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Chapter 4

4

Career guidance and student motivation in Dutch higher vocational education

Abstract⁴

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 curricula. Based on data of undergraduate first-year full-time students from three faculties of a Dutch university of applied sciences, this study investigated the influence of career guidance on first-year student motivation given other known influences such as age, gender and prior academic performance. As our results show, student reflection plays a major role in first-year career guidance. In particular, the focus on student reflection conceivably explains the differences between faculties regarding the positive influences of career guidance on first-year student motivation. Furthermore, the level of student motivation at the end of the first year is primarily influenced by its level at the beginning of the year.

⁴ This chapter was submitted as: Te Wierik, M. L. J., J. J. Beishuizen, and W. van Os (submitted). Career guidance and student motivation in Dutch higher vocational education.

Introduction

What motivates students to stay in or drop out of college? This has been an educator's conundrum for decades (Allen 1999). Students taking a relatively long time to complete their courses and leaving university without a degree or a diploma are perceived as a major problem in higher education (van Berkel et al. 2012). In Dutch universities of applied sciences, around 30 per cent of the first-year students drop out or switch during or at the end of their first year (Dutch Education Council 2008). 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 motivation

What variables are important to consider when trying to predict student success in college? As Harackiewicz et al. (2002) argue, students' ability and prior academic performance undoubtedly stand out as key predictors of student success. Apart from that, motivational variables play a key role in predicting success in college as well. As we were particularly interested in the motives that enhance first-year student success, we distinguished four different types of student motivation in the present study with our most basic distinction being extrinsic versus intrinsic motivation. The term *extrinsic motivation* refers to the performance of an activity in order to attain some separable outcome and, thus, contrasts with *intrinsic motivation*, which refers to acting for the inherent satisfaction of the activity itself (Ryan and Deci 2000). With respect to student success, Vansteenkiste et al. (2004) have noted that engaging in learning behaviours with an intrinsic goal resulted in higher academic success rates and better test performance than engaging in behaviours with an extrinsic goal.

Furthermore, we distinguished *achievement motivation* which describes the strength of one's tendency to achieve (Boggiano and Pittman 1992). Students may give up at attempts to achieve because they feel that their efforts are ineffective. This belief pattern and the corresponding behavioural responses, known as learned helplessness, result in lowered performance and may, in fact, be an important factor in underachievement (Eppler and Harju 1997).

Finally, *self-efficacy* has been defined as individuals' confidence in their performance capabilities in a particular context or a specific task or domain (Bandura 1997). Self-efficacy influences the level of goal challenge people set for themselves, the amount of effort they mobilize, and their persistence in the face of difficulties (Bandura

1986, 1991). Pajares (1996) found academic self-efficacy to be strongly associated with academic performance of college students, with positive correlations ranging from $r = .49$ to $r = .71$.

First-year student motivation

Difficulties in the transition from secondary school to university have been of great concern to researchers internationally. As Tinto (2010) argued, the expectations the institution establishes for the quality or level of effort required for successful performance highly influence first-year student motivation and performance. As data from the US National Survey of Student Engagement indicate, students' expectations for the amount of work or effort they have to expend to succeed tend to decline over the course of the first year. Consequently, students appear to expend less effort in their studies than faculty might expect or desire, especially during the critical first year of college (Tinto 2010).

Furthermore, German scientist Busse (2011) found that one of the consequences of the transition to university is a significant decrease in intrinsic motivation experienced by students over the course of the first year. Drawing on incidental evidence indicating motivational loss among first-year students of modern foreign languages at two major English universities, different motivational attributes of first-year students studying German as a foreign language were measured, among them students' perceived level of intrinsic motivation and perceived level of effort expended on German. Students' motivation waned most in the middle stages of the academic year and somewhat recovered towards the end of the year. During the course of the academic year, lack of engagement was a recurrent topic, especially within the university curriculum. One reason for this loss of engagement was the perceived low level of challenge, induced by the efforts the university asked for. Furthermore, first-year students might at first not be aware that they can adjust this level of challenge posed by university classes (Busse 2011).

Besides difficulties in the transition from secondary school to university, age is of great importance for the success of first-year students in higher education. Regarding age, Eppler and Harju (1997) examined the relationship between achievement motivation and academic performance of 262 undergraduate students. Results showed that older students (who had taken a year or more away from college before continuing their studies) are more intrinsically motivated to acquire knowledge and develop competence in skills, while freshmen are more externally oriented toward forming social relationships, receiving external rewards and living up to others' expectations (Eppler and Harju 1997). In addition, Fazey and Fazey (2001)

investigated the extent to which first-year undergraduates, on arrival at university, displayed autonomy-related characteristics and how these characteristics varied across age. Whilst mature students scored higher than did younger students on all the subcomponents of intrinsic motivation, younger students scored significantly higher on identified regulation and on external regulation (Fazey and Fazey 2001). Moreover, Kusurkar et al. (2010) showed that strength of motivation increases with age, between the ages of 18 to 24 years. After the age of about 24 years the strength of motivation is more or less constant. In sum, age considerably influences first-year student motivation in higher education.

Career guidance

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 curricula. In this paper we refer to 'career guidance' rather than 'career counselling', which is more common in the USA and Canada (Lundahl and Nilsson 2009). According to the Organisation for Economic Co-operation and Development (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.

Various career guidance scenarios have been developed (Mittendorff et al. 2008; Reese and Miller 2010) and can be categorized along three dimensions, based on purpose, grouping and curriculum integration. Scenarios may be aimed at improving study skills, preparing for future careers, and professional development. Usually, more than one objective has been chosen as goal for a career guidance programme. Career guidance programmes may be offered on an individual counselling basis or in groups of students. Furthermore, they may be integrated in the curriculum as an obligatory course or may be offered as a separate optional choice.

To foster student motivation, different potential effects of career guidance can be thought of. As Conti (2000) argues, the provision of appealing course offerings, inspiring instructors, exciting social and extracurricular activities, comfortable living arrangements, and emotional support for students could facilitate the intrinsic motivation and adjustment of new students (Conti 2000). Furthermore, Haarala-Muhonen et al. (2011) investigated factors affecting the study pace of law students during their first academic year and concluded that novices need study counselling to interpret disciplinary knowledge and clarify the course requirements for them (Haarala-Muhonen et al. 2011).

As the foregoing examples show, career guidance has the potential to foster first-year student motivation in higher education. To investigate the extent to which this potential is used in Dutch higher education, our case study investigated the influence of career guidance on first-year student motivation 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). Staffed in 2011 with approximately 1,900 employees, Windesheim UAS offers 59 Bachelor's, 4 Master's 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 2005) and in addition to facilitate students to direct their own learning process by setting up personal learning goals. Regarding the guidance and counselling of students, as of September 2006 the emphasis turned from supporting those students who fell short of expectations or were liable 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 career guidance was closely linked to the personal learning process, thus enabling students to assume a more self-regulated approach to learning and at the same time foster their motivation to successfully attend higher education. Teachers who have an extra task in career guidance for which time is assigned, were made directly responsible for the supervision and assessment of students. To be discussed in detail further on, 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 credits when passed. Furthermore, faculties of Windesheim UAS differed in the first-year assessment of career guidance courses, in particular the distribution of first-year career guidance grade points per faculty. For reasons of comparability of faculties, we only included the faculties of Business & Economics, Information Sciences and Social Work in our study (as the other faculties had little or no dispersion of career guidance grade points). Before presenting our research aim and questions, 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. Career guidance is offered by a career guidance teacher to individual students, peer groups as well as classes. In the course 2008/09, each student participated in a career guidance peer group, consisting of five to seven first-year students from the same class. One of the main products of first-year career guidance was a portfolio, in which the student not only offered an achievement overview of the first year, but also included a letter of application to be enrolled in the remaining three years of the bachelor's programme. Another main product was a personal development plan, intended to teach 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 assessor separately assessed the included letter of application, based on an interview with the student. 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. Career guidance was offered by a career guidance teacher to individual students, peer groups as well as classes. In the course 2008/09, each student participated in a career guidance peer group, consisting up to a maximum of six first-year students. The main product of first-year career guidance was a portfolio, in which the student had to prove mastery of a distinguished set of career competencies. At the end of the course 2008/09, the career guidance teacher graded career guidance by assessing the mastery of each career competency. An overall career guidance grade was calculated by attaching weights to the grades for individual competencies.

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 products of first-year career guidance was a portfolio, to be made up of nine chapters, in which the student had

to prove mastery of a predefined set of career competencies and which included a curriculum vitae and a student reflection on the career guidance course. Career guidance was offered by a career guidance teacher to individual students, peer groups as well as whole classes. In the course 2008/09, each student participated in a career guidance peer group consisting of 12 to 15 first-year students from the same class. At the end of the first year, the career guidance teacher graded each portfolio 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.

Comparison of career guidance at the three faculties involved

As the previous sections indicate, the three faculties involved show considerable differences in the way career guidance was offered. In particular, these differences concerned the focus on student reflection in first-year career guidance. At the faculties of Business & Economics and Social Work, students were explicitly taught to reflect on their own strengths and weaknesses and on the career guidance course respectively. Although we did not deliberately select these three faculties but included them for reasons of comparability of faculties (as the other faculties had little or no dispersion of career guidance grade points), their differences enabled us to explore the influence of career guidance on first-year student motivation. The next section will present our research questions involved.

Research aim and questions

This study sought to determine the influence of career guidance on first-year student motivation in a Dutch university of applied sciences, taking into account the specific role the transition from secondary school to university plays with respect to first-year student motivation. As we discussed above, one of the consequences of the inappropriate expectations is the significant decrease in intrinsic motivation experienced by students over the course of their first year. Furthermore, student background variables gender, age and preliminary education proved to have a considerable impact on motivation of first-year students in higher education. Therefore, this particular context of first-year student motivation served as the background for the basic research questions that guided our work:

- Does first-year student motivation benefit from career guidance, given other known influences of gender, age, preliminary education and initial student motivation?
- Do differences in career guidance scenarios influence first-year student motivation?

Based on data of undergraduate first-year full-time students of entry cohort 2008 from three faculties of a university of applied sciences, we investigated the influence of career guidance on first-year student motivation in Dutch higher vocational education.

Method

Participants

The participants in our study were 1,443 full-time first-year students of three faculties of Windesheim UAS, see Table 1.

Table 1. Descriptive statistics on participating students

Faculty	Gender		Age	Preliminary education			
	Male	Female		HAVO	VWO	MBO	Other
Business & Economics	514	236	18.7	475	39	230	6
Information Sciences	139	5	19.1	91	5	42	6
Social Work	92	457	19.5	249	25	254	21
Total	745	698	19.1	815	69	526	33

Note. Age = average age at the moment of enrolment; HAVO = higher general secondary education; VWO = pre-university education; MBO = secondary vocational education.

All participants completed a sequence of questionnaires on competencies, skills, motivation, learning style and choice of future profession, which all first-year students of Windesheim UAS had to complete. Only freshmen participated in our research, as students that switched between study programmes within Windesheim UAS have already been guided during their previous year of study.

Materials

Career guidance at Windesheim UAS spanned the entire four years of student life from admissions to graduation and 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 had to prove the disposal of the distinguished career competencies. 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. A minimum overall career guidance grade of 5.5 was needed

to pass, otherwise the student was dismissed by virtue of a so-called *binding study advice* (taking into account any impeding personal circumstances).

Self-report questionnaire MLV-H

All students responded to a Dutch online self-report questionnaire MLV-H [Motivation and Learning style Questionnaire - Higher level] that included 88 items on student motivation and learning style. Scale reliability of this questionnaire varied from $\alpha = .74$ to $\alpha = .89$ (NOA 2013). This has been validated on a sample of 886 first-year students of a Dutch UAS. Students were instructed to respond to the items on a 9-point stanine scale (1 = *very low* to 9 = *very high*). Because we were interested in motivation in particular, we only considered 55 items on four distinct motivational scales: extrinsic motivation, intrinsic motivation, achievement motivation and self-efficacy. The extrinsic motivation scale ($\alpha = .79$) consisted of 13 items regarding the student effort to engage in activities for instrumental or other reasons, such as receiving a reward (e.g., “Attending college means to me that I will make more money in the future”, “When I succeed in college I’m pleased to get compliments from other people”, “I even want to attend college to please someone else”). The intrinsic motivation scale ($\alpha = .88$) was made up of 15 items concerning personal interest in (“The content of the study I’ve chosen is very interesting”) and perceived pleasure from course work (“I don’t need any incentive to study”) as well as the drive to comprehend things (“I’m particularly attending college in order to understand things better”). In the achievement motivation scale ($\alpha = .86$), 17 items with respect to striving for success, taking up challenges and exceeding expectations were used (e.g., “I always make great demands upon my work”, “I really want to achieve things in society”, “It gives me a great feeling when I’m performing better than other people”). The self-efficacy scale ($\alpha = .89$) consisted of 10 items regarding the efficacy of having made the right choice of college and confidentially facing the future of college (e.g., “I know with this study exactly what I’m starting”, “I am sure the study will be as I expect it to be”, “Before I decided upon my study, I first had a sufficient look around”).

Procedure

Data on student motivation were collected at the beginning (pre measurement) and at the end (post measurement) of the first year. Furthermore, the first-year career guidance grade point and student background variables gender, age and preliminary education were obtained from the student administration offices.

The pre measurement data on student motivation were collected as a part of a compulsory sequence of questionnaires on competencies, skills, motivation, learning style and choice of future profession. Students responded to these

questionnaires in the Library Instruction Room (LIR) of Windesheim UAS that had 35 computers for student use.

The post measurement data were collected at the end of the first year by volunteering the pre measurement students to complete once again the self-report questionnaire MLV-H. Because of limited capacity of the LIR, we had to collect these data in three stages. In October 2009, we invited all first-year students of the faculties of Information Sciences and Social Work by e-mail to respond to the questionnaire in the LIR. At the end of the subscription period, three iPods were put off for raffle to enhance the response to the invitation. In December 2009, students of the faculty of Business & Economics were invited by e-mail to respond to the questionnaire in the LIR. These students were rewarded course time in which they could transfer the self-report into their personal development plans. Finally, in February 2010 all non-responding students of the three faculties once again were invited by e-mail to respond to the questionnaire, this time by using an internet link.

As a total number of 144 students participated in the post measurement, we analysed the non-response as shown in Table 2.

Table 2. Analysis of non-response in absolute numbers and percentages computed over the subgroup of respondents or non-respondents

		Respondents		Non-respondents	
		<i>n</i>	Percentage	<i>n</i>	Percentage
Gender	Male	73	51	672	52
	Female	71	49	627	48
Preliminary education	HAVO	90	63	725	56
	VWO	8	6	61	5
	MBO	45	31	481	37
	Other	1	0	32	2
Faculty	Business & Economics	104	72	646	50
	Information Sciences	16	11	128	10
	Social Work	24	17	525	40
	Total	144	100	1,299	100

Note. HAVO = higher general secondary education; VWO = pre-university education; MBO = secondary vocational education; *n* = absolute number of students.

The mean age of the respondents and non-respondents was 18.6 and 19.1 respectively. The difference in mean age was statistically confirmed when we tested the equality of the mean age by a t-test (two-tailed, $p < .01$), indicating that non-respondents were significantly older compared to respondents. As older students are more intrinsically motivated to acquire knowledge compared to freshmen (Eppler and Harju 1997), this difference in mean age could have caused an underestimation of the level of intrinsic motivation in our data. Regarding faculty, a chi-square test ($\chi^2(2, N = 1,443) = 32.04, p < .001$) statistically confirmed the overrepresentation of respondents of the faculty of Business & Economics in the post measurement. With respect to gender and preliminary education, we found no significant differences between the number of respondents and non-respondents, thus indicating an equal distribution of gender and preliminary education when respondents and non-respondents were compared.

In addition, students possibly showed different levels of initial student motivation and first-year student achievement. To check these differences in case of our population, we compared both student motivation at the start of the first year and total number of first-year credits of responding and non-responding students (see Table 3).

Table 3. Analysis of non-response with respect to initial student motivation and total number of first-year credits computed over the subgroup of respondents or non-respondents

		Respondents		Non-respondents	
		M	SD	M	SD
Student motivation	Extrinsic motivation	38.95	7.30	39.30	7.49
	Intrinsic motivation	49.74	7.16	51.12*	7.64
	Achievement motivation	54.10	9.44	54.02	9.66
	Self-efficacy	35.86	6.40	37.29**	5.77
Total number of first-year credits		54.18	7.51	53.75	7.93

Note. * $p < .05$. ** $p < .01$.

Compared to respondents, Table 3 shows non-respondents to be more intrinsically motivated and have higher self-efficacy. As a consequence, we could have overestimated the influence of career guidance on intrinsic motivation and self-efficacy. Furthermore, this Table shows an equal total number of first-year credits, indicating no differences in first-year student achievement between respondents and non-respondents.

Data analysis

Data were analysed in three stages. First, we analysed the composition of the pre measurement data using descriptive statistics on age. Continuous variable age was defined as age at the moment of enrolment.

Secondly, the pre and post measurement data were compared using multilevel descriptive statistics to trace any possible faculty differences in the development of student motivation in the first year of study.

Thirdly, the first-year influence of career guidance on student motivation was investigated using regression analysis in SPSS. Per motivational scale, post measurement level of student motivation was regressed on the corresponding pre measurement level of student motivation, the first-year career guidance grade point and student background variables gender, age and preliminary education. 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. Regression analyses were multilevel, in other words they were conducted at each level of the three faculties involved as well as on total level.

Results

Composition of the pre measurement data

To investigate the composition of the pre measurement data, we first examined the pre measurement level of student motivation for age at the moment of enrolment (see Figure 1).

Excepting extrinsic motivation, Figure 1 shows an increasing pre measurement level of student motivation as students are older at the moment of enrolment. This increase was statistically confirmed (intrinsic motivation: two-tailed $t(482) = -9,79$, $p < .001$; achievement motivation: two-tailed $t(482) = -4,97$, $p < .001$; self-efficacy: two-tailed $t(482) = -6,91$, $p < .001$), indicating that students over 21 were significantly more motivated compared to students below 18.

Comparison of pre and post measurement data

Before investigating the first-year influence of career guidance on student motivation in detail, we compared the pre and post measurement data on faculty level to trace any possible faculty differences in the development of student motivation (see Table 4).

Overall, Table 4 shows no significant differences in the mean student motivation scores of pre and post measurement, indicating that student motivation remains relatively stable throughout the first year of study.

At faculty level, both the faculties of Business & Economics and Information Sciences show significant differences in pre and post measurement scores on student motivation. At the former faculty, self-efficacy significantly increased throughout the first year (two-tailed $t(103) = -2,95$, $p < .001$), while the latter faculty shows significantly higher scores on extrinsic motivation at the end of the first year (two-tailed $t(15) = -2,26$, $p < .05$). The faculty of Social Work shows no significant differences in the mean student motivation scores of pre and post measurement.

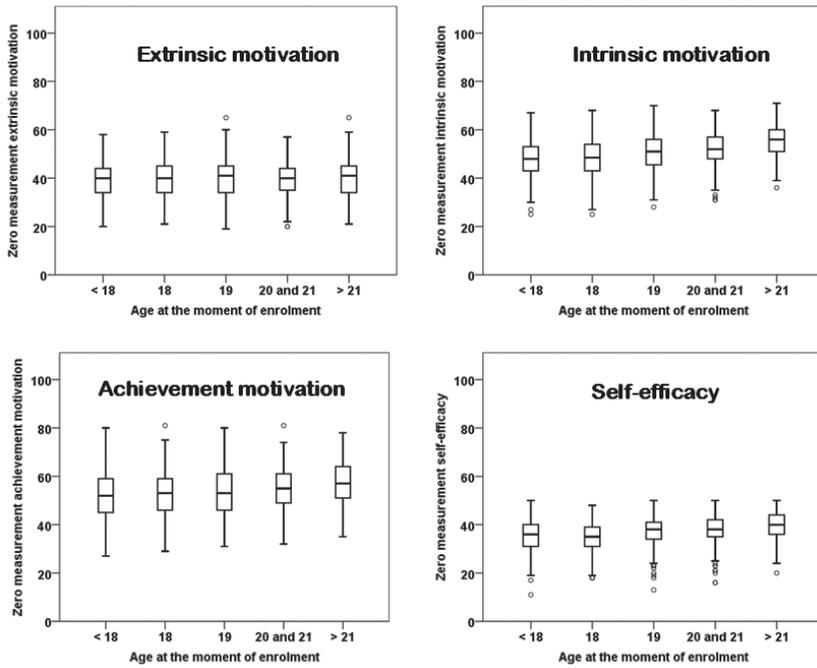


Figure 1. Pre measurement descriptive statistics on student motivation, taken by age at the moment of enrolment

Table 4. Comparison^a of pre and post measurement mean scores on student motivation, taken by faculty

Faculty	Statistic	Extrinsic motivation		Intrinsic motivation		Achievement motivation		Self-efficacy	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
Business & Economics	Mean	40.84	41.21	49.48	50.05	55.79	54.92	36.23	37.87***
	SD	6.70	7.17	7.14	7.11	8.65	9.77	6.37	5.81
Information Sciences	Mean	35.06	38.19*	48.69	46.56	47.00	49.50	35.69	36.88
	SD	5.87	6.03	7.68	10.24	9.54	10.43	5.47	5.90
Social Work	Mean	33.38	35.58	51.54	51.88	51.54	52.71	34.38	36.00
	SD	7.00	7.52	6.91	7.38	10.25	9.59	7.08	6.83
Total	Mean	38.95	39.94	49.74	49.97	54.10	53.95	35.86	37.44
	SD	7.30	7.39	7.16	7.62	9.44	9.91	6.40	6.00

Note.

^a n = 144.

*p < .05. **p < .01. ***p < .001.

First-year influence of career guidance on student motivation

To determine the first-year influence of career guidance on student motivation, linear regression analyses were conducted at each level of the three faculties involved as well as at overall level. Overall, post measurement score on the distinct motivational scales turned out to be only influenced by the corresponding pre measurement score and proved to be unaffected by the other included predictors. In other words, the level of initial student motivation fully determines the corresponding level at the end of the first year. Moreover, this latter level is evidently not in any way affected by career guidance. Finally, the observed differences in initial student motivation related to age obviously do not further enhance first-year student motivation. At faculty level, significant influences of career guidance and age were only observed at the faculties of Business & Economics and Social Work as will be discussed below.

Results from the regression analysis at the faculty of Business & Economics are presented in Table 5.

Table 5: Linear regression analysis of post measurement self-efficacy, faculty of Business & Economics

Predictor	B	SE B	β
Age	0.86	.40	.24 [*]
Gender	0.59	.98	.05
Preliminary education	-0.81	1.30	-.07
Pre measurement self-efficacy	0.56	.08	.61 ^{***}
Career guidance grade point	1.11	.56	.16 [*]
Constant	-4.24	8.06	

Note. $R^2 = .37$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

At the faculty of Business & Economics, post measurement level of self-efficacy is influenced by pre measurement level of self-efficacy as well as student age and first-year career guidance grade point. Having significant positive B coefficients, post measurement level of self-efficacy increases as both student age and career guidance grade point rise.

Results from the regression analysis at the faculty of Social Work are presented in Table 6.

Table 6: Linear regression analysis of post measurement achievement motivation, faculty of Social Work

Predictor	B	SE B	β
Age	-0.10	.74	-.03
Gender	-10.23	7.73	-.22
Preliminary education	1.63	1.59	.18
Pre measurement achievement motivation	0.60	.18	.65**
Career guidance grade point	4.56	2.08	.39*
Constant	4.01	21.16	

Note. $R^2 = .56$.

* $p < .05$. ** $p < .01$.

At the faculty of Social Work, post measurement level of achievement motivation is influenced by pre measurement level of achievement motivation as well as the first-year career guidance grade point. Considering the absolute value of the significant positive B coefficient, the influence of career guidance on the post measurement level of achievement motivation can be seen as relatively strong.

At the faculty of Information Sciences, pre measurement levels of extrinsic, intrinsic as well as achievement motivation had a significant influence on the corresponding post measurement levels. In case of self-efficacy, no significant influence of pre measurement level on post measurement level was found. Finally, for none of the motivational scales a significant influence of the predictors career guidance, gender, age and preliminary education on the post measurement level of student motivation was found.

Discussion

As our results show, the focus on student reflection conceivably explains the differences between faculties regarding the positive influences of career guidance on first-year student motivation. At overall level of analysis, initial student motivation fully determined the corresponding level at the end of the first year. Despite considerable differences in the level of initial student motivation (in particular related to gender, age and preliminary education), career guidance in itself obviously did not enhance first-year student motivation. In addition, the influence of gender, age and preliminary education on student motivation only concerned the initial level of student motivation, as these predictors did not influence the development of student motivation during the first year of study. Obviously, enhancing student reflection is important for the teaching and learning of new knowledge or skills because reflection affects how instructors and students interact with learning materials they encounter.

Furthermore, the observed relatively stable level of student motivation throughout the first year is intriguing, because it runs contrary to former research (Busse 2011) which indicates motivational loss in the first year of study because of the impact the transition from secondary school to university has on first-year students. As discussed, the reason for this motivational loss was a lack of engagement in the first year, caused by an inappropriate perceived level of challenge that students were exposed to at university and the fact that first-year students might at first not be aware that they can adjust this level of challenge (Busse 2011). Therefore, an interesting issue to be addressed below concerns our finding that first-year student motivation at Windesheim UAS remained relatively stable while elsewhere student motivation waned during the first year of study.

Taking the three faculties together, the post measurement scores on the distinct motivational scales turned out to be only influenced by the corresponding pre measurement scores and proved to be unaffected by the other included predictors. In other words, at this overall level of analysis, initial student motivation fully determined the corresponding level at the end of the first year. Despite considerable differences in the level of initial student motivation (in particular related to gender, age and preliminary education), career guidance obviously did not enhance first-year student motivation in the competence-based educational system of Windesheim UAS. In addition, gender, age and preliminary education only affected the pre measurement level of student motivation, not the post measurement level.

At the level of individual faculties, however, in two (out of three) faculties and within two (out of four) motivational scales we observed significant positive influences of career guidance on first-year student motivation. While the faculty of Business & Economics showed a significant contribution of career guidance to the level of self-efficacy at the end of the first year, career guidance at the faculty of Social Work significantly contributed to the level of achievement motivation at the end of the first year. Remarkably, the faculty of Information Sciences showed no significant influence of career guidance on the post measurement level of any of the distinguished motivational scales.

In sum, two (out of three) faculties showed significant positive influences of career guidance on first-year student motivation whereas at overall level no significant influences were found. Consequently, an interesting topic is to what extent (similarities and differences in) the way career guidance is offered at faculties of Windesheim UAS can elucidate our findings.

At all faculties, career guidance spanned the entire four years of student life from admissions to graduation and was offered by a career guidance teacher as individual, peer group as well as class guidance. Although the portfolio was one of the main products of first-year career guidance at all faculties, the faculties of Business & Economics and Social Work both added extra assignments to this portfolio compared to the faculty of Information Sciences. At the faculty of Social Work, the portfolio additionally included a curriculum vitae and a student reflection on the career guidance course. At the faculty of Business & Economics, the portfolio additionally included a letter of application to be enrolled in the remaining section of the bachelor's programme, which was assessed by an independent assessor based on an interview with the student. Furthermore, students were explicitly taught to reflect on their own strengths and weaknesses, being the main purpose of the personal development plan. In sum, student reflection played a major role in the first-year career guidance courses of both faculties. Moreover, the focus on student reflection conceivably explains the differences between faculties regarding the positive influences of career guidance on first-year student motivation.

This major role of student reflection and its impact on student motivation has been corroborated in previous research. As McNamara (2004) argues, enhancing student reflection is important for the teaching and learning of new knowledge or skills because reflection affects how instructors and students interact with learning materials they encounter. Furthermore, good reflection abilities enhance student motivation, comprehension and performance in learning new knowledge

or skills (Paris and Ayres 1994). Therefore, it is of great importance to develop and strengthen student reflection abilities to help them engage new learning materials in a meaningful manner (Lin et al. 2014). As our results show, career guidance at both the faculty of Business & Economics and the faculty of Social Work obviously enhances these abilities and thus prevents first-year motivational loss. In view of the aforementioned research of Busse (2011), this finding may indicate that student reflection enhances students' awareness they can adjust the level of challenge they are exposed to at university and thus helps students to overcome first-year motivational loss. Concerning career guidance, we therefore strongly recommend to incorporate student reflection as a distinctive part in all first-year career guidance courses.

Limitations

We are well aware that this study has its limitations. For reasons of comparability, our study investigated only a limited number of faculties. As discussed, we could only include three out of ten faculties, since the other faculties of Windesheim UAS had little or no dispersion of career guidance grade points. However, our participating students still accounted for more than twenty-five percent of total first-year enrolments of Windesheim UAS in 2011.

Direction for future research

One of the issues that remains to be addressed, concerns our remarkable finding that career guidance at the one faculty contributed to the level of *self-efficacy* at the end of the first year, while at the other faculty the level of *achievement motivation* at the end of the first year was influenced. Although student reflection was a distinctive part of career guidance at both faculties, the way it influences student motivation is obviously ambiguous. As such, we recommend closer investigation of the way student reflection influences first-year student motivation. Recent investigations into the relations between self-efficacy and reflective thinking indicated that both self-efficacy and reflective thinking contribute to the predictions of quality learning outcomes and achievements. However, preliminary evidence at presents warrants for further research examination (Phan 2013).

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