Vocational career guidance in Dutch higher vocational education

te Wierik, M.L.J.

2018

document version
Publisher's PDF, also known as Version of record

citation for published version (APA)
te Wierik, M. L. J. (2018). *Vocational career guidance in Dutch higher vocational education: An educational and cost-benefit analysis*.

3

Chapter 3

Career guidance and student success in Dutch higher vocational education

Abstract[3]

To enhance student success, a growing number of vocational education and training institutions in the Netherlands are nowadays implementing new career guidance practices in their competence-based approaches to learning. Based on individual-level data of undergraduate first-year full-time students from a Dutch university of applied sciences, this study investigated the influence of career guidance on first-year student success given other known influences such as prior academic performance, faculty and gender. First of all, students obtained more credits in the competence-based educational system in which they from 2006 are guided. Furthermore, students who completed their first year not only obtained more credits after career guidance was introduced in 2006, but at the same time scored substantially higher first grade points in their first year of study compared to students who left during the first six months.

Introduction

Earning a Bachelor's degree is linked to long-term cognitive, social, and economic benefits to individuals—benefits that are passed onto future generations, enhancing the quality of life of the families of college-educated persons, the communities in which they live, and the larger society (Kuh *et al.* 2008). Unfortunately, too many students who begin college leave before completing degrees. Only half (51%) of US students who enrolled at four year institutions in 1995–96 completed bachelor's degrees within six years at the institutions at which they started (Kuh *et al.* 2008). Furthermore, a survey by the Organisation for Economic Co-operation and Development (OECD) reveals that the figures for Europe and the United States remain more or less steady at 30% or above, although the scale on which students drop out varies from country to country (Yorke and Longden 2004, p. 62). As student attrition implies considerable costs in various areas, enhancing student success is of utmost importance both for students and educational institutions as well as society.

Student success

Student success can be elementary understood as getting students into and through college to a degree or certificate. There are many different aspects of student success, ranging from *student flow* across the entire educational chain (high school graduation, college enrollment, retention, and degree completion), to the *quality and content* of learning, to *outcome variables* like skills achieved as a result of going to college, to positive *educational experiences* (such as student engagement or satisfaction). A broad definition of student success is given by Kuh et al. (2006), who define student success as academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills and competencies, persistence, attainment of educational objectives, and postcollege performance. Each of these dimensions has implications for how student success could be measured and for strategies to change behavior to improve performance. For instance, student engagement is not only widely recognized as an important influence on achievement and learning in higher education, but also considered to be an overarching 'meta construct' that aims to draw together diverse threads of research contributing to explanations of student success (Kahu 2011). The same applies to satisfaction with higher education: As De Lourdes Machado *et al.* (2011) argue, measuring student satisfaction is critical for maintaining and increasing enrolment, managing attrition and retention problems, and making informed decisions about student affairs. However, a review of the literature reveals a lack of consensus on the definition of satisfaction as a concept and that there is therefore

no generally accepted measurement scale for satisfaction with higher education (De Lourdes Machado *et al.* 2011). In sum, student success is a complex construct which can be measured by quantifiable 'hard outcomes' such as retention and completion, and gauged by 'soft outcomes' such as student engagement and distance travelled by learners towards their personal and programme goals (Zepke *et al.* 2010). In our study, we were above all interested in student's academic achievement in the first year, being the year in which success rates in Dutch higher education traditionally are low and attrition rates high (Dutch Education Council 2008). We therefore adopted a quantifiable focus on student success by defining student success as the total amount of credits students obtained at the end of the first year of study, which represent progress towards completion.

Non-completion being the opposite of success

Students leave college for a mix of individual and institutional reasons: change of major, lack of money, family demands, and poor psycho-social fit, among others. More recent theoretical formulations of student persistence underscore the critical role that institutional characteristics and context play in influencing student persistence (Kuh *et al.* 2008). For example, the first year of study can be characterized as a year in which students have to make a transition from the (more protected) secondary school context to the (more open) context of college. As a part of this transition, the first six months of college are an especially important period in student persistence. Therefore, completing the first year is more than half the way in persistence to the Bachelor's degree (Tinto 1988). On the contrary, students who do not succeed in their first year do have a far smaller chance to complete a Bachelor's degree in time (Seidman 2005).

Career guidance as a means to enhance student success

As the extent to which students feel they belong to an institution both academically and socially is an important factor for success in higher education (Dutch Education Council 2008), Tinto's (1993; 2012) interactionist theory of student attrition has guided our research into student success. The central concept of the Tinto (1993; 2012) 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 the college system, the greater will be the commitment to the specific institution and to the goal of college completion leading to persistence.

To enhance student success, a growing number of vocational education and training institutions in the Netherlands are nowadays implementing new career guidance[1] practices in their competence-based approaches to learning. According to the OECD (2004), career guidance refers to services intended to assist people, of any age and at any point throughout their lives to make educational, training and occupational choices and to manage their careers. While personal interviews are still the dominant tool, career guidance includes a wide range of other services, like group discussions, printed and electronic information, career education classes, structured experience, telephone advice and on-line help. The potential effects of career guidance can be thought of at the individual, organisational and societal levels (OECD 2004). At the *individual* level, potential benefits could result from people being better able to manage their choices of learning and work, thereby maximising 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 drop-outs from education and training.

Concerning career guidance, Tinto (1993) argued that the utilization of counselling and advising programmes during the student career underlines the fact that not all students enter college with clearly held goals. For that reason, institutions have allocated many resources to advising and counselling programmes whose intent is 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 part of the educational process which all students are expected to experience (Tinto 1993, p. 172).

Former research on student success and the benefits of career guidance

Numerous studies have examined the factors that influence academic success in and dropout from higher education (Bean 1980; Bean and Metzner 1985; Beekhoven 2002; Bijleveld 1993; Bruinsma 2003; Jansen and Bruinsma 2005; Pascarella and

Terenzini 1983; Prins 1997; Spady 1970; Tinto 1987; 1993; 2012; Van den Berg and Hofman 2005). The interactive approach (Bean and Metzner 1985; Pascarella and Terenzini 1983; Spady 1970; Tinto 1987) is interpreted as an empirical research stream in which student success or dropout is explained in terms of the students' individual characteristics and characteristics from their social environment as well as the interaction between these. In addition, Bean and Eaton (2000) emphasized the importance of student characteristics for success in college. They proposed that personality traits such as self-efficacy help a student persevere when faced with academic and social challenges (Kuh *et al.* 2006). Furthermore, Tinto (2000) emphasized that theoretical models should additionally encompass classroom, faculty and pedagogy in the discussions of student persistence. In the Netherlands, several recent studies have investigated the relationship between a number of student-based and contextual variables and student success (Zeegers 2004). Hoffman and Van den Berg (2000) developed a path model to investigate the inter-relationship between student factors, contextual factors and curricular factors on students' study progress. In addition, Bijleveld (1993) and Jansen (1996) focused their research on curriculum effects on study progress.

As Maguire and Killeen (2003) argued, the model for evaluating career guidance properly is a very complex one. First, the potential effects of career guidance arise at three potential stages: *immediate* attitudinal changes and increased knowledge; *intermediate* behavioural changes for example through improved search efficiency and persistence or entering a particular course; and *longer-term* outcomes such as successes and satisfaction. Second, outcomes of career guidance, both intended and unintended, behavioural and attitudinal, short- and long-term can vary widely. Obtaining clear answers about impacts under these circumstances requires large-scale research with complex experimental designs and statistical controls. As such research is lengthy and expensive, to date limited studies have been conducted. Third, studies of behavioural outcomes require a follow-up design, which raises a number of difficulties (OECD 2004). Not only the effects may not be visible for some time, but also the longer the time that elapses, the more other factors come into play. Studies with control groups are particularly difficult to sustain over extended periods: contact cannot be indefinitely extended, nor guidance indefinitely denied. Based on the evaluative research so far, the international evidence on the benefits of career guidance in general is limited but positive (OECD 2004). It indicates that evidence for its positive impact upon short-term learning, motivational and attitudinal outcomes can be treated with a high degree of confidence, and in the case of its impact upon actual behavior with moderate confidence. However evidence on its impact upon long-term individual outcomes,

and hence upon economic outcomes, is very limited. 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 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. Nowadays, Zijlstra and Meijers (2008) once again questioned the effectiveness of career guidance and concluded that it enhances personal development for only for a small part of the students in Dutch higher vocational education. In addition, Kuijpers et al. (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. Therefore, research is needed to further explore the effectiveness of career guidance in Dutch higher vocational education, for the benefit of both students and educational institutions as well as society. Our case study focused in particular on investigating the influence of career guidance in terms of student success. Career guidance was studied within the context of competence-based higher vocational education at Windesheim University of Applied Sciences (UAS) in Zwolle, the Netherlands.

Windesheim University of Applied Sciences

With 21,167 enrolments in the course 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). With 59 Bachelor's, 4 Master's and 12 associate degree programmes, Windesheim UAS offers a wide variety of study programmes which are brought together in ten different faculties. Staffed in 2010 with approximately 1,770 employees, the emphasis at Windesheim is on a competence-based approach to learning. As we pointed out in an earlier study, institutional attrition rates of first-year fulltime students of Windesheim UAS rose from 22 percent in 2003 to 33 percent in 2008 (Te Wierik *et al.* submitted).

As a result of the 1999 Bologna Declaration on the European Higher Education Area, Windesheim UAS in 2006 set up new educational standards, on the one hand to build its required Bachelor-Master structure (Windesheim University of Applied Sciences 2005) and on the other hand to facilitate students to direct their own learning process by setting up their personal learning goals. Based on these new

educational standards, the main changes from 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 turned 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. Furthermore, in guiding and assessing students a link was established between the personal learning process and the career guidance process, thus enabling students to assume a more self-regulated approach to learning. The 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 all 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 teachers who have an extra task in career guidance for which time is assigned, teachers are made directly responsible for the supervision and assessment of students. To be discussed in detail further on, assessment of career guidance results in a career guidance grade point at the end of the first year and in a (for all students equal) amount of credits when passed.

Reviewing the introduction of career guidance at Windesheim UAS from September 2006, the first experiences of both students and teachers 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 fewer than 50 percent of the respondents valued the quality of career guidance as adequate. In addition, students would have liked to have had more individual career guidance during their first year, in particular with respect to their study progress (Windesheim University of Applied Sciences 2007).

Research aim and question

This study sought to determine the influence of career guidance on student success in a Dutch University of Applied Sciences, taking into account other known predictors of student success. As academic and social integration might be increased by guiding students in their educational and professional careers (Dutch Education Council 2008), our research investigated this guidance in terms of enhancing student success, elaborating upon Tinto's (1993) model of student attrition. As this model is derived from the US (campus) situation of higher education and therefore stresses the impact of both academic and social integration on student persistence, this model's implications for the Dutch (non-campus) situation of higher vocational education should be considered carefully. In particular, as students' social lives in the Netherlands occur to a great extent outside the educational institution, social integration is expected to play a considerable different role in student attrition compared to US (campus) situation. Therefore, the particular context of social integration in Dutch higher vocational education served as the context for the basic research questions that guided our work: Does career guidance significantly affect first-year student success, given other known influences such as prior academic performance, faculty and gender? And if so, in which way does career guidance affect student success? The next section will describe our methodology in detail.

3

Method

Participants

The first part of this study was based on a data set containing 1,317 individual records of full-time first-year students of entry cohort 2008 (course 2008/09). Each record contained the following individual student characteristics: birth date, gender, preliminary education, faculty, study programme, student number, cohort, deregister date, deregister reason, first grade point in course 2008/09, career guidance grade point in course 2008/09 and total number of credits obtained at the end of the course 2008/09. For reasons of comparability of faculties, we included three faculties in our dataset (the other faculties had little or no dispersion of career guidance grade points). Furthermore, we only included freshmen into our dataset (students that switched between study programmes within Windesheim UAS have already been guided during their previous year of study).

The second part of our research was a cohort analysis, based on 7,808 individual records including the same individual student characteristics compared to the first part of our study. Being the two years before and after career guidance was implemented, included cohorts were 2004, 2005, 2007 and 2008.

Materials

Dependent variable student success was measured by the total number of credit points students obtained in their first year. This information was obtained from the student administration offices. As a part of this total number of credits, career guidance credit points were obtained. Being an integral part of the curriculum, assessment of career guidance resulted in a career guidance grade point at the end of the first year and in a (for all students equal) amount of four credits when passed.

Procedure

The data were analyzed in two stages. In the first stage we examined the influence of career guidance on student success by investigating both the assessment and distribution of career guidance grade points of the 2008 cohort of fulltime first-year students. Subsequently, we regressed student success on both the first grade point and career guidance grade point in course 2008/09 as well as on the student characteristics gender, age and preliminary education. In addition, we added the intensity of career guidance (as a proportion of yearly amount of class versus individual career guidance) to our analysis.

To further investigate our preliminary conclusions, the second stage of our research consisted of a cohort analysis. At cohort levels 2004, 2005, 2007 and 2008, we first analyzed the mean number of total credits students obtained at the end of their first year. As this mean number of total credits turned out to increase significantly after career guidance was introduced in 2006, we extended our analysis to faculty level by analyzing the same number of credits for the individual faculties. To exclude alternative explanations, we finally controlled for possible disturbing influences of both preliminary education and first grade point in the course 2008/09.

3

Results

The starting point of our study was the assessment of first-year career guidance courses, in particular the distribution of first-year career guidance grade points per faculty (see Table 1).

Table 1. Distribution of first-year career guidance grade points taken by faculty, cohort 2008

Faculty	Grade point	Frequency	Percent
Built Environment & Transport	6	22	96
	7	1	4
	Total	23	100
Business & Economics	1	1	1
	6	213	45
	7	155	33
	8	100	20
	10	1	1
	Total	470	100
Health Care	6	164	99
	8	1	1
	Total	165	100
Information Sciences	4	1	1
	5	6	5
	6	16	12
	7	63	49
	8	40	31
	9	2	2
	Total	128	100
Management & Law	6	219	90
	7	21	9
	8	4	1
	Total	244	100
Media	6	5	2
	7	19	8
	8	225	90
	Total	249	100
Social Work	4	18	4
	6	156	32
	7	206	42
	8	101	20
	9	10	2
	Total	491	100

As Table 1 shows, faculties of Windesheim UAS differ extensively in dispersion of first-year career guidance grade points. While the faculty of Social Work shows a total of five different grade points, at the faculty of Health Care only one grade point is obtained (excepting a single outlier). Before analyzing the influence of career guidance on student success more extensively, we will first explain the first-year assessment of career guidance courses in the three faculties involved.

Career guidance at the faculty of Business & Economics

At the faculty of Business & Economics, the aim of career guidance is to facilitate students to manage their own learning career by taking gradual steps along their path of vocational clarification. In the course 2008/09, each student participated in a career guidance peer group, consisting of five to seven first-year students. Career guidance was offered by a career guidance teacher as individual, peer group as well as class guidance. One of the main results of first-year career guidance was the portfolio, in which the student not only offered an achievement overview of the propaedeutic year, but also included a letter of application to be enrolled in the remaining section of the bachelor's programme. Another main result of first-year career guidance was the personal development plan. The purpose of this plan was to learn a student 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. At the end of the first year, the career guidance teacher assessed both the portfolio as well as the personal development plan. If the portfolio was passed, an independent judge subsequently assessed the letter of application based on an interview with the student. Both assessments had to be passed, otherwise the student was dismissed by virtue of a so-called *binding study advice* because of unsatisfactory first-year achievement (taking into account any impeding personal circumstances). Based on both assessments, the career guidance teacher finally graded career guidance at the end of the first year on a scale from 6 to 8, where 6 is an adequate grade, 7 is a more than adequate grade and 8 is a good grade.

Career guidance at the faculty of Information Sciences

At the faculty of Information Sciences, the aim of career guidance is to learn students how to gather their own information and to transform this information – by developing career competencies – into meaningful knowledge and actions with regard to self, work and career. Following Kuijpers and Meijers (2011), this faculty identifies five distinctive career competencies: capacity reflection (observation of capabilities that are important for one's career); motivation reflection (observation of wishes and values that are important for one's own career); work exploration (researching job possibilities); career directedness (making thoughtful decisions

and taking actions that allow work and learning to correspond with one's capabilities and motivation and challenges at work); and finally, networking (building and maintaining contacts focused on career development). In the course 2008/09, each student participated in a career guidance peer group, consisting up to a maximum of six first-year students. Career guidance was offered by a career guidance teacher as individual, peer group as well as class guidance. The main result of first-year career guidance was the portfolio, in which the student had to prove the disposal of the five distinguished career competencies. The personal development plan played an important part in the development of career directedness. At the end of the course 2008/09, the career guidance teacher graded career guidance by assessing the disposal of each career competency. An overall career guidance grade was calculated by attaching weights to the grades in individual competencies. The grade in capacity reflection, motivation reflection and work exploration each gave an even weight of 20% in the overall grade, while the grade in career directedness weighted 40%. No weight was attached to the competency networking, this competency only had to be passed. A minimum overall career guidance grade point of 5.5 was needed to pass, otherwise the student was dismissed by virtue of a binding study advice (taking into account any impeding personal circumstances).

Career guidance at the faculty of Social Work

At the faculty of Social Work, the aim of career guidance is to facilitate students in building up their own self-image and in managing their own learning career by reflecting on learning experiences. One of the main results of first-year career guidance was the portfolio, to be made up of nine chapters imposed by the faculty, in which the student had to prove the disposal of the five aforementioned career competencies. In the course 2008/09, each student participated in a career guidance peer group consisting of 12 to 15 first-year students. Career guidance was offered by a career guidance teacher as individual, peer group as well as class guidance. Based on the nine chapters portfolio, the career guidance teacher graded each chapter at the end of the first year on a scale from 1 to 10, where 1-3 is a very strongly inadequate grade, 4 is a strongly inadequate grade, 5 is an inadequate grade, 6 is an adequate grade, 7 is a more than adequate grade, 8 is a good grade and 9-10 is a very good grade. An overall career guidance grade point was calculated by dividing the total score by nine, as every chapter gave an even weight. A minimum overall career guidance grade of 5.5 was needed to pass, otherwise the student was dismissed by virtue of a binding study advice (taking into account any impeding personal circumstances).

The influence of career guidance on student success

To examine the influence of career guidance on student success, we first regressed student success on both the first grade point and career guidance grade point in course 2008/09 as well as on the student-background variables gender, age and preliminary education (see Table 2).

Table 2. Summary of linear regression analysis for variables predicting first-year student success of Windesheim UAS, cohort 2008 (N = 1,317)

Predictor	B	SE B	β
First grade point	1.39	0.19	.24***
Career guidance grade point	1.64	0.31	.17***
Preliminary education	1.20	0.37	.10**
Constant	25.05	2.53	

Note. R^2 = .12.
**p < .01. ***p < .001.

Table 3. Correlations between student success and career guidance grade point, taken per faculty by the proportion of first-year class and individual career guidance, cohort 2008

Faculty	CCG	ICG	CCG/ICG	Correlation
Social Work	1,620	90	18.00	.177**
Business & Economics	840	45	18.67	.228**
Information Sciences	1,845	30	61.50	.449**

Note. CCG = yearly amount of class career guidance in minutes; ICG = yearly amount of individual career guidance in minutes.
**p < .01 (two-tailed).

Although our model has limited explanatory power, Table 2 shows some interesting findings. In respect to the three faculties involved, the first grade point as well as the career guidance grade point are strong predictors of student success. In addition, both grade points enhance student success as they have a positive B coefficient. Finally, preliminary education also is a positive and powerful predictor of first-year student success.

Since the career guidance grade point seemed to be a strong predictor of student success, the next step in our analysis was to relate this grade point to the intensity of career guidance at the level of the three faculties involved. Therefore, we investigated the yearly amount of time spent at class versus individual career guidance for each faculty and related the proportion of these yearly amounts to the correlation between student success and career guidance grade point (see Table 3).

As Table 3 shows, for all faculties a strong correlation exists between first-year career guidance grade point and first-year student success (presented in ascending order). Obviously, the stronger the correlation between career guidance grade point and student success, the higher the proportion between class and individual career guidance is. Remarkably, the correlation between student success is strongest in faculties where the yearly amount of class career guidance is greatest compared to the yearly amount of individual career guidance.

Further investigation of our preliminary conclusions

So far, our research showed that both the first grade point and the career guidance grade point matter in terms of student success. Furthermore, faculties of Windesheim UAS differ in the way career guidance is offered and assessed. To further investigate these preliminary conclusions, the second part of our research consisted of a cohort analysis. At cohort levels 2004, 2005, 2007 and 2008, we first analyzed the mean number of total credits students obtained at the end of their first year (see Table 4).

Table 4 clearly indicates an increase of the mean number of total credits in 2007 and 2008 compared to 2004 and 2005. Obviously, first-year students of Windesheim UAS obtained more credits in the competence-based educational system in which they from 2006 are guided to direct their own learning process. This finding was statistically confirmed when we tested the equality of the overall mean number of total credits of cohorts 2004 and 2005 (i.c. 38.74 credits) and of cohorts 2007 and 2008 (i.c. 46.73 credits) by a t-test (two-tailed, $p < .001$).

In order to further investigate the significant increase of the mean number of total credits after career guidance was introduced in 2006, we extended our analysis to faculty level by analyzing the same number of credits for the three faculties involved (see Table 5).

Table 4. Descriptive statistics on first-year student success of Windesheim UAS

Cohort	M	SD	N
2004	39.37	13.50	1,942
2005	38.16	13.62	2,089
2007	45.23	15.52	1,510
2008	47.72	15.31	2,267
Total	42.60	15.05	7,808

Table 5. Descriptive statistics on first-year student success taken by faculty

Faculty	Cohort	M	SD	N
Social Work	2004	43.06	14.15	469
	2005	41.18	15.11	470
	2007	50.53	13.76	214
	2008	54.10	11.01	517
	Total	46.91	14.60	1,670
Business & Economics	2004	39.06	13.20	506
	2005	38.25	13.67	570
	2007	40.88	17.43	705
	2008	44.78	16.38	659
	Total	40.94	15.69	2,440
Information Sciences	2004	36.15	10.44	185
	2005	35.10	10.01	152
	2007	53.68	9.31	69
	2008	53.49	8.42	132
	Total	42.36	13.00	538

As Table 5 shows, the mean number of total credits of every faculty initially shows a slight decline from 2004 to 2005 but then reveals a strong increase in 2007 as well as 2008. Evidently, our finding of first-year students obtaining more credits after career guidance was introduced in 2006 is equally apparent in case of the three faculties involved.

Other known influences of student success

Although our results so far indicate career guidance to be a strong predictor of student success, alternative explanations need to be taken into account while investigating student success. First of all, public policy decisions for widening access to encourage more students to begin higher education (i.e. lifelong learning) presumably involve admitting more students with relatively weak levels of academic attainment prior to university (Arulampalam *et al.* 2005). Consequently, the level of preliminary education of first-year students is nowadays expected to influence first-year student success. Therefore, Table 6 presents an overview of the composition of the cohorts 2004, 2005, 2007 and 2008 by level of preliminary education of the three faculties involved.

Regarding the level of preliminary education, Table 6 shows a substantially balanced distribution of first-year students of the cohorts involved. As academic attainment levels prior to university remained considerably stable, the composition of cohorts by level of preliminary education obviously had no disturbing influence on first-year student success of Windesheim UAS.

As a second alternative explanation of student success, we investigated the mean first grade point of the cohorts 2004, 2005, 2007 and 2008 by comparing students who completed their first year ('persisters') to students who left during the first six months ('withdrawals') (see Table 7).

As Table 7 illustrates, the mean first grade point of early withdrawing first-year students initially shows a slight increase from 2004 to 2005 but then reveals a strong decline in 2007 which deteriorates in 2008. However, the mean first grade point of persisting students initially increases slightly from 2004 to 2005 but then rises substantially in both 2007 and 2008. Consequently, persisting students obviously not only obtained more credits after career guidance was introduced in 2006, but at the same time scored substantially higher first grade points in their first year of study.

Table 6. Overview of first-year students by level of preliminary education

			Level of preliminary education				
			MBO	HAVO	VWO	Other	All
Cohort	2004	Number	476	547	76	67	1,166
		%	41	47	6	6	100
	2005	Number	478	564	80	79	1,201
		%	40	47	7	6	100
	2007	Number	581	767	71	78	1,497
		%	39	51	5	5	100
	2008	Number	606	919	93	59	1,677
		%	36	55	5	4	100
Total		Number	2,141	2,797	320	283	5,541
		%	39	50	6	5	100

Note. MBO = secondary vocational education; HAVO = higher general secondary education; VWO = pre-university education.

Table 7. Descriptive statistics on first grade points of first-year students of Windesheim UAS

	Cohort	M	SD	N
Withdrawals	2004	6.36	0.72	105
	2005	6.38	0.72	100
	2007	6.29	1.28	91
	2008	6.11	1.39	16
	Total	6.33	0.95	312
Persisters	2004	6.46	0.74	1,030
	2005	6.52	0.88	1,075
	2007	6.81	1.00	1,386
	2008	7.05	1.38	947
	Total	6.71	1.04	4,438
Total	2004	6.45	0.74	1,135
	2005	6.51	0.87	1,175
	2007	6.78	1.03	1,477
	2008	7.03	1.38	963
	Total	6.69	1.04	4,750

Discussion

As our results show, first-year full-time students of Windesheim UAS obtained more credits in the competence-based educational system in which they from 2006 are guided to direct their own learning process. Based on these initial findings, career guidance met our expectations of helping students to persist in their first year of study. These positive effects of career guidance have also been noted by Prideaux *et al.* (2000), as programmes that aim to assist people in a variety of career-related activities including career decision making, career exploration, career maturity, and career self-efficacy have generally shown positive effects (Prideaux *et al.* 2000, p. 236).

Furthermore, the first grade point as well as the career guidance grade point turned out to be strong predictors of student success. As Pascarella and Terenzini (2005) concluded, college grades are probably the best predictor of student persistence, degree completion and graduate school enrollment. Good grades in the first year are especially important to subsequent academic success and degree completion, as they enhance first-year progress towards timely degree completion.

Moreover, preliminary education proved to be a positive and powerful predictor of first-year student success as well. In the preliminary phase, sufficient preparation at the start of a student's higher education is a prerequisite for success (Dutch Education Council 2008). As Kuh *et al.* (2006) noted, those students who are best prepared coming out of high school are best positioned to do well in college, regardless of who they are, how much money they have, or where they go.

Finally, in our search for alternative explanations the composition of cohorts by level of preliminary education did not affect first-year student success, as academic attainment levels prior to university remained considerably stable over time. Furthermore, students who completed their first year obviously not only obtained more credits after career guidance was introduced in 2006, but at the same time scored substantially higher first grade points in their first year of study compared to students who left during the first six months. The latter finding may be linked to student engagement, defined by Zhao and Kuh (2004) as a range of behaviors that institutions can influence with teaching practices and programmatic interventions such as first-year seminars, service-learning courses, and learning communities. Student engagement positively affects grades in both the first and last year of college as well as persistence to the second year at the same institution (Kuh *et al.* 2008). In further investigating the link between career guidance and student success, we particularly recommend to consider student engagement as a mediating variable.

Notes

1. In this chapter we refer to 'career guidance' rather than 'career counselling', which is more common in the USA and Canada (Lundahl and Nilsson 2009)

3

References

Arulampalam, W., R.A. Naylor, and J.P. Smith. 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): 251-62.

Bean, J.P. 1980. "Dropouts and Turnover: The Synthesis and Test of a Causal Model of Student Attrition." *Research in Higher Education* 12 (2): 155-87.

Bean, J.P., and S. Eaton. 2000. "A Psycholological Model of College Student Retention." In *Reworking the student departure puzzle*, edited by J. M. Braxton, 73-89. Nashville, TN: Vanderbilt University Press.

Bean, J.P., and B.S. Metzner. 1985. A Conceptual Model of Nontraditional Undergraduate Student Attrition." *Review of Educational Research* 55 (4): 485-540.

Beekhoven, S. 2002. "A Fair Change of Succeeding. Study Careers in Dutch Higher Education." PhD diss., SCO-Kohnstam Instituut.

Bijleveld, R.J. 1993. *Numeriek rendement en studiestaking: Een theoretische analyse van factoren die samenhangen met rendement en studiestaking in het wetenschappelijk onderwijs*. [Completion rates and dropout]. PhD diss., Universiteit Twente, the Netherlands.

Bruinsma, M. 2003. "Effectiveness of Higher Education: Factors that Determine Outcomes of University Education." PhD diss., Rijksuniversiteit Groningen, the Netherlands.

De Lourdes Machado, M., R. Brites, A. Magalhães and M.J. Sá. 2011. "Satisfaction with Higher Education: Critical Data for Student Development." *European Journal of Education* 46 (3): 415-32.

Dutch Education Council. 2008. *A Successful Start in Higher Education*. The Hague: Dutch Education Council.

Hofman, A., and M. Van den Berg. 2000. "Determinants of Study Progress: The Impact of Student, Curricular, and Contextual Factors on Study Progress in University Education." *Higher Education in Europe* 25 (1): 93-110.

Israëls, H. 1983. *"Helpt" studentenbegeleiding? [Does student counselling "help"?]*. Vol. 26 of *Bureau Onderzoek van Onderwijs*. Leiden: Bureau Onderzoek van Onderwijs Rijksuniversiteit Leiden.

Jansen, E.P.W.A. 1996. *Curriculumorganisatie en studievoortgang: Een onderzoek onder zes studierichtingen aan de Rijksuniversiteit Groningen* [Curriculum organization and study progress]. PhD diss., Groningen: GION, Gronings Instituut voor Onderzoek van Onderwijs, Opvoeding en Ontwikkeling.

Jansen, E.P.W.A., and M. Bruinsma. 2005. "Explaining Achievement in Higher Education". *Educational Research and Evaluation* 11 (3): 235-52.

Kahu, E.R. 2011. "Framing Student Engagement in Higher Education". *Studies in Higher Education* 38 (5): 758-73.

Klip, E.C. 1970. "Studiebegeleiding aan eerstejaarsstudenten" [Study-tutoring to first year students]. PhD thesis, Rijksuniversiteit Utrecht, the Netherlands.

Kuh, G.D., T.M. Cruce, R. Shoup, J. Kinzie and R.M. Gonyea. 2008. "Unmasking the Effects of Student Engagement on First-year College Grades and Persistence". *Journal of Higher Education* 79 (5): 540-63.

Kuh, G.D., J. Kinzie, J. Buckley, B. Bridges and J. Hayek. 2006. *What matters to student success: A review of the literature*. Washington: National Symposium on Postsecondary Student Success.

Kuijpers, M., and F. Meijers. 2011. "Learning for Now or Later? Career competencies among Students in Higher Vocational Education in the Netherlands". *Studies in Higher Education*: 37 (4): 449-67.

Kuijpers, M., F. Meijers and C. Gundy. 2011. "The Relationship Between Learning Environment and Career Competencies of Students in Vocational Education". *Journal of Vocational Behavior* 78 (1): 21-30.

Lundahl, L., and G. Nilsson. 2009. "Architects of Their Own Future? Swedish Career Guidance Policies." *British Journal of Guidance & Counselling* 37 (1): 27-38.

Maguire, M., and J. Killeen. 2003. "Outcomes from Career Information and Guidance Services". Paper prepared for an OECD review of policies for information, guidance and counselling services. Commissioned jointly by the European Commission and the OECD. January 2003.

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: Netherlands Association of Universities of Applied Sciences.

OECD (Organisation for Economic Co-Operation and Development). 2004. *Career Guidance and Public Policy: Bridging the Gap*. Paris: OECD.

Pascarella, E.T., and P.T. Terenzini. 1983. "Predicting Voluntary Freshman Year Persistence/Withdrawal Behavior in a Residential University: A Path Analytic Validation of Tinto's Model". *Journal of Educational Psychology* 75 (2): 215-26.

Pascarella, E.T., and P.T. Terenzini. 2005. *How College Affects Students*. San Francisco, CA: Jossey-Bass.

Prideaux, L.-A., P.A. Creed, J. Muller and W. Patton. 2000. "A Review of Career Interventions From an Educational Perspective: Have Investigations Shed any Light?" *Swiss Journal of Psychology* 59 (4): 227-39.

Prins, J. 1997. "Studieuitval in het wetenschappelijk onderwijs: Studentkenmerken en opleidingskenmerken als verklaring voor studieuitval" [Student dropout in university education]. PhD thesis, Katholieke Universiteit Nijmegen, the Netherlands.

Seidman, A. 2005. *College Student Retention: Formula for Student Success*. Westport, CT: Praeger.

Spady, W. 1970. "Dropouts from Higher Education: An Interdiscipinary Review and Synthesis." *Interchange*: 1 (1): 64-85.

Te Wierik, M. L. J., J. J. Beishuizen, W. van Os, and J. Schoonenboom. Forthcoming. "The Effectiveness of Career Guidance in Dutch Higher Vocational Education: A Quantitative Study."

Tinto, V. 1987. *Leaving College: Rethinking the Causes and Cures of Student Attrition*. Chicago, IL: University of Chicago Press.

Tinto, V. 1988. "Stages of Student Departure: Reflections on the Longitudinal Character of Student Leaving." *Journal of Higher Education* 59 (4): 438-55.

Tinto, V. 1993. *Leaving College: Rethinking the Causes and Cures of Student Attrition*. 2nd ed. Chicago, IL: University of Chicago Press.

Tinto, V. 2000. "Linking Learning and Leaving. Exploring the Role of Classroom in Student Departure." In *Reworking the Student Departure Puzzle*, edited by J. M. Braxton, 81-94. Nashville, TN: Vanderbilt University Press.

Tinto, V. 2012. *Completing College: Rethinking Institutional Action*. Chicago, IL: University of Chicago Press.

Van den Berg, M. N., and W. H. A. Hofman. 2005. "Student Success in University Education: A Multi-measurement Study of the Impact of Student and Faculty Factors on Study Progress." *Higher Education* 50 (3): 413-46.

Windesheim University of Applied Sciences. 2005. "Windesheim onderwijs standaarden [Windesheim educational standards]." Versie 2.6.1.cvb. Zwolle: Windesheim University of Applied Sciences.

Windesheim University of Applied Sciences. 2007. Stand van zaken studieloopbaanbegeleiding 2007 [State of affairs career guidance 2007]. Zwolle: Windesheim University of Applied Sciences.

Yorke, M., and B. Longden. 2004. *Retention and Student Success in Higher Education*. Maidenhead, UK: Society for Research into Higher Education / Open University Press.

Zeegers, P. 2004. "Student Learning in Higher Education: A Path Analysis of Academic Achievement in Science." *Higher Education Research and Development* 23 (1): 35-56.

Zepke, N., L. Leach and P. Butler. 2010. "Non-institutional Influences and Student Perceptions of Success." *Studies in Higher Education* 36 (2): 227-42.

Zhao, C. -M., and G. Kuh. 2004. "Adding Value: Learning Communities and Student Engagement." *Research in Higher Education* 45 (2): 115-38.

Zijlstra, W., and F. Meijers. 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.

3