 | 0.64 |                   | -                   | .50***                  |
| Academic self-concept  | 3.42 | 0.49 |                   |                     | -                       |

Note. \*\*\* < .001; \*\* < .01; \* < 0.5; + < .10

Consecutive multiple regression analyses taking possible gender differences into account show that positive emotional experiences during transitions can be predicted by students' academic self-concept: students with higher academic self-concept experienced more positive emotions. The social self-concept explains no further significant variance in the model but exhibits joint variance with the academic self-concept, as the correlations have already shown. Gender does not contribute to a significant increase in the explanation of variance (see Table 5).

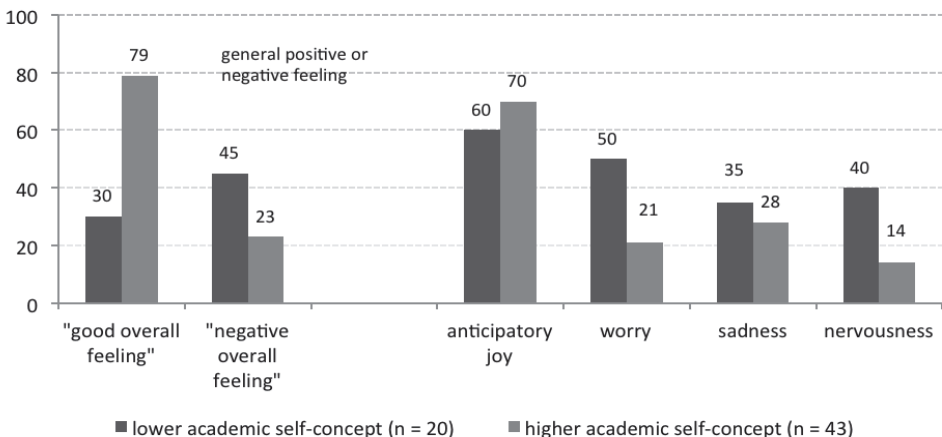
**Table 5** Multiple regression analysis predicting the student emotions evoked by the upcoming transition

| Positive emotional experiences | Predictors |
|--------------------------------|------------|
| Social self-concept            | .07        |
| Academic self-concept          | .36**      |
| Gender                         | .01        |
| R2                             | .16**      |

Note. Standardized beta coefficients are displayed; \*\* < .01; gender: 0 = girl; 1 = boy

As academic self-concept proved to be the strongest predictor of the emotions experienced, the scale "academic self-concept" was split by median bisection into two groups, resulting in 20 students with lower academic self-concept (*mean* 1.00–3.00) and 43 students with higher academic self-concept (*mean* 3.33–4.00). The difference in the number of students in the two groups can be traced back to the high proportion of students exhibiting a mean of 3.33 in academic self-concept. These students were allocated to the high academic self-concept group, as this mean was near the maximum that could be achieved by the scale used.

The picture of positive and negative emotional experiences notably changed with the division of the students into the following two groups: students with lower academic self-concept reported worry, anxiety and nervousness in connection with the transition to secondary school more frequently than students with higher academic self-concept. Furthermore, while 70% of the students with higher academic self-concept had an overall "good feeling" about the transition, only 30% of the students with lower academic self-concept experienced these positive anticipatory feelings (see Figure 2).



**Figure 2** Emotions experienced by students with lower and higher academic self-concept with regard to the upcoming transition (combining answers of "completely agree" and "somewhat agree")

## 6 Discussion

In this paper, we sought to investigate student emotions at the transition from primary to secondary education, exploring whether basic need fulfillment impacted students' school enjoyment, and whether academic and social self-concepts influenced the emotions triggered by the upcoming transition.

### 6.1 Students' school enjoyment before and after the transition

In terms of predicting school enjoyment, the results highlight the relevance of the fulfillment of the need for relatedness (as represented by satisfactory relationships with teacher(s) and classmates) for students' school enjoyment before and after the transition. An autonomy-supporting classroom environment proved to be of lesser significance, only affecting students in grade 4. Students' academic self-concept (as an indicator of need fulfillment in terms of competence) did not contribute to the prediction of students' school enjoyment. Thus, our hypothesis could only be partly confirmed, as not all three basic needs contributed equally to predicting students' school enjoyment. Although this finding somewhat contradicts SDT assumptions, it is in line with the results of Gillison et al. (2008) which also indicate that the change in "quality of life" during the primary-secondary transition can only be predicted by the fulfillment of the needs for relatedness and autonomy but not by the fulfillment of the need for competence.

However, on a correlational basis, disregarding other predictors, academic self-concept was only weakly correlated with students' school enjoyment but it proved to be a significant predictor of positive emotions in students (as calculated by an additional regression model). These contradictory results concerning the relevance of academic self-concept for school enjoyment might be explained methodologically, at least partly: It is likely that the lack of any additional and independent significant impact of academic self-concept in the calculated regression models on school enjoyment could be traced back to the limited variance in students' academic self-concept (i.e. there was very high self-concept across all students), accompanied by the strong inter-correlation with the main predictor variable "teacher-student relationship". Students who reported better relationships with their teachers also exhibited higher academic self-concepts. Thus, it would be inadvisable to draw any hasty conclusions that competence beliefs or the fulfillment of the need for competence are not generally relevant for students' school enjoyment because this would contradict prior empirical findings entirely (e.g. Hagenauer & Hascher, 2010) as well as the basic theoretical assumptions of SDT and appraisal approaches to emotions (Lazarus, 2001) including the control-value theory of achievement emotions (Pekrun, 2006). Instead, in future studies it seems to be wiser to use more sensitive and elaborate scales to assess students' academic self-concept in primary education.

This high level of student self-concept at the end of primary school is in accordance with the previous results of Van Ophuysen (2009). Van Ophuysen found very

high levels of academic self-concept among German primary students which she explains from a developmental psychological perspective. Students in some parts of Germany (and in Austria) move to secondary school very early (after grade 4); internationally, this transition normally occurs one or two years later. This early transition corresponds to a less elaborate and less differentiated identity including aspects of self-concept. Another explanation based on achievement level is suggested by our data. In this study, about 85% of students received grades of 1 (*Very Good*) or 2 (*Good*) in the main school subjects of German (reading and writing) and Mathematics in grade 4 (The Austrian grading system ranges from 1 *Very Good* to 5 *Insufficient*). In primary school, grades are typically very high in Austria which may contribute to the high levels of ability self-concept in most students. Moreover, methodological aspects must be taken into account. Young children are more prone to give socially desirable answers, as has been empirically assessed by means of "Lie scores" (Dadds et al., 1998). Consequently, strong agreement with items addressing academic self-concept might be partly due to the social desirability response bias, as high academic self-concept represents a desirable trait and is therefore likely to be overestimated. Similar effects might have occurred with other positive scales such as positive relationships with friends and teachers, however, this bias cannot be controlled for, as "Lie scales" detecting social desirability were not used in the present study.

As far as the need for relatedness is concerned, prior studies have highlighted the importance of positive relationships with teachers and classmates for positive educational outcomes in general (e.g. Roorda et al., 2011), and socio-emotional adjustment during transition periods in particular (e.g. Tobbell & Donnell, 2013; Demetriou et al., 2000). Several studies (e.g. Bru, Munthe, & Thuen, 2010; Martinez et al., 2011) have also indicated that the relationship with teachers – in our study, the most crucial influencing factor for students' school enjoyment – declines over the years of schooling, as comprehensively discussed in stage-environment fit theoretical approaches (Eccles et al., 1993). Bru et al. (2010) suggest that this decline can be considered as merely a time effect rather than an effect triggered by the transition; this partially contradicts Stage-Environment Fit Theory which explains the decline by the change in school context. Bru et al. (2010) argue that the older the students are, the worse they rate their relationship with teachers, beginning in primary school and steadily continuing throughout secondary education. As our data do not allow a comparison between primary and secondary school ratings of the teacher-student relationship, we cannot contribute to the clarification of this issue, however, in line with Bru et al. (2010) and Martinez et al. (2011), we also found a decrease in teacher-student relationship ratings in the first year of secondary education.

Furthermore, a few studies have addressed the importance of peer acceptance and friendship for positive emotional experience and adjustment during the primary-secondary transition (e.g. Demetriou et al., 2000; Pratt & George, 2005). At the time of transition, the desire to belong to a peer group can be assumed for all students, especially as they experience a shift in peer group exposure. The typical

36 secondary school peer group is larger than the elementary school peer group, it is also more autonomous and less supervised by adults (Wargo Aikins et al., 2005), and research has shown that supportive friends are advantageous during the transition. It can be assumed that friendship quality and social integration serve as important buffers against adjustment problems and – as our data indicate – also as important preconditions of school enjoyment.

The data in the present study identify a relatively high level of school enjoyment directly after the transition to secondary school. This positive perception declines after a few months in the new school, which is in line with previous findings on primary-secondary school transition. Lohaus et al. (2004) attribute the positive changes after transition to the preceding summer holidays, referring to this as the “recovery effect”. The authors found a decrease in stress levels among German students as they entered secondary school, while Gillison et al. (2008) detected an increase in “quality of life” and need-satisfaction during the first 10 weeks of secondary school among British pupils. A different explanation for the positive rating of school enjoyment after the transition is provided by Reitbauer and Hascher (2008) who coin the term *transition positivism* (p. 824). Transition positivism describes the positive expectations and feelings triggered by the upcoming transition that are likely to be maintained through the first weeks in the new school setting. After a few weeks, it is expected that more realistic (and probably less positive) judgments of the new school environment will develop which may impact the decline in school enjoyment.

## 6.2 The emotional valence of the upcoming transition

This transition positivism is reflected by the chiefly positive emotions evoked by the upcoming transition in the students in our study. Although majority of the students reported joy in connection with the upcoming transition, some of them (in particular students with lower academic self-concept) also mentioned worry and concern. Similar results were obtained by a study conducted by Leffelsend and Harazd (2004): German primary students reported a high amount of anticipatory joy in connection with the transition to secondary school and less worry/concern. However, the authors argue (in accordance with the present findings) that the academic ability self-concept plays a relevant moderating role, insofar as critical life-events are more likely to be experienced positively when individual resources are high. If students do not believe in their academic ability, the likelihood of experiencing the transition as a threat is enhanced and thus the likelihood of positive emotions is reduced (see also West, Sweeting, & Young, 2010).

Not only the belief in one’s academic ability, but also the belief in one’s social ability was expected to influence student emotions. However, although Wargo Aikins, Bierman and Parker (2005) stress that children’s social competence and their belief that they possess the ability to make new friends are relevant preconditions for successful school adjustment and avoidance of emotional distress, our data could not support the additional influence of social self-concept on the positive emotional

experiences evoked by the transition. Again, this might be due to the joint variance exhibited by academic and social self-concepts: The more students believed in their academic capabilities, the more they also believed in their ability to make new friends.

In general, the emotions evoked by the transition must be regarded as independent dimensions, as students frequently reported “mixed emotions” (see also Leffelsend & Hazard, 2004). For example, the upcoming transition may trigger joy *and* concern in the same student, however, these emotional experiences are likely to vary in terms of intensity and frequency (Hascher, 2004). Consequently, in future studies it might be useful not only to investigate the variety of emotions, but also to explore their intensity and frequency in order to be able to make inferences about the overall predominantly positive or negative emotional valence experienced during the transition.

### 6.3 Limitations

Certain limitations in this study must be addressed.

Firstly, although the design was longitudinal in nature, not all measured constructs could be compared across time points due to the different operationalizations used in the primary and secondary school measurements. As a result, longitudinal analyses were impossible to conduct, which limited the potential of the data.

Secondly, the sample in this study was relatively small ( $N = 63$ ) and thus not highly representative which limits the generalization of the findings. Furthermore, the sample only included students from a rural area who are expected to have somewhat different transition experiences than students from cities. For example, the majority of the students in the present study moved to a local *Neue Mittelschule*, and thus most of them would have some friends transiting with them to the new school. Empirical evidence shows that moving to a new school together with friends reduces the stressful character of the transition (e.g. Green, 1997). In contrast to the rural experience, students in (larger) cities often have a broader choice in selection of schools near their home (different school types, different academic emphases, etc.), which can mean fewer opportunities to transit with close friends as the students spread out across various schools. In addition, the students in the sample were nested within classrooms. Due to the small sample size, the hierarchical nature of the data could not be controlled for; this might have led to an underestimation of the standard error.

Thirdly, the reliability of some of the constructs was rather low (between .60 and .70). This could be partly due to the small sample size and the limited amount of items on the scales, a factor that contributes to the overall Cronbach’s alpha. The items themselves showed satisfactory item inter-correlations and discriminatory power. Thus, more elaborate scales (for example to measure the social self-concept of students) should be developed, keeping in mind that the validity of primary students’ answers could be jeopardized by extensive assessment instruments.

The fourth limitation pertains to the measurement of two predictor variables. Autonomy support was measured by the indicator “providing opportunities to take part in decision-making”, which is an important aspect of “autonomy support” but does not completely cover the construct. As Lewalter (2005) argues, autonomy support consists of not only the opportunity to contribute to decision-making, but also the student’s experience of the learning environment as meaningful and relevant. This aspect of relevancy of the learning environment was not covered by the construct used in this study which might have contributed to the limited impact (grade 4) or lack of impact (grade 5) of the support of autonomy on students’ enjoyment (for a similar result addressing students’ learning enjoyment in grades 6 and 7, see Hagenauer & Hascher, 2010). In addition, “satisfaction with teachers” in secondary education was assessed by one item only and might not have completely captured the relationships that students have built with their teachers. Because students are taught by many teachers in secondary school, it is unclear which teacher they referred to when they rated their overall satisfaction. Recency effects might have occurred, e.g. in their judgments, students might have predominantly drawn on the relationship quality of the last teacher they were taught by in the previous school day. In evaluating the teacher-student relationship in secondary education, future studies could attempt to focus on the homeroom teacher (who has the primary responsibility for the students) and a more elaborate measure of this relationship should be implemented (e.g. Ang, 2005).

#### 6.4 Pedagogical implications and future perspectives

Despite these limitations, the present research contributes to clarifying school enjoyment and the positive emotions students experience during primary-secondary education based on a self-determination perspective. In conclusion, the results suggest that in order to facilitate students’ school enjoyment and promote positive emotions it may be advisable to place greater emphasis on the establishment of positive relationships among students and between teachers and students in all years of schooling (e.g. Bernstein-Yamashiro & Noam, 2013), especially during the phase of transition between primary and secondary education as it is strongly inter-correlated with school enjoyment. Even though the present study cannot explain the causality between the constructs, positive social relationships at school seem to be of crucial relevance for students’ school enjoyment. Thus, competence in supporting positive relationships in the classroom can be regarded as a crucial element of teacher professionalism and should be explicitly addressed in teacher education.

Furthermore, another implication emerges from the need for competence. School environments are challenged by the need to provide learning settings that will foster the development of students’ positive control beliefs. These pedagogical implications are equally valid for boys and girls as – in contradiction to our initial expectations – boys and girls did not differ in terms of the emotions induced by the transition. Finally, with regard to the relevance of the need for autonomy the results



remain unclear for grade 5, although an impact could be detected in grade 4. Further studies focusing on students' need for autonomy are required, preferably relying on a more elaborate measurement of autonomy support. Overall, future studies accounting for the direct, indirect and reciprocal effects of basic need fulfillment as well as student cognitions and emotions are needed in order to obtain more profound insight into the complex interplay of these inextricably linked factors.

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