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## **Chapter 2**

# **The effectiveness of career guidance in Dutch higher vocational education: a quantitative study**

## Abstract<sup>2</sup>

Almost without exception, the 34 countries of the Organisation for Economic Co-operation and Development, residing from North and South America to Europe and Asia-Pacific, have experienced substantial increases in participation in post-secondary education since the beginning of the 1990s. This influx of participants has been accompanied by change and diversification, which have created major challenges that career guidance services are ill-equipped to handle. Focusing on the broad trend in first-year student attrition of Dutch higher vocational education, this paper investigated the influence of career guidance on first-year student attrition of a Dutch University of Applied Sciences (UAS) that in 2006 introduced career guidance in its Bachelor programmes. Taking into account the challenges this UAS faced because of growing enrolment and declining level of preliminary education of new entrants, first-year institutional and system student attrition rates of this UAS (indicating students leaving this UAS and Dutch higher education respectively) were confronted in order to conclude whether career guidance pushed back first-year student attrition rates. As institutional student attrition rose from 2003 to 2008 and system student attrition remained relatively constant, our case study indicated that career guidance helped first-year students, not by preventing them from leaving the institution, but by preventing them from leaving the Dutch higher educational system.

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2 This chapter was submitted as: Te Wierik, M. L. J., J. J. Beishuizen, W. van Os, and J. Schoonenboom (submitted). The effectiveness of career guidance in Dutch higher vocational education: a quantitative study.

## Introduction

The issue of retention and overcoming high attrition rates in higher education has been a worldwide concern for decades. The scale on which students drop out varies from country to country, in particular among countries of the Organisation for Economic Co-operation and Development (OECD). Established in 1960 when 18 European countries plus the United States and Canada joined forces to create an organisation dedicated to economic development, currently 34 OECD countries from North and South America to Europe and Asia-Pacific include many of the world's most advanced countries, but also emerging countries like Mexico, Chile and Turkey. Recently, an OECD survey revealed that graduation rates for Bachelor's degree programmes in 2009 averaged 38% among OECD countries (OECD 2011). This is to say, more than 50% of all entrants graduate in, for instance, Australia and New Zealand and less than 20% in, for example, Argentina and Belgium. In the Netherlands, around 30% of first-year students of Dutch universities of applied sciences leave or switch during or by the end of their first year (Dutch Education Council 2008). Based on the attrition rate for 2005 (i.e. 31% corresponding to 89.000 first-year students leaving higher vocational education), the Dutch Education Council estimated the corresponding average costs of public finance as €180 million (excluding costs of tuition fees and maintenance award) (Dutch Education Council 2008). Furthermore, if young people choose the wrong career path early in their lives the costs of changing later are high, both for the individual and the educational system (OECD 2009). Focusing on the broad trend in first-year student attrition of nine entry cohorts from 2000 to 2008, this paper investigates the influence of career guidance on first-year student attrition of a Dutch University of Applied Sciences (UAS) that in 2006 introduced career guidance in its Bachelor programmes. Taking into account the challenges this UAS faced because of growing enrolment and declining level of preliminary education of new entrants, first-year institutional and system student attrition rates of this UAS (indicating students leaving this UAS and Dutch higher education respectively) are confronted in order to conclude whether career guidance pushes back first-year student attrition rates.

### ***Career guidance as a means to push back student attrition***

Because of the important role of career guidance in addressing the needs of students at risk and early school leavers (OECD 2004a), public policies on career guidance and counselling are receiving increased recognition and support within developed countries (Watts and Fretwell 2004). This paper refers to career guidance rather than career counselling, "which is more common in the United States and Canada" (Lundahl and Nilsson 2009, p. 28). According to the OECD, the European

Commission as well as the World Bank, career guidance refers to “services and activities intended to assist individuals, of any age and at any point throughout their lives, to make educational, training and occupational choices and to manage their careers” (OECD 2004b, p. 10). While personal interviews are still the dominant tool, career guidance includes a wide range of other services, like group discussions, printed and electronic information, vocational courses, structured experience, telephone advice and on-line help (OECD 2004a, p. 19).

The potential effects of career guidance can be thought of at the individual, organisational and societal level (OECD 2004a, p. 33). At the *individual* level, “potential benefits could result from people being better able to manage their choices of learning and work, and to maximise their potential”. At the *organisational* level, “potential benefits could flow to education and training providers if learners were assisted to identify and enter learning programmes which meet their needs and aspirations”. Finally, benefits could result at the *societal* level “if career guidance leads to greater efficiency in the allocation of human resources, for example by enhancing the motivation of learners and workers or reducing dropouts from education and training”.

### ***Main policy issues concerning career guidance in OECD countries***

Almost without exception, OECD countries have experienced substantial increases in participation in tertiary education since the beginning of the 1990s (OECD 2004a). Following Salmi and Hauptman (2005), this paper adopted the OECD definition of tertiary education as “a level or stage of studies beyond secondary education. Such studies are undertaken in tertiary education institutions, such as public and private universities, colleges, and polytechnics, and also in a wide range of other settings, such as secondary schools, work sites, and via free-standing information technology-based offerings and a host of public and private entities” (Salmi and Hauptman 2005, p. 80). Between 1995 and 1999 alone, enrolments rates of tertiary education grew by an average of 23% across the OECD (OECD 2001). This increased influx of participants has been accompanied by change and diversification, which have created major challenges for career guidance (OECD 2004a). As institutions become more differentiated, as the number of institutions and Bachelor programmes to choose from increases, and as Bachelor programmes become more differentiated in content between institutions, the need for information and advice increases to help people decide what and where to study. This calls for a comprehensive approach, which career guidance services in many countries’ tertiary education systems are ill-equipped to handle (OECD 2004a). Furthermore, the extent to which tertiary education institutions currently

provide career guidance services varies considerably both between and within OECD countries. On the one hand, some institutions have an integrated student services model which includes career guidance among a range of other student services. On the other hand, some institutions have separate specialised career services which offer a variety of career guidance and placement services (OECD 2004a). The service organises career days that enable students to make contact with employers to discuss post-graduation employment and runs personal development programmes to help develop employability skills. Students can have access to psychological testing to assist their career-decision making. Separate specialised career services are well established in Ireland and the United Kingdom, and to a lesser extent in Australia and (as our study will show further on) in Dutch higher vocational education.

In addition, “the focus of existing career services in tertiary education is frequently narrow, often concentrating on personal or study guidance” (OECD 2004b, p. 20). In the past, little attention was paid to career development and choice, including helping students to develop career management and entrepreneurial skills and to consider taking up self-employment options (OECD 2004b). More recently, there is growing recognition in various countries (e.g. Australia, Canada, Korea, the Netherlands, the United Kingdom and Spain) of the need for tertiary institutions to develop employability and career-management skills in their students. A number of institutions have introduced a portfolio system, which can require students to record not only what they are learning, but also the work-related competencies they are acquiring through learning it (OECD 2004a).

Finally, the specific career guidance needs of particular groups of students are often not catered for (OECD 2004b). In this paper, we focused on students who are dropping out and who are switching to other institutions. As indicated by the OECD (2009), students will rely on informal sources, such as family and friends, if formal sources of career guidance are not available. “While such sources have their strengths, they may lack reliability and impartiality or confine choices to the known and familiar rather than opening new horizons. Moreover, insufficient information at the critical moment may undermine motivation and cause students to drop out. High quality professional career guidance, well-supported by labour market data, is in this respect indispensable” (OECD 2009, p. 94).

### ***Former research on student attrition and the benefits of career guidance***

Although various theoretical perspectives – economic, organisational, psychological, sociological – have been advanced to account for the phenomenon of student attrition, Tinto's interactionist theory of college student attrition enjoys near-paradigmatic status (Braxton et al. 2000). Grounded in Van Gennep's (1960) anthropological model of cultural rites of passage, Tinto (1993) postulates that when entering college, students first must *separate* from the group with which they were formerly associated, such as family members and high school peers, then undergo a period of *transition* during which they start to interact in new ways with the members of the new group into which membership is sought and finally *incorporate* or adopt the normative values and behaviours of the new group or college.

The central concept of the Tinto model is the level of a student's integration into the social and academic systems of the college, which determines persistence or dropout. Students come to a particular institution with a range of background characteristics (e.g. secondary school experiences, academic aptitude, family background). These lead to initial commitments, both to the institution attended and to the goal of graduation from college. Together with background characteristics, these initial commitments influence not only how well the student will perform in college, but also how he or she will interact with, and subsequently become integrated into, the institution's social and academic systems. The higher the degree of integration of the individual into these systems, the greater the commitment will be to the specific institution and to the goal of college completion leading to persistence.

Concerning career guidance, Tinto (1993) argues that the utilisation of counselling and advising programmes during the student career underlines the fact that not all students enter college with clear goals. For that reason, institutions have allocated many resources to advising and counselling programmes intended to help guide individuals along the path of goal clarification. According to Tinto, these programmes tend to be most effective when advising and counselling is required for students and when these programmes are systematically linked to the other student services and programmes on campus. The effectiveness "is further enhanced when they are an integral and positive part of the educational process which all students are expected to experience" (Tinto 1993, p. 172).

Despite the generally acknowledged importance of Tinto's (1993) model of student attrition, its obtained empirical support is rather modest (Kuh et al. 2006). According to Barefoot (2004, p. 11), Tinto's theory has been "the subject of much revision and various debates that revolve around: (a) which element - social integration or academic integration - is more important for what types of students; (b) whether Tinto's model actually includes all the variables needed to understand student dropout, especially for non-traditional students; or (c) whether today's students should be expected to achieve Tinto's three stages of a successful higher education career - separation, transition, and incorporation". For example, by empirically and conceptually assessing Tinto's theory in 1997, Braxton, Sullivan and Johnson focused on the degree of support for the 13 primary propositions postulated in Tinto's 1975 foundational theory. Empirical tests robustly support only 5 of the primary 13 propositions (Braxton et al. 2000). To further enhance the relevance of his model, Tinto (2012) extended his model in 2012 offering "a framework for organizing institutional policies and practices that the research on educational attainment and his experience with different types of colleges and universities suggest can positively influence student persistence and degree attainment" (Kuh 2013, p. 339).

In the Netherlands, Klip (1970) and Israëls (1983) both questioned the effectiveness of career guidance in Dutch higher education of the sixties. Based on an experimental research design, Klip (1970) concluded in his PhD thesis that a group of first-year students (N = 60), guided during their first year by peers, did not yield significantly better study results compared to a group of non-guided students (N = 58). Israëls (1983) elaborated on Klip's results by arguing that perceptions of guided students do not naturally imply career guidance to be effective. Furthermore, Israëls (1983) concluded that the results of Klip's experimental research hugely contradicted public opinion regarding career guidance in those days. Some years later, Prins (1997) concluded in his dissertation that career guidance had any influence on the dropout decision of students. In particular, both social and academic integration turned out to have a mediating influence on student dropout in case of faculties that offered a lot of career guidance. However, both social and academic integration could not explain student dropout of faculties that offered little career guidance. At these faculties, a lack of self-confidence and the absence of a propaedeutic diploma particularly explained student dropout. More recently, Zijlstra and Meijers (2008) once again question the effectiveness of career guidance and conclude that it enhances personal development for only those students who comparatively spend more weekly hours on their courses. In addition, Mittendorff (2008) investigated the perceptions of teachers, career counsellors and students on portfolios and

personal development plans for career development at two vocational schools and one prevocational school. The results suggested that these instruments are perceived to be useful when used in a dialogical context (Mittendorff et al. 2008). Furthermore, Van Onzenoort (2010) investigated in his thesis which factors at a medium-sized university of vocational education played a role in the decision to leave the course or to stay on. His research paid special attention to the study selection process and was grounded on Tinto's (1987) model of student departure. Among others, Van Onzenoort (2010, p. 234) concluded that "students who do not dropout have asked persons for their advice more often than dropouts have. In many cases this has been the student counsellor and/or the parents". Finally, Kuijpers, Meijers and Gundy (2011) conducted research among students (aged 12–19 years) enrolled in prevocational and secondary vocational education in the Netherlands and concluded that, without a dialogue with the student about concrete experiences and which is focused on the future, career guidance methods and instruments barely contribute to the acquisition of career competencies.

In sum, the effectiveness of career guidance in Dutch higher vocational education currently is still far from unequivocal. Therefore, research is needed to further explore the effects of career guidance in Dutch higher vocational education, for the benefit of both students and educational institutions as well as society.

### ***Windesheim University of Applied Sciences***

Based on the evaluative research so far, "the robustness of data which purports to show a causal link between career guidance and increases in rates of retention and achievement on education or training courses is debatable" (Maguire and Killeen 2003, p. 15). Therefore, this case study particularly focused on the effectiveness of career guidance in terms of student attrition and investigated career guidance within the context of Dutch competence-based higher vocational education.

In an attempt to push back attrition rates, a growing number of universities of applied sciences in the Netherlands are currently implementing new career guidance practices in their competence-based approaches to learning. One of these universities is Windesheim University of Applied Sciences (UAS) in Zwolle, the Netherlands. Based on 21,167 enrolments in the academic year 2010/2011, Windesheim UAS is the ninth largest of thirty-nine universities of applied sciences in the Netherlands (Netherlands Association of Universities of Applied Sciences 2011). Staffed in 2011 with approximately 1,900 employees, Windesheim UAS offers 59 Bachelor's degree programmes, 4 Master's degree programmes and 12 associate degree programmes in ten different faculties.

As a result of the 1999 Bologna Declaration on the European Higher Education Area, Windesheim UAS implemented new educational standards in 2006, to build the new Bachelor-Master structure upon (Windesheim University of Applied Sciences 2005b) and in addition to facilitate students to direct their own learning process by setting up personal learning goals. Based on these new educational standards, the main changes beginning September 2006 included a stronger ‘work-field orientation’, a more applicative and multidisciplinary nature of the curriculum and a stronger orientation towards practice-based research. Regarding the guidance and counselling of students, the emphasis moved from supporting those students who fell short of expectations or even threatened to drop out to guiding all students to design and direct their own learning career and preserving them from dropout. From 2006 onwards, all students of Windesheim UAS acquired an extra, eleventh competence called ‘vocational career self-management’ (Windesheim University of Applied Sciences 2005a) that was added to the generic ten core competences of competence-based Dutch higher vocational education (Commissie Accreditatie Hoger Onderwijs 2001). To acquire this competence, students annually enrolled in a four-credits vocational career guidance course that aimed to provide students all necessary skills and attitude to self-manage their student career on Bachelor’s level. Prescribed by faculty, the course was offered as a mix of individual, peer group as well as class guidance. As a result, both the yearly amount of time spent at class versus individual guidance and the size of the peer group varied per faculty. The main result of this course was the portfolio, in which the student had to prove the disposal of the eleventh competence. At the end of the first year, assessment of vocational career guidance resulted in a vocational career guidance grade point and in a (for all students equal) amount of four credits when passed.

By introducing career guidance, Windesheim UAS expected attrition rates to decline beginning 2007 by at least 15% per year (Windesheim University of Applied Sciences 2007a). Following the OECD (2004a), Windesheim UAS recognised the need for tertiary institutions to develop employability and career-management skills in their students.

### ***Challenges faced by Windesheim UAS as a Dutch university of applied sciences***

This study investigated the effectiveness of career guidance in terms of pushing back attrition rates, elaborating upon Tinto’s (1993) model of student attrition. As this model is derived from the situation of higher education in the US in which most students reside on campus, it stresses the impact of both academic and social integration on student persistence. However, most Dutch higher educational

students live off-campus. Therefore, students' social lives in the Netherlands occur to a great extent outside the educational institution. As a consequence, social integration is expected to play a considerably different role in Dutch student attrition compared to the US situation. In sum, Tinto's implications for the Dutch situation of higher vocational education should be considered carefully.

Moreover, Dutch admission and selection policies in higher education differ from the US. First of all, Dutch higher vocational education institutions offer open access, so students have the freedom to choose their own institution and Bachelor programme in Dutch higher vocational education. In addition, since 1993 Dutch institutions of higher vocational education have been allowed to dismiss students at the end of their first year by virtue of a so-called *binding study advice*. Institutions that use this academic dismissal policy impose a binding study advice to students who are considered unfit for their Bachelor programme because of unsatisfactory progress in their first year, taking into consideration personal circumstances causing delay. As a consequence, the institution may withdraw a student's enrolment in that particular Bachelor programme in which the binding study advice was imposed and consequently obliges this student to leave that Bachelor programme. Research shows that binding study advice is currently almost universally adopted in Dutch higher vocational education. In 2008, 98% of all Bachelor programmes in Dutch higher vocational education enforced a binding study advice (Dutch Inspectorate of Education 2010).

The policy of free choice of enrolment as stated above, together with public policy decisions for widening access to encourage more students to start higher education (i.e. lifelong learning), not only have raised concern about maintaining standards (Rickinson and Rutherford 1995) but also presumably involve admitting more students with relatively weak levels of academic attainment prior to university (Arulampalam et al. 2005). Consequently, for the time being concerns about attrition might be taking a back seat, because the most pressing problem of the educational institutions is providing classroom space and basic services to an influx of entering students (Barefoot 2004). This tremendous growth of enrolment was also encountered at Windesheim UAS during the last decade, as enrolments grew from 2,826 students in case of cohort 2000 to 4,848 students in case of cohort 2008. In particular, this growth set in markedly of the year 2003 and mainly concerned students from higher secondary general education and from secondary vocational education, as enrolment of the other preliminary education levels remained relatively constant. Because growing numbers of enrolment in general mean an increase in less-prepared students (Center for Higher Education

Policy Studies 2008), the increased influx of students might lead to an increase in attrition rates of Windesheim UAS. As attrition rates of first-year students from secondary vocational education in the Netherlands are considerably higher compared to students from higher general secondary education and from pre-university education (Netherlands Association of Universities of Applied Sciences 2009), this increase will be enhanced by one third of the influx of Windesheim UAS being students originating from lower-level secondary vocational education. As the level of preliminary education of new entrants determines to a considerable extent the probability that students in higher vocational education will complete their studies successfully, the Netherlands Association of Universities of Applied Sciences points out a so-called *trilemma* as an urgent challenge facing universities of applied sciences: not only the level of the Bachelor's programmes should be upgraded, but at the same time the level of preliminary education of new entrants is under pressure and completion rates have to be improved (Netherlands Association of Universities of Applied Sciences 2009). Our research has been conducted within a time frame where Windesheim UAS both faces this influx of students as well as this trilemma.

### ***Research aim and questions***

This study provides a first description of what happened to first-year student attrition when Windesheim UAS introduced career guidance in its Bachelor programmes, taking into account the challenges Windesheim UAS faced because of growing enrolment and declining level of preliminary education of new entrants. The aim was to establish the influence of career guidance on first-year student attrition of Windesheim UAS. Research questions were as follows:

- Does career guidance push back first-year attrition rates of Windesheim UAS?
- How can we explain the influence of career guidance on first-year student attrition of Windesheim UAS, given other known influences on student attrition such as growth of enrolment, binding study advice, gender, preliminary education and switching behaviour of students?

## Method

### *Participants*

Obtained from the student administration offices, our data set contained approximately 31,500 individual records from the entire population of full-time students of nine entry cohorts between 2000 (academic year 2000/01) and 2008 (academic year 2008/09). Each record contained the following individual student characteristics: birth date, gender, preliminary education, faculty, Bachelor programme, student number, cohort, date of deregistration and reason for deregistration. Our research concerned first-year students in particular, as around 30% of first-year students at Dutch universities of applied sciences drop out or switch Bachelor programmes during or at the end of the first year (Dutch Education Council 2008). In addition, we excluded both distance education students and students who switched to another Bachelor programme at Windesheim UAS. Distance education students were excluded, because the literature of student attrition in distance education suggests that studies tend to report tentative and contextualized conclusions and are surrounded by great variance and uncertainty (Nichols 2010). Finally, we excluded students that switched Bachelor programmes within Windesheim UAS because of the following. In exploring student attrition, an important distinction must be made between institutional and system attrition, as the former refers to the attrition of persons from individual institutions of higher education, whereas the latter refers to the attrition from the wider higher educational system. Frequently, institutional attrition results in the migration of persons to other institutions. From an institution's point of view, a student who transfers to another institution is a non-completer. However, the student may still progress to a degree without any loss of time. Viewed from the perspective of the higher education system as a whole, it would be inappropriate to count such a student as a non-completer (Yorke 1999). As our case study particularly investigated student attrition from Windesheim UAS, we focused on institutional attrition. At this level, students not only migrate to other institutions but can also switch to a different Bachelor programme within Windesheim UAS. As our research focused on the effects of career guidance on first-year student attrition, students that switched between Bachelor programmes within Windesheim UAS have already been guided during their previous year of study and therefore were excluded from our data set.

### *Materials*

Of September 2006, every enrolled student of Windesheim UAS has been guided to learn to reflect on his or her own strengths and weaknesses, and to direct his or her own learning process by setting up personal learning goals. This guidance

is offered by a small professional staff together with specially assigned faculty and is a comprehensive system which spans the entire four years of student life from admissions to graduation. This guidance can be seen as integral career guidance in which several instruments for guidance, such as the intake procedure, personal development plan, assessments, reports that demonstrate student reflection and the portfolio, have been assimilated. Of central importance is the portfolio, in which all the information derived from the other instruments and activities come together. As such, career guidance of Windesheim UAS follows Tinto's (1993) recommendations for programmes of advising and counselling to be required for all students, to be systematically linked to the other student services and programmes and to be an integral part of the educational process. As provided by instructors who have an extra task in career guidance for which specific time is assigned, instructors are made directly responsible for the supervision and assessment of students.

Reviewing the introduction of career guidance at Windesheim UAS of September 2006, the first experiences of both students and instructors were mixed. Although all ten faculties of Windesheim UAS a year after the introduction indeed offered their students the prescribed amount of guidance and used the various instruments for guidance, first-year students were not always convinced of the effectiveness of career guidance and of the ways in which it had contributed to their study progress. A satisfaction survey among students of Windesheim UAS in 2007 showed that less than 50% of the respondents valued the quality of career guidance as adequate. In addition, students would have liked to have had more individual reflection during their first year, in particular with respect to their study progress (Windesheim University of Applied Sciences 2007b).

### ***Data analysis***

First, we investigated trends in first-year student attrition. Differences between cohorts were analysed using logistic regression, in which attrition was regressed on cohort as a dummy variable. 2005 was chosen as the reference category for two reasons: it was the year before career guidance was implemented in most faculties and its attrition rate was very near to the overall mean attrition rate.

Secondly, the influence of career guidance and the other factors of the research questions on attrition was investigated using logistic regression. Cohort and growth of enrolment (i.e. cohort size) were treated as continuous variables. We defined continuous variable age as age at the moment of enrolment. Categorical variables were attrition rate, career guidance, gender, preliminary education and faculty.

Preliminary education defined as 'other' included students, whose admission is based upon a former first-year or final certificate of Dutch higher education and students, aged 21 or over, who passed a special entrance examination. For all categorical variables, dummy variables were created, using the most frequent category (preliminary education) or the category with a mean attrition rate closest to the overall mean (faculty) as the reference category. Because this analysis did not reckon with clustering within cohorts, it was to be expected that the standard errors would be deflated. To correct for this, the p-value for significance was set to .01.

In preparing the data for the regression analysis, we discovered a few cases of multicollinearity. These cases and their consequences for the interpretation and the analysis will be discussed below.

The initial model contained attrition rate as the dependent variable and all other variables except for cohort and cohort size as independent variables. Subsequent models were created by removing non-significant parameters on a one-by-one basis, starting with the least significant parameter. This process was repeated until all remaining parameters were significant at the .01 level, which constituted the final model.

Finally, we completed our analysis by further investigating the influence of growth of enrolment, binding study advice, preliminary education and switching behaviour of students, using time-series analysis in SPSS.

## Results

Student attrition figures of Windesheim UAS have changed remarkably over the last decade. Figure 1 reveals the broad trend in student attrition rates of the cohorts 2000 to 2008.

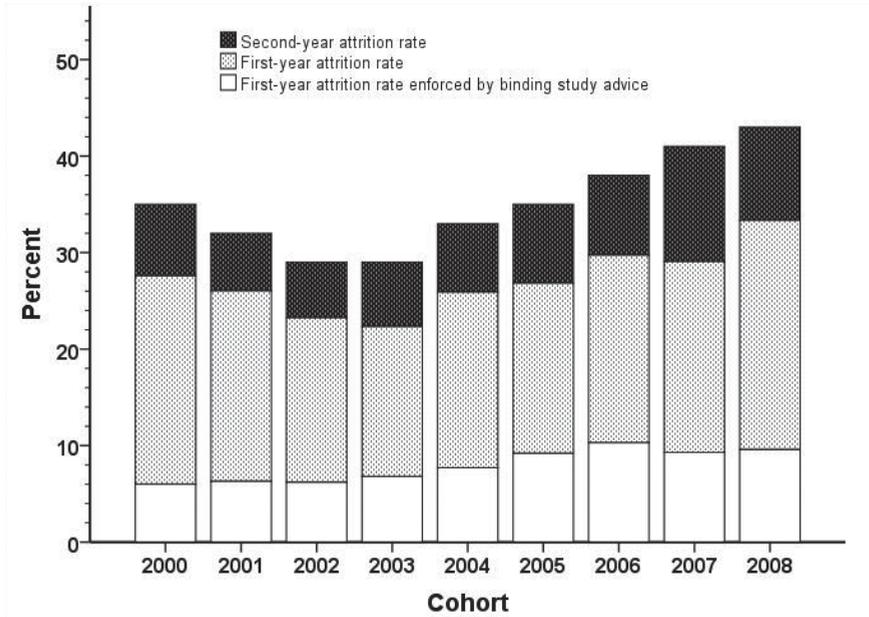


Figure 1. Student attrition rates of Windesheim UAS, cohort 2000-2008.

As Figure 1 shows, years 2000, 2004 and 2005 have similar rates of first-year attrition. 2001 shows a slightly lower attrition rate, whereas both 2002 and 2003 display a significantly lower attrition rate. From 2006 to 2008, a significantly higher attrition rate is apparent. This overall picture represented by Figure 1 is statistically confirmed by our logistic regression analysis as shown in Table 1.

**Table 1. Logistic regression analysis of first-year attrition of Windesheim UAS, cohort 2000-2008.**

Cohort	b	SE b	Wald's $\chi^2$	df	p	e <sup>b</sup> (odds ratio)
2000	0.04	0.06	0.47	1	.49	1.04
2001	-0.04	0.06	0.52	1	.47	0.96
2002	-0.19	0.06	10.84	1	.00	0.83
2003	-0.24	0.06	18.32	1	.00	0.78
2004	-0.05	0.06	0.77	1	.38	0.95
2005	-	-	172.36	8	.00	-
2006	0.14	0.05	7.65	1	.01	1.15
2007	0.11	0.05	4.80	1	.03	1.12
2008	0.31	0.05	40.84	1	.00	1.36

Note. Cox and Snell  $R^2 = .005$ . Nagelkerke  $R^2 = .008$ .

The subsequent analyses concern the influence of career guidance and the other factors on the first-year institutional attrition rate (i.e. growth of enrolment, binding study advice, gender, preliminary education and switching behaviour of students). In preparing the data for the regression analysis, we discovered three cases of multicollinearity (see Table 2).

**Table 2. Correlations between career guidance, cohort and cohort size of Windesheim UAS, cohort 2000-2008.**

		Career guidance	Cohort	Cohort size
Cohort	r	.85		
	n	(9)		
	p	.00		
Cohort size	r	.88	.95	
	n	(9)	(9)	
	p	.00	.00	

Note. Correlation coefficient 'r' with respective number of cases (n) and two-tailed testing of significant differences (p).

As Table 2 shows, correlation coefficients between career guidance, cohort and cohort size indicate multicollinearity. In the presence of multicollinearity, the estimate of a predictor's impact on the dependent variable, while controlling for the other predictors, tends to be less precise than if predictors were uncorrelated with one another. As a consequence, each individual influence of career guidance, cohort and cohort size upon student attrition is in our model statistically unfeasible to distinguish. This means that in trying to establish the influence of career guidance upon student attrition, we might not be able to assess whether this influence is caused by career guidance, caused by a trend in cohort size or caused by a trend in time (i.e. cohort). Nevertheless, it is valuable to use our data set in order to further investigate the influence of career guidance on student attrition of Windesheim UAS, as this data set still enables us to enrich our knowledge of feasible influences on first-year student attrition of Windesheim UAS. We therefore performed a logistic regression analysis of our model as presented in Table 3.

**Table 3. Logistic regression analysis of first-year attrition of Windesheim UAS, cohort 2000-2008.**

Predictor	b	SE b	Wald's $\chi^2$	df	p	e <sup>b</sup> (odds ratio)
Career guidance	0.25	0.03	91.09	1	.00	1.28
Gender	0.41	0.03	213.67	1	.00	1.51
Age	0.02	0.01	10.41	1	.00	1.02
VWO	-0.59	0.05	120.31	1	.00	0.56
Other	-0.28	0.06	24.26	1	.00	0.76
FE	0.21	0.04	32.47	1	.00	1.23
FED	-0.26	0.05	22.95	1	.00	0.77
FHMS	-0.77	0.06	187.45	1	.00	0.47
FML	0.21	0.05	19.89	1	.00	1.24
FSW	0.12	0.04	9.32	1	.00	1.13
Constant	-1.52	0.09	279.99	1	.00	0.22

*Note.* Cox and Snell  $R^2$  = .025. Nagelkerke  $R^2$  = .037. VWO = pre-university education. FE = faculty of Education. FED = faculty of Engineering & Design. FHMS = faculty of Human Movement & Sports. FML = faculty of Management & Law. FSW = faculty of Social Work.

Although our model has limited explanatory power, Table 3 shows some interesting findings. Having a significant positive  $b$  coefficient, career guidance obviously enhances first-year student attrition of Windesheim UAS. In addition, male students (coded as 1) more often leave during their first year compared to female students. Finally, certain faculties show a significantly higher or lower attrition rate compared to the other faculties.

### ***Other known influences of student attrition***

When leaving Windesheim UAS, students not only leave college but also switch to a different educational institution. Consequently, the switching behaviour of students is an important variable to focus upon while disentangling the enhancing influence of career guidance on first-year student attrition of Windesheim UAS. This focus can be applied by taking the system attrition of Windesheim UAS into account, which contains only the attrition rate of students from Windesheim UAS who left the Dutch higher educational system and leaves aside the attrition of students from Windesheim UAS who switched to another institution of higher education. Therefore, Figure 2 compares the first-year institutional attrition rates of Windesheim UAS from 2000 to 2008 (as previously presented in Figure 1) to the first-year system attrition rates of Windesheim UAS from 2000 to 2008 (as collected by the Netherlands Association of Universities of Applied Sciences).

As Figure 2 shows, after a few years of decline the institutional attrition rate of Windesheim UAS almost continuously increases from 2003, while the system attrition rate remains relatively constant from 2000 to 2008. Evidently, more and more first-year students left Windesheim UAS from 2000 to 2008 by switching to another Dutch institution of higher education, but did not leave the Dutch higher educational system.

Because switching behaviour of students obviously has gained significance over the past years, an important supplementary question is to what extent this switching behaviour is fostered by the educational institution (i.e. Windesheim UAS). Therefore, Figure 1 compares the first-year attrition rates from 2000 to 2008 to the first-year attrition rates from 2000 to 2008 enforced by binding study advice. As shown, first-year student attrition enforced by a binding study advice slightly increases from 2000 to 2006 and stabilizes from 2007. Consequently, the increased switching behaviour of students turns out not to be clearly fostered by the imposition of binding study advice.

As an increasing number of first-year students left Windesheim UAS from 2000 to 2008, fewer students consequently entered their second year of study. Because smaller classes make it easier for faculty to know students by name, for students to know their peers, and for students to participate actively in classes (Kuh et al. 2006), the switching behaviour of first-year students is expected to influence second-year student attrition. Therefore, Figure 1 compares the first-year attrition rates of Windesheim UAS from 2000 to 2008 to the second-year attrition rates during the same period of time. As is shown, both first-year and second-year attrition show a similar course from 2000 to 2008, in the sense that attrition rates decline from 2000 to 2003 and increase from 2004 to 2008 (except an incidental small decline of first-year attrition in 2007). Consequently, second-year student attrition of Windesheim UAS turns out not to be influenced by an increase of first-year student attrition due to the switching behaviour of first-year students.

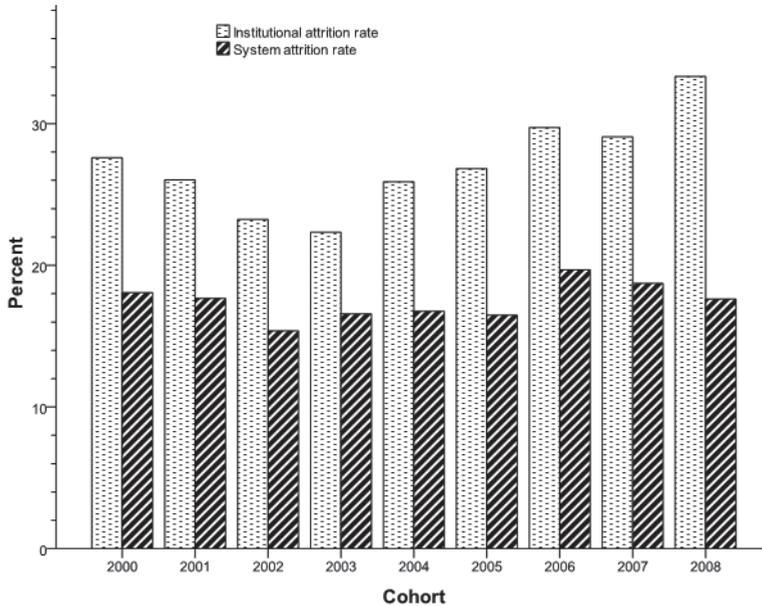


Figure 2. First-year institutional and system attrition rates of Windesheim UAS, cohort 2000-2008.

## Discussion

Based on the data presented in this study, we have found no unequivocal evidence that career guidance pushes back first-year student attrition of Windesheim UAS. Founded on Tinto (1993), we initially expected the integral career guidance system of Windesheim UAS to guide students along the path of goal clarification and to prevent them from leaving Windesheim UAS. However, issues appear more complex: from 2000 to 2008, (a) Windesheim UAS faced an influx of students and (b) an increasing number of first-year students left Windesheim UAS by switching to another Dutch institution of higher education without leaving the Dutch higher educational system. Based on the system attrition rate of Windesheim UAS remaining relatively constant, career guidance obviously helped first-year students of Windesheim UAS, not by preventing them from leaving Windesheim UAS but by preventing them from leaving the Dutch higher educational system. However, at the same time the introduction of career guidance showed to be less successful as Windesheim UAS had hoped.

The causes of this entangled state of flux at Windesheim UAS can be twofold. Growth of enrolment turns out to be an important cause of first-year student attrition, as institutional size is often shown to be inversely related to student persistence and degree completion (Kuh et al. 2006). Therefore, the ongoing influx of students could have enhanced first-year student attrition of Windesheim UAS. Moreover, career guidance turns out to be an important cause of first-year student attrition as well, because the extent to which students reflect on their strengths and weaknesses is positively related to student attrition (Kuijpers and Meijers 2008). Consequently, career guidance could have enhanced first-year student attrition of Windesheim UAS.

What do our results imply with respect to theory, policy and practice of career guidance in higher vocational education? First, our study shows from a theoretical perspective, that further research is needed to examine Tinto's (1993) implications for the Dutch situation of higher vocational education. As our results indicate, the integral career guidance system of Windesheim UAS helped first-year students, not by preventing them from leaving the institution, but by preventing them from leaving the Dutch higher educational system. As more and more first-year students left Windesheim UAS from 2000 to 2008 by switching to another Dutch institution of higher education but did not leave the Dutch higher educational system, social integration might indeed play a different role in Dutch student attrition compared to the US situation. Therefore, further research is needed to examine the way career

guidance is influencing first-year student attrition of Windesheim UAS. Second, we have to be careful to fully attribute the results of this study to career guidance because of possible alternative explanations. In particular, the implementation of the Bachelor-Master structure in 2006 could have entailed curricular changes that coincidentally increased first-year student attrition of Windesheim UAS as well. To control for this coincidence, we additionally checked the accreditation reports of the faculties of Business & Economics, Information Sciences and Social Work (in particular the first report per faculty that was published after 2006) for overall changes in the final attainment level that were linked to the implementation of the Bachelor-Master structure in 2006. These three faculties were selected because they were further investigated in a research project. However, we found no particular indications of changes in the final attainment level of these faculties because of curricular changes that could be linked to the implementation of the Bachelor-Master structure in 2006. These results strengthened our conclusion that career guidance helped first-year students of Windesheim UAS. Third, policy implications of our study concern the specific career guidance needs that are currently often not catered for, in particular the needs of students who are dropping out or switching their Bachelor programmes (OECD 2004b). Following Van Onzenoort (2010), these specific career guidance needs in Dutch higher vocational education can be twofold. First of all, higher vocational education institutions should enable first-year students to assess whether they have actually chosen the right discipline. In case this assessment is negative, institutions should consider broader-based foundation courses in higher vocational education, enabling first-year student to switch during the first six months without having to start all over again (Van Onzenoort 2010). Furthermore, institutions have to constantly monitor the careers of their students, as too many students perform well but, often unexpectedly, decide to leave college. As a part of that, “the student should be informed about his or her results at regular intervals and, if necessary, his or her shortcomings should be clearly pointed out” (Van Onzenoort 2010, p. 241). Finally, our study has some practical implications as well. As discussed before, the benefits of career guidance highly depend on a dialogue with the student about concrete experiences and which is focused on the future. In practice however, Dutch students in higher vocational education most of the time talk about their own study career with their peers, while similar discussions with their career guidance instructors only take place one to four times per year (Kuijpers and Meijers 2008). More importantly, the career guidance instructor mainly determines the content of the career guidance session instead of the students themselves. To help students being better able to manage their choices of learning and to maximize their potential (OECD 2004a), we therefore recommend career guidance instructors to foster a frequent and student-

oriented career guidance dialogue. As a part of this dialogue, career guidance should stimulate higher education students to closely consider their student career, including the option to switch to another higher education institution. Even if a student ultimately decides to switch to a different institution expecting a better programmatic or institutional match, this can be the best possible procedure for both the student and the higher education institution involved.

## References

- Arulampalam, W., Naylor, R. A., & Smith, J. P. (2005). Effects of in-class variation and student rank on the probability of withdrawal: cross-section and time-series analysis for UK university students. *Economics of Education Review*, 24(3), 251-262.
- Barefoot, B. O. (2004). Higher education's revolving door: confronting the problem of student drop out in US colleges and universities. *Open Learning: The Journal of Open and Distance Learning*, 19(1), 9 - 18.
- Braxton, J. M., Milem, J. F., & Sullivan, A. S. (2000). The influence of active learning on the college student departure process: Toward a revision of Tinto's theory. *The Journal of Higher Education*, 71(5), 569-590.
- Center for Higher Education Policy Studies (2008). New Degrees in the Netherlands: Evaluation of the Bachelor-Master Structure and Accreditation in Dutch Higher Education. Final Report.
- Commissie Accreditatie Hoger Onderwijs (2001). Prikkelen Presteren Profileren [To Stimulate, Achieve, Make known]. *Final Report*.
- Dutch Education Council (2008). A successful start in higher education. The Hague, the Netherlands.
- Dutch Inspectorate of Education (2010). Met beide benen op de grond: Onderzoek naar de uitvoeringspraktijk van het bindend studieadvies in het hoger onderwijs [One's feet firmly on the ground: research on the execution of binding study advice in higher education].
- Israëls, H. (1983). *Helpt' studentenbegeleiding? [Does student counselling 'help?]* (Vol. 26, Bureau Onderzoek van Onderwijs Rijksuniversiteit Leiden).
- Klip, E. C. (1970). *Studiebegeleiding aan eerstejaarsstudenten [Study-tutoring to first year students]*. PhD thesis, Rijksuniversiteit Utrecht, the Netherlands.
- Kuh, G. D. (2013). Completing College: Rethinking Institutional Action by Vincent Tinto (review). *Journal of College Student Development*, 54(3), 339-341, doi:https://doi.org/10.1353/csd.2013.0046.
- Kuh, G. D., Kinzie, J., Buckley, J., Bridges, B., & Hayek, J. (2006). What matters to student success: a review of the literature. Commissioned Report for the National Symposium on Postsecondary Student Success.
- Kuijpers, M., & Meijers, F. (2008). Loopbaanleren en -begeleiden in het HBO [Career learning and career guiding in higher vocational education]. 's-Gravenhage, the Netherlands.
- Kuijpers, M., Meijers, F., & Gundy, C. (2011). The relationship between learning environment and career competencies of students in vocational education. *Journal of Vocational Behavior*, 78(1), 21-30, doi:10.1016/j.jvb.2010.05.005.
- Lundahl, L., & Nilsson, G. (2009). Architects of their own future? Swedish career guidance policies. *British Journal of Guidance & Counselling*, 37(1), 27 - 38.
- Maguire, M., & Killeen, J. (2003). *Outcomes from career information and guidance services*. Paper presented at the OECD Career Guidance Policy Review, Paris.
- Mittendorff, K., Jochems, W., Meijers, F., & den Brok, P. (2008). Differences and similarities in the use of the portfolio and personal development plan for career guidance in various vocational schools in the Netherlands. *Journal of vocational education & training*, 60(1), 75-91.
- Netherlands Association of Universities of Applied Sciences (2009). Dedicated to quality. The Hague.
- Netherlands Association of Universities of Applied Sciences (2011). Feiten en cijfers 2010: studentenaantallen in het hoger beroepsonderwijs [Facts and figures 2010: student numbers in higher vocational education]. The Hague.
- Nichols, M. (2010). Student perceptions of support services and the influence of targeted interventions on retention in distance education. *Distance Education*, 31(1), 93 - 113.
- Organisation for Economic Co-operation and Development (2001). Education at a Glance 2001: OECD Indicators. OECD Publishing.
- Organisation for Economic Co-operation and Development (2004a). Career Guidance and Public Policy: Bridging the Gap.
- Organisation for Economic Co-operation and Development (2004b). Career Guidance: A handbook for policy makers. Paris: OECD.
- Organisation for Economic Co-operation and Development (2009). Learning for Jobs: OECD Policy Review of Vocational Education and Training. Paris: OECD: Initial Report.

- Organisation for Economic Co-operation and Development (2011). *Education at a Glance 2011: OECD Indicators*. OECD Publishing.
- Prins, J. (1997). *Studieuitval in het wetenschappelijk onderwijs [Student dropout in university education]: studentkenmerken en opleidingskenmerken als verklaring voor studieuitval*. PhD thesis, Katholieke Universiteit Nijmegen, the Netherlands, Nijmegen University Press.
- Rickinson, B., & Rutherford, D. (1995). Increasing undergraduate student retention rates. *British Journal of Guidance & Counselling*, 23(2), 161-172.
- Salmi, J., & Hauptman, A. (2005). Resource allocation mechanisms in tertiary education: A typology and an assessment. In Global University Network for Innovation (Ed.), *Higher Education in the World 2006: The Financing of Universities* (pp. 60-83): Palgrave Macmillan UK.
- Tinto, V. (1987). *Leaving college : rethinking the causes and cures of student attrition*. Chicago: University of Chicago Press.
- Tinto, V. (1993). *Leaving college : rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.
- Tinto, V. (2012). *Completing college: rethinking institutional action*. Chicago: University of Chicago Press.
- Van Gennep, A. (1960). *The rites of passage*. Chicago, Ill.: University of Chicago Press.
- Van Onzenoort, C. H. (2010). *Als uitval opvalt: studie-uitval in het hoger beroepsonderwijs [When dropout strikes: student dropout in higher vocational education]*. PhD thesis, Uitgeverij BOXPress, Oosterwijk.
- Watts, A. G., & Fretwell, D. H. (2004). *Public Policies for Career Development: Case Studies and Emerging Issues for Designing Career Information and Guidance Systems in Developing and Transition Economies*.
- Windesheim University of Applied Sciences (2005a). *Begeleiden en beoordelen binnen vraagsturing [Counselling and assessment in demand-driven education]. Version 15*.
- Windesheim University of Applied Sciences (2005b). *Windesheim Onderwijs Standaarden [Windesheim Educational Standards]. Versie 2.6.1.cvb*.
- Windesheim University of Applied Sciences (2007a). *Begroting 2007 [Budget 2007]*. CvB-besluit nr. 435.
- Windesheim University of Applied Sciences (2007b). *Stand van zaken studieloopbaanbegeleiding 2007 [State of affairs career guidance 2007]*.
- Yorke, M. (1999). *Leaving early : undergraduate non-completion in higher education*. London: Falmer Press.
- Zijlstra, W., & Meijers, F. (2008). *Draagt studieloopbaanbegeleiding bij aan een dialogische leeromgeving in het hoger beroepsonderwijs? [Does career guidance contribute to a dialogical learning environment in higher vocational education?]*. *Tijdschrift voor hoger onderwijs*, 26(2), 77-92.

