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## The transition to post-secondary vocational education: students' entrance, experiences, and attainment

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# Chapter 3

## Making the Connection: the Role of Social and Academic School Experiences in Students' Emotional Engagement in Post-Secondary Vocational Education[*]

**ABSTRACT**

This study examines the emotional engagement with school of a diverse sample of 909 students in post-secondary vocational education in the Netherlands. Using multilevel regression analysis, we assess the role of students' background characteristics and school experiences, and their interaction, in students' emotional engagement with school. At-risk students do not report lower levels of emotional engagement, except for students using (soft)drugs. While Dutch dropout prevention focuses on fostering a sense of belonging through enhancing teacher-student relationships, we do not find a significant role of perceived support from school staff in students' sense of belonging. A good relationship with classmates is more important to engage students in post-secondary vocational education. Perceiving an academic fit is most prominently related to the emotional engagement of vocational students, indicating that a sense of belonging should not only be defined in social, but also in academic terms.

**INTRODUCTION**

Emotional engagement with school is an essential prerequisite for student effort, achievement and persistence in school (Anderman & Freeman, 2004; Audas & Willms, 2001; Finn, 1993; Fredricks, Blumenfeld, & Paris, 2004; Janosz, Le Blanc, Boulerice, & Tremblay, 2000; Libbey, 2004; Willms, 2003). Feeling part of the school community and perceiving school as a vital and valuable constituent of their lives enhances students' participation and achievement in school, and can protect students from dropout (Finn, 1993; Finn & Voelkl, 1993). Therefore, educational researchers and practitioners seek ways to enhance students' positive emotions towards school, especially among students who are at risk for dropout. In this study, we examine the emotional engagement with school among a diverse sample of students in Dutch senior vocational education, a sector confronted with high dropout rates. We assess the role of students' background characteristics and school experiences, and the interaction between these, in their emotional connection to school.

**THEORETICAL BACKGROUND**

**The role of emotional engagement in school success**

Students' emotions and attitudes towards school have been found to affect educational attainment in various educational settings (Alexander, Entwisle, & Kabbani, 2001; Downey, Ainsworth, & Qian, 2009; Ekstrom, Goertz, Pollack, & Rock, 1986; Fuligni, 1997; Libbey, 2004). The significant role of school emotions in educational attainment is generally explained by their impact on achievement-related behaviors and performance (Eccles, 1983; Finn, 1989, 1993; Wigfield, Tonks, & Lutz Klauda, 2009). In the school motivation literature, the interplay between students' emotions, behavior and performance has been studied mainly from a micro-level perspective, focusing on the domain-specific beliefs, goals, and values that students attach to specific tasks or classroom contexts (Ahmed, Minnaert, van der Werf, & Kuyper, 2010; Eccles, 1983; Robbins, Lauver, Le, Davis, & Langley, 2004; Wigfield et al., 2009). The school persistence literature tends to take a more general perspective by focusing on students' emotions towards their school as a whole (Janosz et al., 2000; Tinto, 1993). The interplay between those more general school emotions and students' behavior and performance in school is a central notion in school engagement theory as well (Audas & Willms, 2001; Finn, 1993; Fredricks et al., 2004; Willms, 2003). School engagement is usually conceptualized by two dimensions: *emotional engagement*, reflecting students' identification with school, and *behavioral engagement*, pertaining to students' participation in school (Finn, 1989, 1993). Finn's renowned participation-identification model (Finn, 1989) emphasizes the importance of emotional

engagement with school for positive school behavior and performance. If students identify with their school, they participate more actively in school activities. This participation reinforces academic achievement, which in turn stimulates identification. If students do not identify with school, they are more likely to engage in problem behavior or to physically withdraw from school, leading to negative achievement outcomes, and to further emotional and physical withdrawal. Thus, students can be involved in a self-reinforcing cycle of positive engagement and achievement in school. Likewise, they can be captured in a negative process of declining engagement and performance in school, which eventually culminates in dropout (Finn, 1989; Fredricks et al., 2004).

**Defining emotional engagement**
In this study, we focus on the emotional dimension of school engagement, which can be defined in more and less contextualized ways. The less context-specific type of emotional engagement relates to students' *general attitudes towards education* and their overall identification with their role as a student (Anderman & Freeman, 2004). The more context-specific type of emotional engagement relates to students' identification with a particular school context (Anderman & Freeman, 2004; Anderman & Kaplan, 2008; Fredricks et al., 2004). This identification can refer to the school as a social context, comprising all social actors that constitute the school community, which is defined as a *sense of belonging* in school (Finn, 1989; Fredricks et al., 2004). It can also refer to the school as an academic context, reflecting students' perceptions of the usefulness of their education for their career goals and potential. This is defined as students' *valuing* of their particular education (Finn, 1989; Fredricks et al., 2004). In our study, we take into account all three dimensions of emotional engagement with school: students' *sense of belonging*, *valuing* and *general educational attitudes*.

**School experiences affecting students' emotional engagement**
As emotional engagement with school is a prerequisite for school success, it is important to know which aspects of the school context promote or undermine engagement (Fredricks et al., 2004; Freeman, Anderman, & Jensen, 2007). We need to identify the "black box" processes through which bonding occurs (Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989). Engagement results from the interaction of individual students with the school context (Fredricks et al., 2004). Students' differ in their perceptions of the institutional environment, and it is their perceived fit or mismatch with various aspects of that environment which most directly determines whether they identify with school or not (Eccles, 1983; Jang, Reeve, & Deci, 2010; Roeser, Urdan, & Stephens, 2009; Tinto, 1993). Therefore, we need to find out to what extent students' emotions towards school are affected by their perceived fit with various aspects of the school context: with the academic

program, the teachers, the classmates, and the school climate (Fredricks et al., 2004; Tinto, 1993; Wehlage et al., 1989). Both social and academic interactions with the various actors in the educational environment can play a role in students' emotional engagement (Anderman, 2003; Tinto, 1993), and social and academic interactions are often intertwined in educational contexts (Karp, Hughes, & O'Gara, 2010). Some studies emphasize the importance of the academic dimension for students' emotional engagement, for instance the perceived quality or relevance of the curriculum (Hausmann, Schofield, & Woods, 2007; Newmann, 1992; Pascarella & Chapman, 1983; Pascarella, Duby, & Iverson, 1983). Others stress the role of social interactions with classmates and school staff (e.g. Wentzel, 1998). In particular, supportive teacher-student relationships are a prominent factor in the student engagement literature (Anderman, 2003; Klem & Connell, 2007; Nichols, 2008; Tinto, 1993). Supportive teacher-student relationships may be especially important for the engagement of at-risk students who lack supportive ties outside school (Scientific Council for Government Policy, 2008; Wehlage et al., 1989). However, it is not always clear whether the caring relationship with teachers as experienced by students should be attributed to teachers' pedagogical caring about students' learning processes, or to the interpersonal or social-emotional aspects of caring (Freeman et al., 2007; Pascarella & Chapman, 1983). While the cited studies differ in the relative emphasis placed on the social or academic sources of engagement, most studies stress that both positive social and academic school experiences are needed to promote school engagement (Freeman et al., 2007; Tinto, 1993).

**Individual differences in emotional engagement**
Educational outcomes are often socially and ethnically patterned (Alexander et al., 2001; Dutch Ministry of Education Culture and Science, 2009). As school emotions affect educational attainment, it is relevant to examine to what extent differences in students' emotional engagement with school mirror differences in the educational outcomes across various sociodemographic groups. A number of studies identified differentiating effects of individual characteristics that are associated with an increased risk for dropout on student engagement. Some studies report that students from lower socioeconomic or ethnic minority backgrounds, or students with lower educated parents, experience a weaker sense of belonging in school (Alexander et al., 2001; Marks, 2000; OECD, 2006; Voelkl, 1995). Other studies indicate that girls tend to be more emotionally engaged in school than boys, who drop out more often (Anderman & Freeman, 2004; Marks, 2000). While the support for school that students encounter in their communities from significant others, such as parents and peers, promote school engagement (Finn, 1993; Marks, 2000; Ryan, 2000), students from disadvantaged socioeconomic backgrounds often lack access to sufficient supportive resources in

their home environment (Roderick, 1993). In contrast, a relative absence of personal background effects on students' emotional engagement has been noticed as well (Hausmann et al., 2007; Marks, 2000).

**Emotional engagement in Dutch senior vocational education**

Most research on student engagement is based on data from predominantly White middle-class samples from middle and (junior) high schools (Fredricks et al., 2004; Furrer & Skinner, 2003; Zimmer-Gembeck, Chipuer, Hanisch, Creed, & McGregor, 2006). By examining the emotional engagement of a diverse group of first year students in Dutch senior vocational education (SVE), this study expands the focus to a more diverse population, and to a relevant but thus far understudied educational setting. As the senior continuation of the vocational track in Dutch secondary education, SVE provides one to four year specialized, job-oriented vocational programs to students aged 16+. Dropout rates peak in the first year of SVE, accounting for 75% of school dropout in the Netherlands (CBS Statistics Netherlands, 2010; Dutch Ministry of Education Culture and Science, 2011; The Netherlands Institute for Social Research, 2008). The transition from a smaller, familiar school environment in pre-vocational secondary education to the larger SVE institutions appears difficult for many students. New classmates, more social and academic autonomy and responsibility, and less personal contact are often mentioned as potential hurdles for SVE freshmen. SVE schools serve a substantial proportion of students who can be labelled 'at-risk' based on personal background characteristics such as a low socioeconomic status, an ethnic minority background, having lower educated or unemployed parents, or coming from a poor or broken family (Dutch Ministry of Education Culture and Science, 2009; Kuhry, 1998; Scientific Council for Government Policy, 2008). Also, many students in SVE are confronted with an accumulation of difficult circumstances in their lives that may impede their school careers, for instance debts, intensive jobs, drug abuse, financial problems, delinquency, or pregnancy (Scientific Council for Government Policy, 2008). A recent national policy report on dropout prevention (Scientific Council for Government Policy, 2008) highlights the importance of an emotional connection to school for the school success of at-risk students in vocational education. It is argued that this emotional connection could be enhanced by creating practice-based learning environments, by reinforcing a school structure with clear rules and regulations, and, most importantly, by establishing supportive teacher-student relationships. With the current dataset, we are able to test the relationship of individual and institutional characteristics to students' emotional engagement with school in SVE. First, we examine whether at-risk and non-at-risk students in SVE differ in their emotional engagement with school. Next, we explore the role of students' school experiences in their emotional engagement in SVE. Last,

we assess interaction effects of individual background characteristics and school experiences on SVE students' emotional engagement.

## METHODS

### Sample

From a longitudinal study on student persistence in the first year in SVE, we selected all 909 students of whom we had information available on their emotional engagement, social and academic experiences in school, and individual background characteristics. From the total group of 40 SVE school boards in the Netherlands, 10 boards were invited for participation in the study, based on (1) their urban setting, to assure social and ethnic diversity of the sample, and (2) the range of degree programs offered, to enable data collection in various degree programs and levels within one school board. The five school boards that agreed to participate represent this selection well. Within each school board, first year groups were selected for participation from three vocational sectors (engineering, economics, and health and social care) at all four SVE degree levels (1: assistant level, 2: basic vocational level, 3: full professional level, 4: specialist level). Selection took place before the academic year started and before individual students were assigned to individual groups. At the second measurement occasion of the study, from which we present data here, 60 groups participated, with an average group size of 15 students. Table 1 provides the basic descriptives of our sample. Participation in the study was voluntary for all students. As questionnaires were completed in a classroom setting under supervision of a teacher, in practice all students in a class completed a questionnaire, and we received no reports of students not willing to participate. Hence, we have no reason to believe that specific groups of students are over- or underrepresented in our study. This is confirmed by the descriptive statistics in table 1, which correspond to available statistics of vocational education in urban areas (Dutch Ministry of Education Culture and Science, 2010; Dutch Ministry of Health Welfare and Sport, 2010; Knowledge Centre for Vocational Training and Labour Market, 2010; Kuhry, 1998; Scientific Council for Government Policy, 2008).

**Table 1: descriptives of sample of 909 students in senior vocational education**

| Characteristics | % |
|---|---|
| **SVE sector** | |
| Economics | 30 |
| Engineering | 33 |
| Health & social care | 37 |
| **SVE degree program level** | |
| Level 1 | 13 |
| Level 2 | 22 |
| Level 3 | 33 |
| Level 4 | 32 |
| **Prior education** | |
| PVE with diploma | 66 |
| PVE without diploma | 4 |
| SVE with diploma | 8 |
| SVE without diploma | 9 |
| Other | 13 |
| **Gender** | |
| Female | 54 |
| Male | 46 |
| **Ethnic identity** | |
| Native Dutch background | 53 |
| Moroccan background | 15 |
| Turkish background | 12 |
| Surinamese background | 9 |
| Antillean background | 2 |
| Other ethnic background | 9 |
| **Age** | |
| 16-17 years | 62 |
| 18-19 years | 30 |
| Older than 19 years | 8 |
| **Household** | |
| Living with both parents | 65 |
| Living with one parent | 24 |
| Living alone | 3 |
| Living with other relatives / friends | 8 |
| **Job status parents** | |
| Both parents have a job | 49 |
| One parent has a job | 23 |
| Both parents are unemployed | 14 |
| Student doesn't know | 14 |
| **Highest education parents** | |
| Primary education or similar | 9 |
| Secondary education or similar | 12 |
| SVE or similar | 20 |
| Higher education or similar | 18 |
| Student doesn't know | 41 |
| **Financial problems in family** | 20 |
| **Personal debts student** | 10 |
| **Student (or partner) is pregnant / has child(ren)** | 4 |
| **Student has been arrested by the police** | 17 |
| **Student uses (soft-)drugs** | 11 |
| **Extra job student** | |
| no extra job | 39 |
| < 8 hours a week | 19 |
| 8 – 15 hours a week | 34 |
| > 15 hours a week | 8 |

**Variables and measures**

As outcome variables, we distinguished three types of emotional engagement with school: students' attitudes towards education in general (*general educational attitudes*: 7 items, α=.85, e.g. *I think it is important to go to school*), students' sense of belonging in their particular school (*sense of belonging*: 4 items, α=.90, e.g. *I feel at home at this school*), and students' valuing of their degree program (*valuing*: 6 items, α=.87, e.g. *What I learn in this degree program is useful for my future career*).

As explanatory variables, we distinguished social and academic aspects of students' school experiences, and of their personal background. The academic school experience variables included students' perceived fit with the academic program (*perceived fit academic program*: 10 items, α=.82, e.g. *I find the content of the program interesting*) and their perceptions of the academic support provided by school staff (*perceived academic support*: 9 items, α=.85, e.g. *Teachers support me well if I have questions about a task*). Moreover, two single item measures were used to specifically tap students' perceptions of the difficulty of the degree program (*perceived difficulty degree program*), and of the proportion of autonomous work in the program (*perceived proportion of autonomy*). Social school experience variables included students' perceived fit with classmates (*perceived fit classmates*: 6 items, α=.77, e.g. *I get along well with most of my classmates*), with the school climate (*perceived fit school climate*: 9 items, α=.82, e.g. *I feel safe at this school*), their perceptions of the social support provided by school staff (*perceived social support*: 10 items, α=.90, e.g. *School staff support me when I don't feel well*), and a single-item measure on the perceived strictness of school rules and regulations (*perceived strictness school rules*).

Variables concerning students' background included basic sociodemographic characteristics (age, gender, ethnic identity, household composition, job status parents, highest educational level parents, financial situation in the family) and academic characteristics (prior education, school, vocational sector, and level of current degree program), as well as personal circumstances that are associated with an increased risk for dropout: having a child / (partner) being pregnant, personal debts, drug abuse, having been arrested by the police, and having an extra job. Last, we included a measure on the amount of support for school that students encounter in their home environment from parents and peers (*school support in community*: 5 items, α=.70, e.g. *I can discuss school issues with my parents*).

**Questionnaire**

We developed a self-report questionnaire to suit the specific level and nature of SVE and its students. Items were partly inspired by previous questionnaires on school experiences and engagement in American and Dutch educational settings (Beekhoven, 2002; Goodenow & Grady, 1993; Pascarella & Chapman, 1983; Voelkl, 1995; Willms, 2003). The questionnaire was subjected to a pilot study before being

finalized. Calculation of Cronbach's alpha's and principle component analyses were used to examine the reliability and structure of the questionnaire. All items were measured with statements, to which students responded on a 5-point Likert-type scale (strongly disagree to strongly agree), except for the items on students' background characteristics. Both indicative and contra-indicative statements were included in the questionnaire. Three items, on students' perceptions of the difficulty of the degree program, the proportion of autonomy in the program, and the strictness of school rules and regulations, had an alternative scale, to enable respondents to report less optimal experiences on both the 'too much'- and the 'too little'-side of the spectrum.

**Data collection**

Data were collected at the start of the second semester of the academic year 2008/9. Students filled in a questionnaire in the classroom under supervision of their teacher. All teachers were informed about the purpose of the study, and they received an instructional handout. To guarantee respondents' privacy, questionnaires were not labelled for individual student names, and students could hand in their questionnaire directly in a blank envelope. A short introductory statement about the study was printed on the questionnaire, as well as a privacy statement in which the research team stated not to report on any identifiable personal data.

**Data analysis**

We screened the data for meeting the assumptions of regression analysis. A strong correlation ($r$ =.7) was found between two predictors: *perceived academic support* and *perceived social support*. To prevent multicollinearity problems in our regression analyses, we merged these two scales into one variable *perceived support school staff* (α=.92). Missing values were limited (0-2% across all items), and as we detected no obvious patterns in missing values, we managed those through the expectation maximization algorithm (SPSS Inc., 2010). The intra-class correlation coefficient (ICC) indicated that a substantial part of the variance could be attributed to between-class differences, with ICC's ranging from .08 to .11 (Snijders & Bosker, 1999). Therefore, we conducted multilevel regression analyses, with class and student as two separate levels. To facilitate interpretation of the scores, variables were standardized to zero mean and unity variance. We performed sequential multiple regression analyses, distinguishing between predictor and outcome variables. In Model 1 we included student background characteristics, in Model 2 we added the school experiences of the student. We calculated the explained variance for both multilevel models (Snijders & Bosker, 1999). Last, we examined first order interaction effects of students' background characteristics and school experiences on their emotional engagement with school.

**Table 2: regression coefficients of two models predicting students' emotional engagement in senior vocational education**

| | Sense of belonging ICC = .11 mean[a] = 3.51 SD = .72 | | | | Valuing ICC = .09 mean[a] = 4.03 SD = .65 | | | | General educational attitudes ICC = .08 mean[a] = 3.83 SD = .53 | | | |
| | Model 1 | | Model 2 | | Model 1 | | Model 2 | | Model 1 | | Model 2 | |
| | β (SE) | p | β (SE) | p | β (SE) | p | β (SE) | p | β (SE) | p | β (SE) | p |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BACKGROUND STUDENT** | | | | | | | | | | | | |
| Year of birth | .04 (.04) | .360 | .04 (.03) | .200 | -.08 (.04) | .062 | -.05 (.04) | .138 | -.07 (.04) | .088 | -.05 (.04) | .157 |
| Male (vs. female) | .02 (.10) | .867 | -.10 (.07) | .174 | .14 (.10) | .151 | .08 (.08) | .349 | -.12 (.09) | .193 | -.16 (.08) | .057 |
| Ethnic identity (vs. native Dutch) | | .018* | | .211 | | .873 | | .594 | | .000*** | | .000*** |
| *Moroccan background* | .22 (.11)* | | .04 (.08) | | .11 (.11) | | -.05 (.09) | | .52 (.11)*** | | .41 (.10)*** | |
| *Turkish background* | .02 (.11) | | .09 (.08) | | -.01 (.11) | | -.03 (.09) | | .60 (.11)*** | | .57 (.10)*** | |
| *Surinamese background* | -.23 (.13) | | -.17 (.09) | | .12 (.13) | | .03 (.11) | | .38 (.12)** | | .36 (.11)*** | |
| *Antillean background* [c] | -.08 (.25) | | .03 (.19) | | .05 (.26) | | .34 (.22) | | .73 (.25)** | | .89 (.22)*** | |
| *Other ethnic background* | -.19 (.12) | | -.09 (.08) | | .05 (.12) | | .07 (.10) | | .53 (.12)*** | | .60 (.10)*** | |
| Prior education (vs. PVE with diploma) [d] | | .001*** | | .204 | | .175 | | .684 | | .212 | | .324 |
| *PVE without diploma* | .42 (.17)* | | .12 (.13) | | .39 (.18)* | | .16 (.15) | | .38 (.17)* | | .14 (.15) | |
| *SVE with diploma* | .27 (.14)* | | .18 (.09) | | .13 (.13) | | .04 (.11) | | .05 (.12) | | .01 (.11) | |
| *SVE without diploma* | .46 (.12)*** | | .15 (.09) | | .16 (.13) | | -.02 (.10) | | -.05 (.12) | | -.18 (.11) | |
| *Other prior education* | .16 (.10) | | .10 (.08) | | .14 (.10) | | .09 (.09) | | .08 (.10) | | .02 (.09) | |
| Household (vs. living with two parents) | | .222 | | .688 | | .798 | | .440 | | .768 | | .749 |
| *Living alone* | .04 (.20) | | .10 (.15) | | -.16 (.21) | | -.04 (.17) | | .06 (.20) | | .15 (.18) | |
| *Living with one parent* | -.17 (.08)* | | -.01 (.06) | | .01 (.09) | | .10 (.07) | | -.07 (.08) | | -.02 (.07) | |
| *Living with other relatives/friends* | -.03 (.12) | | .10 (.09) | | -.09 (.13) | | .10 (.11) | | -.07 (.12) | | .08 (.11) | |
| Job status parents (vs. both parents have a job) | | .251 | | .362 | | .135 | | .272 | | .022* | | .040* |
| *Both parents are unemployed* | .16 (.11) | | .05 (.09) | | .14 (.12) | | .05 (.10) | | .24 (.11)* | | .16 (.10) | |
| *One parent has a job* | .03 (.08) | | -.04 (.06) | | .18 (.08)* | | .12 (.07) | | -.01 (.08) | | -.03 (.07) | |
| *Student doesn't know* | .20 (.11) | | .12 (.08) | | .18 (.12) | | .14 (.10) | | .26 (.11)* | | .23 (.10)* | |
| Highest education parents (vs. SVE or similar) | | .025* | | .026* | | .104 | | .129 | | .148 | | .152 |
| *Primary education* | .03 (.13) | | -.03 (.10) | | .08 (.14) | | .02 (.12) | | .14 (.13) | | .10 (.12) | |
| *Secondary education* | .13 (.11) | | .00 (.09) | | -.05 (.12) | | -.12 (.10) | | .18 (.11) | | .15 (.10) | |
| *Higher education* | -.16 (.10) | | -.08 (.07) | | -.20 (.10)* | | -.15 (.08) | | .08 (.10) | | .12 (.09) | |
| *Student doesn't know* | -.16 (.09) | | -.19 (.07)** | | -.15 (.09) | | -.16 (.08)* | | -.05 (.09) | | -.04 (.08) | |

*(table 2 continues on next page)*

*(table 2 continued)*

| | Sense of belonging | | | | Valuing | | | | General educational attitudes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | | Model 2 | | Model 1 | | Model 2 | | Model 1 | | Model 2 | |
| Financial problems family  (vs. no problems) | -.01 (.08) | .943 | .00 (.06) | .947 | .10 (.08) | .225 | .12 (.07) | .084 | .11 (.08) | .163 | **.18 (.07)** | **.011*** |
| Student (or partner) expects / has child(ren) (vs. no child or pregnancy) | -.00 (.16) | .993 | .14 (.12) | .252 | -.05 (.17) | .758 | .13 (.14) | .347 | -.14 (.16) | .401 | .06 (.15) | .665 |
| Personal debts student (vs. no debts) | **-.25 (.12)** | **.036*** | -.10 (.09) | .249 | -.17 (.12) | .162 | -.15 (.10) | .144 | -.19 (.12) | .115 | -.15 (.11) | .148 |
| Student uses (soft-)drugs (vs. no drugs use) | -.10 (.11) | .329 | -.03 (.08) | .721 | **-.27 (.11)** | **.015*** | **-.19 (.09)** | **.034*** | **-.35(.11)** | **.001*** | **-.33 (.09)** | **.000*** |
| Student has been arrested by the police (vs. never arrested) | .15 (.09) | .102 | **.14 (.07)** | **.034*** | .03 (.09) | .755 | .03 (.08) | .689 | .05 (.09) | .550 | .07 (.08) | .406 |
| Extra job student     (vs. no extra job) | | .176 | | .613 | | .396 | | .648 | | .057 | | **.017*** |
| *< 8 hours a week* | -.02 (.09) | | -.01 (.07) | | .06 (.09) | | .04 (.07) | | .13 (.09) | | **.16 (.08)*** | |
| *8-15 hours a week* | -.00 (.07) | | .04 (.06) | | .03 (.08) | | .07 (.06) | | .14 (.07) | | **.16 (.07)*** | |
| *> 15 hours a week* | **-.26 (.12)*** | | -.07 (.09) | | -.16 (.12) | | -.04 (.10) | | -.13 (.12) | | -.09 (.11) | |
| School support in community | **.24 (.03)** | **.000*** | .02 (.03) | .330 | **.24 (.03)** | **.000*** | **.10 (.03)** | **.000*** | **.26 (.03)** | **.000*** | **.16 (.03)** | **.000*** |
| SVE school board (not specified here) | | .054 | | .350 | | .369 | | .758 | | .246 | | .355 |
| SVE sector (vs. health&social care) | | .175 | | .726 | | **.015*** | | .407 | | .306 | | .112 |
| *Economics* | .00 (.12) | | .06 (.08) | | -.08 (.11) | | -.02 (.08) | | -.06 (.09) | | -.01 (.08) | |
| *Engineering* | .23 (.14) | | .05 (.10) | | **.27 (.13)*** | | .10 (.10) | | -.18 (.12) | | -.19 (.10) | |
| SVE degree program level (vs. level 2) | | .643 | | .440 | | **.037*** | | .170 | | **.009*** | | **.000*** |
| *Level 1* | -.03 (.16) | | .15 (.11) | | **-.30 (.15)*** | | -.14 (.11) | | -.01 (.13) | | .05 (.11) | |
| *Level 3* | .08 (.13) | | .08 (.09) | | .12 (.12) | | .04 (.08) | | **-.20 (.10)*** | | **-.22 (.08)**** | |
| *Level 4* | .14 (.12) | | .10 (.08) | | .13 (.11) | | .11 (.08) | | .15 (.09) | | **.16 (.08)*** | |
| **SCHOOL EXPERIENCES** | | | | | | | | | | | | |
| Perceived fit academic program | | | **.37 (.03)** | **.000*** | | | **.58 (.04)** | **.000*** | | | **.18 (.04)** | **.000*** |
| Perceived support school staff | | | .03 (.04) | .366 | | | -.03 (.04) | .545 | | | .06 (.04) | .163 |
| Perceived fit classmates | | | **.16 (.03)** | **.000*** | | | **.17 (.03)** | **.000*** | | | **.25 (.03)** | **.000*** |

*(table 2 continues on next page)*

| *(table 2 continued)* | Sense of belonging | | | Valuing | | | General educational attitudes | | |
|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | | Model 1 | Model 2 | | Model 1 | Model 2 | |
| Perceived fit school climate | | **.31 (.03)** | **.000*** | | | **-.12 (.04)** | **.001*** | | -.03 (.04) | .362 |
| Perceived strictness school rules (vs. just right) | | | .602 | | | .295 | | | .475 |
| *very lenient* | | .07 (.07) | | | .09 (.08) | | | .09 (.08) | |
| *very strict* | | .03 (.06) | | | -.06 (.07) | | | -.02 (.07) | |
| Perceived difficulty degree program (vs. just right) | | | .132 | | | .916 | | | **.001*** |
| *very easy* | | -.09 (.06) | | | -.02 (.07) | | | .10 (.07) | |
| *very difficult* | | -.11 (.07) | | | .01 (.08) | | | **-.26 (.09)** | |
| Perceived proportion of autonomy (vs. just right) | | | .186 | | | .128 | | | .057 |
| *very little autonomy* | | -.11 (.09) | | | -.05 (.10) | | | .07 (10) | |
| *very much autonomy* | | -.09 (.06) | | | **-.13 (.06)*** | | | **-.14 (.07)*** | |
| **Explained variance** [b] | R² = .16 | R² = .54 | | R² = .13 | R² = .42 | | R² = .19 | R² = .37 | |

*Note:* n=909, N=60, * p<.05, ** p<.01, *** p<.001. Two-tailed test. Not shown: intercept.

[a] Mean on a scale from 1 (very negative) to 5 (very positive)

[b] shown: student level variance

[c] n=15.

[d] PVE = pre-vocational education, SVE = senior vocational education

## RESULTS

### Main effects

Table 2 shows the results for the two models. Model 1 indicates the standardized regression coefficients for a model that includes students' background characteristics only. Model 2 shows the coefficients for a model with the school experience variables added. Model 2 explains substantially more variance than model 1. First year students in SVE generally report positive emotional engagement with school, with means ranging from 3.51 to 4.03 on a scale from 1 to 5. Students' valuing of their SVE education is particularly high. Engineering students value their education most, while students at the lowest SVE level value their education less, but both effects disappear when we control for school experiences in Model 2. We find some positive effects of having an ethnic minority background, particularly on students' general educational attitudes, and of coming from other prior educational routes than the regular route from pre-vocational education (PVE) to SVE, i.e. without having graduated in PVE, or after having attended another SVE program prior to the current program. The latter effect disappears when we take students' school experiences into account, which is the case for many effects of background characteristics on students' sense of belonging. Effects of student background characteristics that remain significant after controlling for school experiences are a negative effect of using (soft)drugs, and of not knowing the job status of parents, and positive effects of school support in students' community. Not knowing the educational level of parents, and living in a family with financial problems both gain impact in a model that includes school experience variables.

Model 2 indicates that school experiences have a strong influence on students' emotional engagement with school, especially on their sense of belonging. The perceived fit with the academic program is the most important predictor of students' sense of belonging and valuing, followed by the perceived fit with classmates. Support from school staff does not significantly predict students' emotional engagement in a model with other school experiences taken into account. The perceived fit with the school climate is an important predictor of sense of belonging, but this variable appears to be negatively related to students' valuing of their education. However, the fit with school climate shows a positive correlation with valuing in a zero order correlational model. Its positive influence is suppressed when the other school experience variables, with which the school climate variable is correlated, are added to the model. Experiencing (too) much autonomy in the program negatively affects students' valuing and general educational attitudes towards education, and experiencing that the program is very difficult negatively affects general attitudes as well. We do not find a

significant effect of students' perceptions of the strictness of school rules and regulations on emotional engagement.

**Interaction effects**

To investigate whether the effects of school experiences on students' emotional engagement with school vary between different groups of students, we estimated interaction effects of all individual characteristics of students with the school experience variables. Here, we discuss the interaction effects that were significant at the 5% level. Moroccan students' perceived fit with the academic program and with the school climate affects their sense of belonging less than for native Dutch students. We find similar patterns for student with other ethnic minority backgrounds, but none of those are significant at p<.05. Similarly, the perceived fit with the academic program affects the general educational attitudes of students with personal financial debts less strongly than for students without debts. Perceived academic fit plays a more prominent role in the sense of belonging of students who use drugs, and of students who have an extra job for more than 8 hours a week. The clearest pattern of interaction effects was found for perceived fit with classmates. For older students the fit with classmates is less important for them to value their education, whereas this fit strongly affects the valuing of students who have been arrested by the police, who use (soft)drugs, who expect or have (a) child(ren), or who have financial debts. The perceived fit with classmates affects the general educational attitudes of students with low educated parents more than of students with higher educated parents. We also find some negative effects of positive school experiences for certain groups of students. If students use (soft)drugs, have financial debts, or live on their own, positive experiences with the support they encounter from school staff negatively affects their attitudes towards education in general. Likewise, positively perceived support from school staff negatively affects the valuing among students from families with financial problems, as well as the sense of belonging among students with a Moroccan background. Negative effects on students' general educational attitudes were also found for a positive fit with the school climate among students who use (soft)drugs and students with personal financial debts.

**DISCUSSION**

**School experiences matter**

Our results show that students' emotional engagement with school is closely related to their school experiences. School experiences matter for students to perceive a sense of belonging in school, to value their education, and to hold positive attitudes towards education in general. The latter is a more

decontextualized measure of emotional engagement with school, and it is therefore not surprising that general educational attitudes are less related to current school experiences than aspects of emotional engagement that refer to the particular school and degree program.

**Strong emotional engagement with school among ethnic minority students**

Ethnic minority students report particularly positive general attitudes towards education, which is in line with findings in earlier studies (Alexander et al., 2001; Downey et al., 2009; Kao & Tienda, 1998; Mickelson, 1990; Van der Veen & Peetsma, 2006). The positive educational attitudes of minority youth have attracted the attention of researchers for a longer time, as minority youth have an increased risk for dropout. A study on the attitudes of ethnic minority students in the US showed that these attitudes were less affected by students' experiences in school (Alexander, Entwisle, & Bedinger, 1994). In our study, we find a similar pattern for students with a Moroccan background, a group that is overrepresented in dropout statistics in the Netherlands. Moroccan students report a stronger sense of belonging, but this sense of belonging is less related to academic and social experiences in school than among students with a native Dutch background. In our regression model, Moroccan students' sense of belonging benefits less from positive experiences, but it is equally less affected by negative school experiences. Similar but non-significant interaction effects are found for students with other ethnic minority backgrounds.

**At-risk students' emotional engagement with school**

Dutch dropout rates are socially and ethnically patterned. Students from lower socioeconomic backgrounds, ethnic minority backgrounds, or students with problematic personal circumstances, such as drug abuse or delinquency, have an increased risk to drop out. Our study shows that the social and ethnic patterns found in Dutch dropout statistics are not straightforwardly reflected in students' emotional engagement with school. In general, at-risk students do not report significantly lower levels of emotional engagement with school. In some cases opposite patterns occur. Not only do we find significantly more positive general educational attitudes among ethnic minority students, we also find more positive attitudes among students from families with financial problems or with unemployed parents. We may interpret this result as an indication that those students attach additional value to education as a means to pursue upward social mobility. We also observe an increased sense of belonging among students who have been arrested by the police, indicating that school is a pleasant, or maybe even safe, haven for those students. School experiences seem to partially explain differences in emotional engagement relating to student background characteristics. For instance, the significant effect of school support in students'

community, prior educational background, single parent household, personal financial debts, or an intensive job, on students' sense of belonging disappears when controlling for school experiences. Likewise, the negative scores on *valuing* among students with higher educated parents, probably induced by a lesser valuing of SVE education compared to higher education in those families, is not significant anymore once students' experiences in their degree program are considered. However, school experiences do not account for all individual differences in students' emotional engagement. Students using (soft)drugs value their SVE program and education in general less, and students who don't know what educational level their parents attained are less emotionally engaged on the whole. The effect of not knowing the educational level of parents even increases when taking students' school experiences into account. As much as 41% of the students in our sample do not know the educational background of their parents, suggesting that sharing educational experiences is a rare event in those families. It is possible that not knowing what education parents completed is a proxy for lower levels of parental education. Parents who have completed more years of education themselves, are often better equipped to provide support for their children's school careers than lower educated parents (Alexander et al., 1994; Roderick, 1993). This could be an explanation for the negative relationship of unknown parental education with emotional engagement. Parents have a guiding role in their interaction with their children about school matters (Alexander et al., 2001). The important role of support for school in students' home environment in our study underline this idea. If students can talk with their parents and peers about school experiences, they value their education more, and they report more positive attitudes towards education in general.

**The role of support from school staff**
Sharing educational experiences, values, and support for school work is an important socializing process that shapes students' emotions and attitudes towards their education (Eccles, 1983). Students lacking such sources of support in their community may be more dependent of school staff to attach meaning to education and to their experiences in that education (Enthoven, 2007). From that perspective, we might expect students with lower educated parents, students living without their parents or with a single parent, or students reporting a lack of support for school at home, to be more dependent of the support provided by school staff to develop emotional engagement with school. However, in our study, the support from school staff is conspicuous by its absent role in students' emotional engagement. Apparently, when controlling for students' perceived fit with the academic program, with classmates, and with the school climate, the support provided by school staff does not significantly contribute to students' sense of belonging, valuing or general educational attitudes. Neither do we find

indications of additional importance of support from school staff for at-risk students' emotional engagement with school. However, we need to take into account some important considerations when interpreting this result. Above, we explained that social and academic experiences are intertwined in school contexts. The high correlation between the scales of perceived academic support and perceived social support from school staff confirms that it can be difficult to clearly discriminate between the academic or social domains of school experiences. Likewise, we should consider that, while the scale on perceived fit with the academic program doesn't explicitly concern teachers, the program is delivered by those teachers. If students report a positive fit with the academic program, the teachers apparently do a good job in teaching classes that are appreciated for their design and content. A similar interweaving is likely at work with the measure 'perceived fit with the school climate', which concerns the perceived atmosphere, safety, and rules and regulations at school. School staff have a key role in shaping this school climate. Our results should therefore not be interpreted as an indication that school staff don't matter for students' emotional engagement. Nevertheless, our results indicate that the perceived support from school staff is not the primary force that drives students' emotional engagement in SVE. This result concords with the view of Cotterell (2007) that teacher support should be defined more from the perspective of the teaching role, instead of solely describing it by "soft" phrases like nurturance. Teachers support their students by providing direction and guidance inside and outside the classroom. We also found some negative interaction effects for perceived support from school staff, indicating that high levels of perceived support from school staff are negatively related to the emotional engagement of students with a Moroccan background, students using (soft)drugs, students having financial debts, students living in poor families, and students living on their own. Perhaps, this negative relationship indicates that while students recognize that their teachers try their best to help them, teachers' support does not effectively meet the needs of those particular students. This interpretation suggests that a gap needs to be bridged between the support as needed by specific groups of students and the support provided by schools. Another explanation could be to think of this relationship in reverse order. Students with low levels of engagement in school may turn to staff to get help and support more regularly, which could explain the high scores on perceived support from school staff.

**The importance of classmates**
Researchers have focused more on teachers than on peers as socializing forces of student engagement (Ryan, 2000). A recent policy report in the Netherlands emphasizes the role of the teacher as the main avenue for students to establish a solid school connection as well (Scientific Council for Government Policy, 2008).

However, our study illustrates that classmates should be considered as an additional source for students' emotional engagement with school. A positively perceived relationship with classmates appears to be particularly important for students who habe been arrested by the police, who use drugs, have debts, have children, or who have lower educated parents. Adolescents often prefer their peers rather than school staff for discussing personal concerns (Cotterell, 2007). This might apply in particular to students who use drugs, who have been arrested by the police, or who have gotten into financial debts, as those behaviors tend to be associated with peer pressure mechanisms. Our results can be interpreted as an appeal for organizing more projects on peer tutoring and counseling in SVE.

**Conclusion**

We conducted our study in post-secondary vocational education, a sector often overlooked in educational research. Relatively little is known about the educational attitudes and emotions of students who do not go to college after high school. With this study, we hope to contribute to filling this gap. However, the focus on post-secondary vocational education calls for awareness of the specific educational context of our study, which limits the generalizability of our results to other educational settings. Our data show strong relationships between students' school experiences and their emotional engagement, indicating that school experiences matter for students to feel connected to their education. However, we need to take into consideration that both the explanatory and outcome variables measure students' emotional response to their school environment. We should be aware of common method bias in our data (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In particular, respondents' tendency to report consistent attitudes throughout all sections of the questionnaire, and the notion of positive or negative affectivity, which refers to respondents' fundamental emotional dispositions, may affect students' scores on our questionnaire. Also, we must keep in mind that the design of the current study is cross-sectional. While we distinguished explanatory and outcome variables in our models, no inferences on causality can be made on the basis of the current data. Future research could benefit from the continuation of our longitudinal project, which allows for the assessment of causal relationships between institutional and student characteristics, emotional and behavioral engagement, and performance and persistence in school.

Our study demonstrates that experiencing an academic connection is the principal key to emotional engagement with school in SVE. This result underlines the view that a sense of belonging should not only be conceptualized in relational terms, but also in academic terms (Martin & Dowson, 2009). Students do not only connect with human beings in the educational environment, but also with the very school and education itself. SVE curricula have been redesigned dramatically in the past decade, resulting in competency-based curricula, with more autonomy and

responsibility for SVE students. Our results confirm that investing in a high-quality curriculum is the best way to engage SVE students. SVE programs appear to succeed in engaging their students, as in general students in our study value their education highly. Yet, our results give a warning not to push the level of autonomy and challenge in SVE too far. Too high levels of perceived autonomy associate with less valuing of education, and perceptions of a highly challenging program relate to more negative educational attitudes. As SVE serves the lower achieving proportion of the Dutch post-secondary student population, with a substantial percentage of at-risk students, some might be tempted to believe that these students are less academically motivated, and that they primarily need extensive social-emotional support to succeed in school. The respondents in our study unequivocally demonstrate that students in senior vocational education perceive their school primarily as a place for learning: without the academic click, there will be no connection.