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

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## **Introduction**

The transition to post-secondary vocational education in the Netherlands appears to be difficult for many students. Dropout rates in the first year after the transition are high. In accordance with the economic development agenda of the European Union, Dutch government intends to bring down dropout rates considerably (Dutch Ministry of Education Culture and Science, 2010a). As recent large-scale attempts to reduce dropout have not yielded the desired effect in post-secondary vocational education, Dutch government has announced that, in the coming years, it will concentrate on dropout prevention in this educational sector (Dutch Ministry of Education Culture and Science, 2010a). The key to effective dropout prevention is to gain better insight in the roots of dropout (Dutch Education Inspectorate, 2009). We need to find out what particular factors interfere with students' school success after the transition to post-secondary vocational education. To better understand the multiple pathways that lead to dropout, several sources of influence that may affect students' school careers, from both inside and outside the school, have to be considered. In particular, we need to identify the factors that are malleable to school-based interventions. With this dissertation, I aim to contribute to building a knowledge base for the enhancement of school success and dropout prevention in post-secondary vocational education. In order to obtain this goal, I have followed a cohort of students from the moment of entrance into post-secondary vocational education until the start of the second year. I examined students' social and educational background, their educational plans and expectations upon entrance, and their emotions, behaviors, and attainment in school throughout the first year. The general research question that guided the research reported in this dissertation is: Which factors and processes inside and outside school could help to explain the risk for dropout in the first year in post-secondary vocational education in the Netherlands? In this introduction, I outline the background and design of the study.

## **BACKGROUND OF THE STUDY**

### **Introducing Dutch post-secondary vocational education**

In the Netherlands, 55% of students in Dutch secondary education attend the pre-vocational track (PVE, or VMBO in Dutch) between the age of 12 and 16 (Dutch Ministry of Education Culture and Science, 2010a). Since a PVE diploma does not qualify as a basic qualification, the mandatory level that every person in Dutch education is expected to obtain (Dutch Ministry of Education Culture and Science, 2006), PVE graduates are required to transfer to a subsequent level of education. Most PVE graduates, 87%, transfer to senior vocational education (SVE, or MBO in

Dutch) at the age of 16 (Dutch Ministry of Education Culture and Science, 2011b). SVE provides specialized vocational training in engineering, health & social care, economics, and agriculture at four degree levels, preparing students for a wide range of occupations (Dutch Ministry of Education Culture and Science, 2006). In order to meet the basic qualification requirement, students have to obtain a level 2 diploma or higher before leaving SVE (Dutch Ministry of Education Culture and Science, 2006). In the academic year 2008/2009, the year in which the data collection for this study took place, the total student population in SVE was 526,047 students, which is about 34% of the total student population in Dutch post-secondary education (Knowledge Centre for Vocational Training and Labour Market, 2010; The Netherlands Association of VET Colleges, 2010). The majority of SVE students, 63%, enroll in full-time school-based training programs (“voltijds BOL” in Dutch), which consist for 20 to 60% of workplace learning (Knowledge Centre for Vocational Training and Labour Market, 2010). A smaller proportion of SVE students enroll in programs in which they work four days a week and take classes one day a week (“BBL” in Dutch). A small part of the SVE population, 5%, enrolls in degree programs at level 1 (assistant level), 25% enrolls in level 2 programs (basic vocational level), 27% in level 3 programs (full professional level), and 43% in level 4 programs (specialist level) (The Netherlands Association of VET Colleges, 2010). Program level enrollment is determined by students’ PVE degree level. Level 1 programs do not apply entry requirements. A degree from one SVE program level gives access to a subsequent program level. Students with an SVE diploma at level 4 are qualified to transfer to higher education. SVE program durations range from 6-12 months (level 1) to 4 years (level 4). Most students in SVE enroll in programs in economics (33%), health & social care (31%), and engineering (30%). A small proportion of students attend agricultural programs at specialized institutions for agricultural education (The Netherlands Association of VET Colleges, 2010). About 40% of the total Dutch labor force holds an SVE degree (The Netherlands Association of VET Colleges, 2010).

### **The difficult transition to SVE: high dropout rates**

Compared to students in the two upper tracks in Dutch secondary education, students in the vocational track are required to make an additional school transition to obtain the mandatory basic qualification (Dutch Ministry of Education Culture and Science, 2006). The compulsory transition to SVE appears to be difficult for many students. Dropout rates peak in SVE: 75% of students who drop out of school before obtaining a basic qualification do so in SVE (Dutch Ministry of Education Culture and Science, 2011a). Five years after their entrance in SVE, approximately 25% of students have left the educational system without a diploma (Dutch Ministry of Education Culture and Science, 2011b). More than half of SVE dropouts leave in the first year (Dutch Ministry of Education Culture and Science,

2011b). Dropout rates in the first year differ largely between program levels: 35% of students drop out of a level 1 program, 15% of a level 2 program, 8% of a level 3 program, and 6% of a level 4 program (Scientific Council for Government Policy, 2008). Some dropouts will return to school in later years, but most dropouts leave the educational system for good, without a basic qualification (CBS Statistics Netherlands, 2011; Herweijer, 2008). Young people without a basic qualification are twice as likely to be unemployed as students with a basic qualification (Dutch Ministry of Education Culture and Science, 2011a). Moreover, if dropouts without a basic qualification have a job, this is more often a temporary, low-qualified or low-wage job (Dutch Ministry of Education Culture and Science, 2010a; Research Centre for Education and the Labor Market, 2009). Although some students make a deliberate and well-considered decision to leave school, and pursue a successful career (Eimers, 2006; Scientific Council for Government Policy, 2008), for many students dropping out of school is a negative decision that unfavorably affects their life course (Bridgeland, DiIoliou, & Morison, 2006; Research Centre for Education and the Labor Market, 2009).

### **Searching for the reasons why students struggle with the transition to SVE**

To help students succeed in SVE, we need to understand what factors make the transition to SVE difficult for so many students. In general, school transitions are difficult for all youth, as transferring students are required to integrate into a new institutional environment (Alexander, Entwisle, & Kabbani, 2001; Tinto, 1993). The transition from PVE to SVE is thought to be particularly difficult, because of substantial differences between the two types of education. Compared to PVE, SVE requires more autonomy and self-direction from students, as SVE programs provide less directive structures, instructions and expectations (Verstegen & Severiens, 2007). SVE schools are larger, with less intensive contacts between students and school staff, and more perceived anonymity (Scientific Council for Government Policy, 2008). In addition, SVE schools offer less extensive student support services than PVE schools (Scientific Council for Government Policy, 2008). Another particular complexity of the transition to SVE, is the choice that students need to make for an SVE program which prepares them for a specific job or vocational sector. SVE students often have difficulty to determine what vocational sector and program suits their interests and abilities best, and many SVE students discover that they made the wrong choice after a while (Voncken, van der Kuip, Moerkamp, & Felix, 2000). Last, students may lack motivation to transfer to SVE. Some students prefer to work in a full-time job instead of going to school (Scientific Council for Government Policy, 2008). Because of the basic qualification requirement, they have to make the transition to SVE nevertheless. Students think of the transition to SVE as a big step (Verstegen & Severiens, 2007). Yet, most students succeed in the first year after the transition to SVE, whereas, on

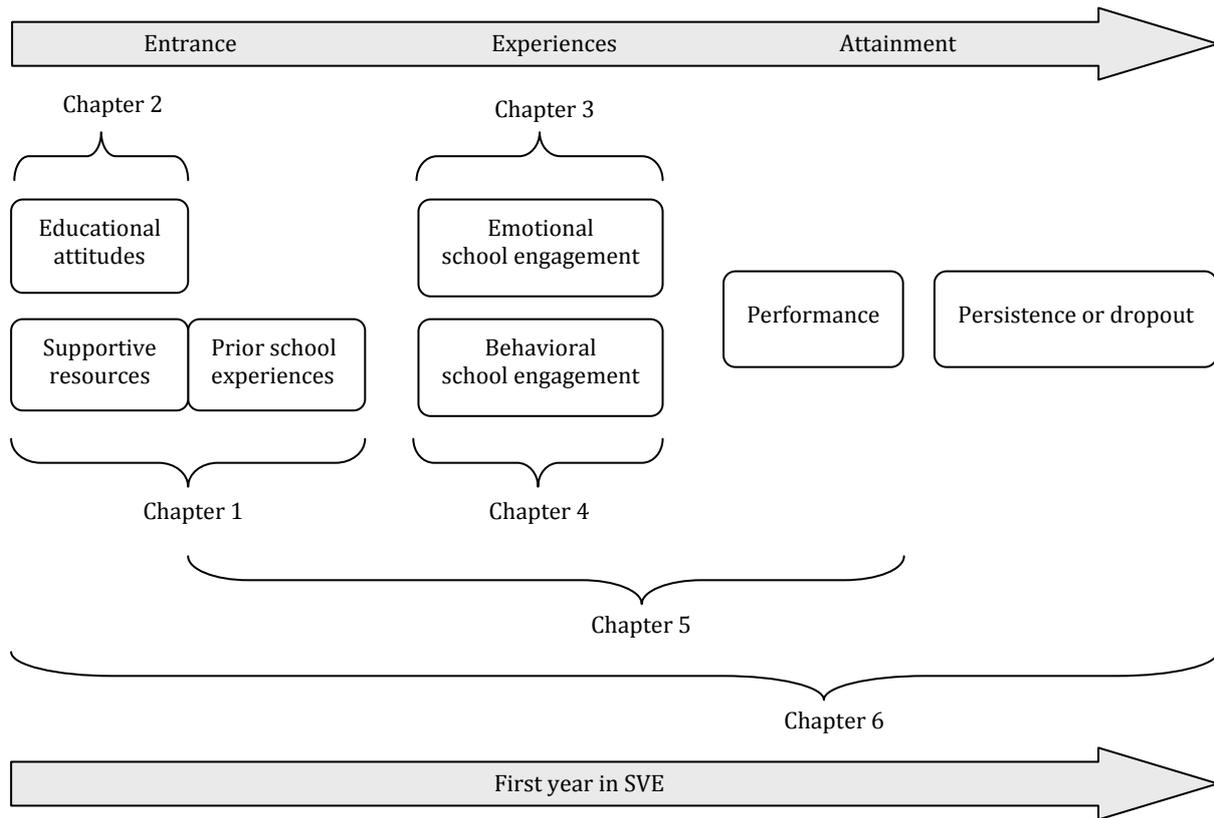
average, 1 in 6 students drops out within the first year (Scientific Council for Government Policy, 2008). It has been suggested that students from disadvantaged backgrounds struggle with school transitions in particular (Roderick, 1993). Dutch dropout rates confirm that students from disadvantaged backgrounds, such as a low socioeconomic or ethnic minority background, have an increased risk to drop out. In addition, male students, students growing up in broken families, and older students have been found to drop out more often (Dutch Ministry of Education Culture and Science, 2010b). These statistics do not inform us about the reasons why students with those particular characteristics drop out more often than other students. Various possible explanations can be found in the international literature, ranging from differences in the school orientation and support in students' home environment to differences in students' experiences, behavior and performance in school (e.g. Alexander et al., 2001; Finn & Rock, 1997; OECD, 2006). Next to sociodemographic patterns in dropout rates, Dutch dropout reports indicate that students who are involved in problematic situations and behaviors outside school, such as debts, the use of drugs, or delinquency drop out more often (Dutch Ministry of Education Culture and Science, 2011b; Scientific Council for Government Policy, 2008; ter Bogt, van Lieshout, Doornwaard, & Eijkemans, 2009; Weerman & van der Laan, 2006). It is difficult to establish causal order in the relationship between those circumstances and dropout, as both may be symptoms of another underlying cause (Rumberger, 1987). In sum, we know which background characteristics of students indicate an increased risk for dropout in SVE, but we do not know the mechanisms that account for this increased risk. In this dissertation, I seek to uncover some of these mechanisms by studying the entrance, experiences and attainment of at-risk and non-at-risk students in the first year in SVE.

### **Towards a comprehensive model of dropout**

To facilitate dropout prevention interventions, it is essential to search for factors and processes associated with an increased risk for dropout that are manipulable (Finn & Voelkl, 1993). From that perspective, the concept of school engagement is of particular interest. School engagement refers to students' emotional and behavioral involvement in school (Appleton, Christenson, & Furlong, 2008; Fredricks, Blumenfeld, & Paris, 2004). Over the past two decades, school engagement has emerged as a promising theoretical model to understand the dropout process (Appleton, Christenson, Kim, & Reschly, 2006; Finn, 1993; Fredricks et al., 2004). Previous research points to school engagement as "the most proximal point of entry" to enhance the school success of at-risk students (Connell, Spencer, & Aber, 1994, p. 504; Finn, 1993; Finn & Voelkl, 1993). For that reason, school engagement plays a key role in this dissertation. I examine the school engagement of at-risk and non-at-risk students in SVE, the influence of students'

perceptions of various social and academic aspects of SVE on their school engagement, as well as the role of school engagement in students' performance and persistence in SVE. However, a sole focus on students' experiences inside school would deny the role of other sources of influence, such as family, peers, and individual factors in dropout (Janosz, LeBlanc, Boulerice, & Tremblay, 2000). Several researchers have emphasized that combining those multiple sources of influence into one comprehensive model of school dropout is a challenging but essential next step to advance our understanding of the complex roots of dropout (Alexander, Bozick, & Entwisle, 2008; Battin-Pearson, Newcomb, Abbott, Hill, Catalano, & Hawkins, 2000; Janosz et al., 2000; Rumberger, 1995). Dropout should not be conceptualized as an event that takes place at one particular point in time, but rather as the culmination of a process that may stretch over multiple years and contexts (Alexander et al., 2001; Finn, 1993). A focus on the identification of processes that immediately precede dropout, such as declining school performance, bears the risk of overlooking the many factors that contribute to the dropout process over a longer course of time (Battin-Pearson et al., 2000; Rumberger & Lim, 2008). In this dissertation, I work towards a more comprehensive model of dropout, by taking a step-by-step approach to uncover distal and proximal processes that contribute to dropout. This approach is reflected in the structure of this dissertation, which consists of three parts that each comprise two chapters. Part I revolves around students' entrance in SVE. In Chapter 1, students' social and academic background characteristics upon the transition to SVE are explored, by looking at students' access to supportive resources in their home environment, as well as their school experiences prior to the transition to SVE. In Chapter 2, I examine students' educational attitudes, aspirations, and expectations upon entrance in SVE. Part II discusses students' experiences in SVE. In Chapter 3 and 4, I study the role of social and academic school experiences in students' emotional and behavioral engagement in SVE. Part III addresses students' attainment in the first year in SVE. In Chapter 5, the role of school engagement in students' performance across the transition to SVE is studied. In Chapter 6, I examine the social and academic determinants of school dropout in the first year in SVE. The step-by-step approach enables the in-depth study of the various processes that constitute the pathway to and through the first year in SVE. Figure 1 presents a schematic overview of the main constituents and the corresponding chapters of this dissertation.

**Figure 1: main constituents and corresponding chapters of this dissertation**



## DESIGN OF THE STUDY

### Sample

To enable the analysis of dropout processes and the mechanisms underlying the increased risk for dropout among certain sociodemographic groups, I analyze the entrance, experiences, and attainment of SVE students in urbanized school regions. Student populations in those regions are more diverse, with a substantial proportion of at-risk students, and dropout rates are higher than in rural areas the Netherlands (Dutch Ministry of Education Culture and Science, 2008). A focus on students in urban school regions enables the study of various potential sources of dropout that are embedded in students' lives inside and outside school. This focus confines the possibility to generalize the findings in this dissertation to the total SVE population in the Netherlands. For participation in the study, I invited ten regional school boards ("ROC's" in Dutch) from highly and intermediately urbanized areas in two regions where dropout rates are high (Dutch Ministry of Education Culture and Science, 2008). Nine school boards were interested in participation, of which five boards eventually agreed to participate in the study. Reasons for non-participation were internal organizational problems and simultaneous participation in other research projects. Prior to the start of the academic year, I asked the five school boards to select first year "voltijds BOL"

classes for each available combination of vocational sector (economics, engineering, health & social care) and program level (1 to 4). The resulting sample consisted of 1438 students in 61 classes, distributed over three sectors (health & social care: 37%; engineering: 29%; economics: 34%), and four program levels (level 1: 13%; level 2: 33%; level 3: 23%; level 4: 31%), indicating a small overrepresentation of students in level 2 and health & social care programs. Further descriptives of the sample can be found on page 21. Most schools employ a flexible intake, which means that students could start in a program at two, or several, moments in the academic year. Therefore, a number of new students were to be expected to enter the classes in the sample over the course of the academic year. This was not a problem, as the student ID numbers enabled identification of students who were not part of the initial sample. Yet, class compositions turned out to be less stable than was anticipated beforehand. A large number of new students entered the classes in the sample over the course of the study, and one class was discontinued because all students were transferred to a different class. In addition, staffing turned out to be quite unstable in some schools as well. Staff were regularly transferred to different units or locations. At one school board, a substantial reorganization caused the lay off of staff members that were involved with the study, resulting in the loss of three classes at the third measurement.

### **Survey instruments**

To suit the specific context of SVE and its students, I developed two new questionnaires: one for the first measurement, and one for the second and third measurement. At the first measurement, data were collected on students' personal, social, and educational background, as well as their educational attitudes, aspirations, and expectations of the SVE school and program. At the second and third measurement, students were asked to report on their experiences, behavior, and performance in SVE. Items were partially inspired by existing questionnaires that have been developed to measure school experiences and engagement in other educational settings (Beekhoven, 2002; Goodenow & Grady, 1993; Pascarella & Chapman, 1983; Voelkl, 1995; Willms, 2003). All items were phrased as short statements, to which students responded on a continuous scale from disagree to agree. The questionnaires were tested in a pilot study. The time needed to complete the questionnaire was measured, and students commented on the questionnaires' content, language, difficulty, structure, lay out, and instructions.

### **Survey data collection**

Survey data were collected at three moments in the first year in SVE: in the first week of the academic year, after the Christmas break, and at the end of the academic year. Students completed questionnaires in a classroom setting. Class-based data collection has the advantage that questionnaire completion is less

dependent on students' personal motivation and remembrance, as the questionnaire is distributed and completed during class, under supervision of a teacher. Questionnaire completion was on a voluntary basis, but there were no indications that students were not willing to participate. To maximize response, completion was not tied to one moment. Instead, teachers could decide on the best moment(s) to hand out the questionnaires in the period between receiving and returning the questionnaires. As 61 classes had to complete a questionnaire in the same week(s), I was not able to attend all data collection occasions in person. Several teachers, team coordinators, and administrative staff members assisted in the coordination of the data collection process. A written teacher instruction about the purpose and procedure of the data collection, including contact information if teachers needed assistance or additional explanation, accompanied all questionnaire packages. Students filled in their student identification number, as printed on their school ID card, on the questionnaires. With this number, and with students' date of birth, school, program sector and level as back-up information, I matched respondents' data from the three separate measurements, without accessing any personal data such as student names.

### **Dropout data collection**

Dropout in the first year in SVE was assessed at three different moments: dropout in the first semester, dropout in the second semester, and dropout over the summer break before the start of the second year. After each survey measurement, I examined which students from the initial sample completed a questionnaire, and which students did not. To find out whether the missing students had dropped out of the program, or if they were still participating, I asked school administrations to report on the enrollment status of all missing student numbers. If the students were not enrolled in the program anymore, I asked the schools to report on the dropout status of the students. The schools reported if a student dropped out of the program, if he or she graduated, as was possible for students in level 1 programs, or if there was a special reason for the student to leave the program, such as hospitalization or migration. Thus, I was able to discriminate between 'school dropout' and 'study dropout', and to mark 'special dropout cases'. This procedure was repeated after each survey measurement.

### **Methods**

A variety of statistical methods is used to analyze the data that were collected for this dissertation. In the first four chapters, I provide a more in-depth view of smaller parts of the data set, by applying multilevel (sequential) regression analysis to data from measurement 1 (Chapter 1 and 2) and measurement 2 (Chapter 3 and 4). In Chapter 5 and 6, I take a longitudinal perspective, using data from all three measurements. In Chapter 5, I apply multilevel structural equation

modeling to analyze the development of student engagement and performance across the transition to SVE. In Chapter 6, I use logistic sequential regression analysis to examine the influence of multiple factors on the odds to drop out in the first year in SVE.

### **CONTRIBUTION OF THIS DISSERTATION**

This dissertation contributes to educational theory, policy and practice in several ways. First and foremost, it elucidates the principles and pitfalls of a successful transition to SVE. Currently, there is little empirical knowledge about the mechanisms underlying the increased risk for dropout among particular groups of SVE students. The multifaceted perspective adds to the establishment of a more solid knowledge base for educational policy and practice workers who seek to enhance the school success of students in SVE. The large-scale longitudinal design of the study forms an important addition to previous, valuable yet small-scale, dropout studies that have been carried out in the Netherlands (Francissen, Cohen, & Bosveld, 2011; Oberon, 2008; van Lieshout, 2003; Voncken et al., 2000). These qualitative studies all apply a retrospective analysis of the causes of dropout, by interviewing students after they had dropped out. By measuring students' personal conditions, educational attitudes, school engagement and performance prior to the occurrence of dropout, this dissertation sheds more light on the dynamics of the dropout process over time. The findings enhance the development of more differentiated dropout prevention policies, directed at different forms of dropout (Eimers, 2006; Scientific Council for Government Policy, 2008; Tinto, 1993).

Second, the comprehensive approach advances educational theory. With this dissertation, I take up the "tremendous challenge" (Janosz et al., 2000, p. 185) to combine multiple sources of influence from both inside and outside school into a more comprehensive model of dropout. The integration of existing theories that focus on either the social or academic contexts affecting students' educational attainment advances the current state of knowledge in research of dropout, school transitions, and school success in general (Pascarella & Terenzini, 2005). Furthermore, renowned dropout models, such as the theoretical frameworks developed by Finn (1989) and Tinto (1993), have been studied mainly in the context of, primarily Anglo-Saxon, secondary and higher education, with predominantly White middle class samples (Braxton, 2000; Fredricks et al., 2004; Guiffrida, 2006; Pascarella & Terenzini, 2005). This dissertation expands the existing body of research to other relevant, yet understudied, educational settings and student populations. It is the first study to rigorously apply school engagement theory to the context of SVE. Thus, this dissertation contributes to the understanding of universal and context-specific forces that shape educational processes worldwide.