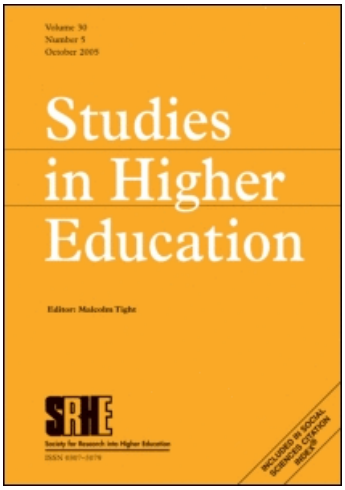

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Marinka Kuijpers[a]; Frans Meijers[a]
[a] The Hague University, 2500 CH The Hague, the Netherlands

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Learning for now or later? Career competencies among students in higher vocational education in the Netherlands

Marinka Kuijpers and Frans Meijers*

The Hague University, P.O. 19320, 2500 CH The Hague, the Netherlands

This article focuses on the question: which aspects of a learning environment, aimed at fostering career learning, correspond with the development of career competencies among university students in the Netherlands? A questionnaire-based study was carried out among 4820 students and 371 career counsellors in 11 universities. Four career competencies were identified: career reflection (reflective behaviour), work exploration (exploring behaviour), career action (proactive behaviour) and networking (interactive behaviour). The results show that the existence of these competencies among students in higher vocational education correlates with a learning environment that is characterized by a practice-based and inquiry-based curriculum, which offers students the opportunity to engage in a career dialogue. The existence of a career dialogue, in which students can discuss the personal and societal relevance of the real-life problems they encounter, and the experiences they have, proves to be essential. Without a dialogue the learning potential of a practice- and inquiry-based curriculum is limited.

Keywords: career development; career choice; educational innovation; educational quality; learning environment

Introduction

Since the 1980s the range of possible occupational and educational choices has increased dramatically in western societies (Organisation for Economic Cooperation and Development [OECD] 2004). As a result, individuals are faced with a growing pressure to make choices, while at the same time, and due to flexibilization of employment relationships (Arthur, Inkson, and Pringle 1999) and individualization within society (Beck 1994), less and less direction is provided (demonstrated, for example, by the unpredictability of careers; see Arthur, Khapova, and Wilderom 2005). The individual is expected to demonstrate more and more self-directedness both on the labour market (Kuijpers and Scheerens 2006; Savickas 2000) and in society as a whole (Giddens 1991). In addition, the personalities of employees in a service economy are becoming an increasingly important production factor (Hochschild, 1983; Sennett, 1998). Thirty years ago, 100% of the vacancy descriptions for jobs requiring higher education in the Netherlands clearly noted what the required education was, 50% described the necessary work experience and 20% outlined the preferred interest for the job. Nowadays, all vacancy descriptions contain general competencies, of which half relate to employability and personal development in terms of flexibility, learning ability, and reflective and proactive behaviour. Even for jobs in for-profit organizations,

*Corresponding author. Email: fmeijers@worldonline.nl

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qualities such as passion, ambition and self-development are listed under the requirements (Kuijpers 2007).

Although in western societies employers expect new employees to have more knowledge, more skills and – moreover – that they will be more intrinsically motivated than three decades ago (Bailey, Hughes, and Moore 2004), Dutch higher vocational education does not fulfil these promises. There are serious doubts about the level of knowledge and skills students have (OECD 2006, 2010). Zijlstra and Meijers (2006) showed an absence of intrinsic motivation among the majority of students – see Light (2001) for comparable results in American universities. An important reason for these disappointing results is that most students fail to develop a clear career wish (let alone a career identity) during their time in university, leading to rather random career choices and a 30–50% drop-out rate during university (Kuijpers and Meijers 2009; Sá 2006).

Why is it the task of universities to invest in career guidance, one might ask? We maintain that universities cannot leave this task to the public or private sector for two key reasons. First, universities are funded by the government and are therefore expected to prepare their students adequately for life in our individualized society as well as for the labour market (Kronman 2007; Trilling and Fadel 2009; Wagner 2010). Second, organizations in the private and public sectors often lack the knowledge and the motivation to guide young people on their career paths (Johnson 2009; OECD 2010). They assume – as their personnel advertisements frequently demonstrate – that aspiring workers have made a clear career choice when they enter an organization. Universities can also not leave the task to students, as brain research shows they are seldom able to make these choices without guidance (Schwartz 2004; Stuss and Anderson 2003).

It is for this reason that, in recent years, universities in the European Union (EU) are increasingly investing in career guidance (Company, 2009). At the same time, it is clear that the managers responsible for guidance have little or no vision regarding career guidance and counselling; they simply invest in doing more of the same (i.e. repeating the same established but ineffective guidance activities) (Meijers 2008). In part, the lack of a clear vision among managers is the result of the lack of consensus about what constitutes effective career guidance in an educational context (Law 2005; OECD 2004).

Career learning: theoretical perspectives

In western nations, career guidance in education is primarily based on the trait-and-factor approach (European Commission and OECD 2004; Irving and Malik 2005; Sultana 2004; Watts and Sultana 2004). In this approach, which – through the work of Holland (1973, 1985) – has had a huge influence on the shape and content of career guidance and counselling in education, the concepts ‘informed choice’ and ‘decision making’ are key. A good career choice is made when the personality and the talents of a potential employee match with the required knowledge and skills of the job in question. With this in mind, it is assumed that counsellors and teachers need only provide students with reliable information about their talents, and with information about the knowledge and skills that are needed to carry out particular jobs. The idea here is that students can then make rational choices regarding their careers.

The limitations of this model are now becoming evident. One’s career path has become more and more unpredictable (e.g. the notion of a boundaryless career:

Arthur, Khapova, and Wilderom 2005) and therefore it is increasingly difficult to make rational and information-based career choices (Guindon and Hanna 2002; Mitchell, Levin, and Krumboltz 1999). Knowing that it is impossible to provide accurate information about the individual and/or the labour market, it is clear that career guidance and counselling in the traditional way is becoming more and more obsolete (Hughes and Karp 2004; Richard 2005). The result is not advantageous for students, especially when one considers that 'as the educational system multiplies choices, and in a market-based system the consequences of choices become ever more important, actual responsibility for making decisions falls mainly on students' (Connell 2003, 245). Students should not be provided with more (or even better) information just before a decision needs to be made, but should be helped to learn 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. Kuijpers and Scheerens (2006) and Kuijpers, Schyns, and Scheerens (2006) identify 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). It is clear that developing career competencies is a higher-order learning process that needs a non-traditional learning environment. This begs the question as to what a powerful career-learning environment really is and places finding that out firmly on the agenda.

Career learning in education

The first career-development theories that contained a learning perspective emphasized reproductive learning (i.e. learning whereby no personal meaning is attributed to the information; Bateson 1979). These are the theories that build forth on Bandura's (1986) social-cognitive theory (Krumboltz 1996; Krumboltz and Worthington 1999; Lent, Hackett, and Brown 1999). In a quickly changing environment, it is difficult to adequately describe career learning processes using social-cognitive learning theories. In the current global economy, jobs change so quickly that it is not easy for an increasing number of individuals to learn vicariously, while the presence of the boundaryless career makes it problematic to develop concrete outcome expectations with regard to one's career path (Guindon and Hanna 2002; Mitchell, Levin, and Krumboltz 1999). To understand career development in a turbulent context a more 'agentic theory' is needed. Such an approach is offered by constructivist learning theory (Fox 2001; Hua Liu and Matthews 2005; Savickas 2002, 2005); it is based on the idea that learning is a process in which the learner transforms information into meaningful knowledge. It is a process of 'becoming critically aware of one's own tacit assumptions and expectations and those of others and assessing their relevance for making an interpretation' (Mezirow 2000, 4). In the constructivist view, meaning is constructed – by creating a story – from information through a dialogue with oneself and others about real-life experiences (Bruner 1990; Hermans and Hermans-Konopka 2010).

In an educational context, career stories (Savickas 2002, 2005) emerge in a dialogue in which personal meaning is attached to concrete experiences with work: the learning environment has to be practice-based and dialogical (Bailey, Hughes,

and Moore 2004; Hodkinson and Sparkes 1997; Kuijpers, Meijers, and Gundy 2011). In order to achieve a dialogue, the thoughts and feelings of students with respect to their work experiences must be given a central place in the conversation (Bardick et al. 2006; Philip 2001). The dialogue cannot be a one-off discussion, but must be a form of ongoing support (Harrington and Harrigan 2006; Riverin-Simard 2000). Students, however, do not seem to participate in a career dialogue willingly; they are hardly motivated to participate in reflective activities about their careers when these are prescribed as part of the curriculum (Law, Meijers, and Wijers 2002; Mittendorff 2010). Due to the highly theoretical nature of the curriculum, they do not see the connection between these reflective activities and 'real life' and, therefore, regard reflection with the help of portfolios or personal development plans as useless (Mittendorff et al. 2008). Research by Mittendorff (2010) and Weick, Sutcliffe, and Obstfeld (2005) suggests that a learning environment in which students can make their own choices improves their motivation and ability to give direction to their careers.

A career-oriented learning environment (that is, a learning environment that stimulates the development and application of career competencies) is – taking into account the research findings presented – probably an environment in which the student can get real-life work experience (i.e. a problem-based curriculum), have a say in his/her own learning process (i.e. an inquiry-based curriculum), and – finally – can participate in a career-oriented dialogue about his/her learning experiences with work. Such a learning environment differs in many ways from a conventional learning environment:

- not primarily focused on information transfer but oriented towards obtaining actual work experiences;
- not focused on a monologue (from teacher to student) but on a dialogue between teacher and student;
- not focused on interventions at certain institutionally determined decision-making moments but continued guidance;
- not only taking cognition into consideration but emotion as well;
- not geared towards a standard learning route but focused on the creation of more choices and the promotion of mutual participation.

Research question and research model

However, empirical evidence which shows that a career-oriented learning environment as defined above will enhance the development of career competencies is lacking. The research presented here aims to provide an answer to the following questions:

(1) To what extent is the learning environment universities offer their students career oriented?
(2) Which aspects of the learning environment are related to the use of career competencies by students?

Besides the characteristics of the learning environment previously mentioned, personal variables play a role in whether career competencies are learned. First, the degree to which students develop a career depends on their gender. Boys and girls seem to have more career interest and a higher degree of independence in work in

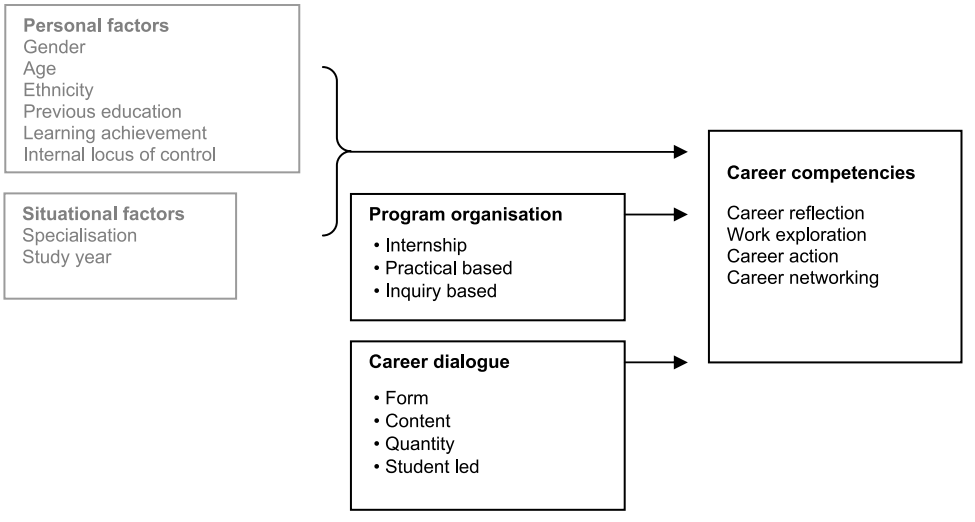

Figure 1. Research model.

career areas where they believe more of their own genders are employed (Ji, Lapan, and Tate 2004). From research done by Patton, Bartrum, and Creed (2004), it is clear that girls score higher on competence with regard to making career choices than boys; however, boys turned out to be surer of their career choices. Age is also related to career choice and competence: the older students are, the better they prepare for career choices (Creed, Prideaux, and Patton 2005), and the more sure they are about their careers (Rowland 2004). Patton, Bartrum, and Creed (2004) show that an internal locus of control contributes to career planning, self-knowledge, knowledge of the work attitude and better career choices. Rotter (1966) uses the concept 'locus of control' to express how people perceive the connection between their own actions and the outcomes that result. If a person attributes their success or failure to their own actions, one speaks of an internal locus of control.

The variables that have been taken into consideration and the relationships that have been analysed in this study are shown in Figure 1. We have formulated two hypotheses:

(1) A career-related programme organization that is practice- and inquiry-based advances the use of career competencies by students.
(2) Career dialogue contributes more to the use of career competencies by students than personal factors.

Method

Sample

The study sample is drawn mainly from students in their second and third year at eleven universities for professional development (which until a few years ago were called polytechnics). This sample was drawn via a multi-stage process. In the first stage, representatives of all 41 universities for professional development in the Netherlands were invited to a conference concerning career guidance and counselling,

organized by LOPA (the National Platform for Personnel and Labor) in 2007. Representatives of the attending universities were approached by the researchers and asked whether they would like to participate in the study. Teachers – and their students – were then selected by each positively responding university, and were asked to participate. Participating universities were spread throughout the Netherlands, and covered inner-city as well as rural regions. There are no significant differences between participating and non-participating universities with respect to size, university population (especially with respect to gender and ethnicity) and environment (urban vs. rural). However, participating departments of the universities are probably more positive towards career guidance and counselling than non-participating departments.

Construction of instruments

The instrument used for collecting data from the students, a self-evaluation-based questionnaire of 129 items, was developed in five phases. First, an analysis was made of existing questionnaires in the area of career development. Since no existing instrument was found that was directly useful for this study, the questionnaire of Kuijpers and Scheerens (2006) became the foundation of the instrument used here to measure career competencies. In addition, the theoretical framework provided insight into characteristics of programme orientation, and the role of dialogue in student guidance. Relevant items were generated on the basis of these two sources. Second, initial, qualitative interviews were conducted with students, teachers and career counsellors, in order to operationalize relevant variables. Third, a pilot questionnaire, based on the previous two phases, was presented to 18 students by means of interviews. Each individual item of this pilot questionnaire was discussed with each student. The questionnaire was consequently amended and further evaluated by a language expert and a methodologist. Fourth, the questionnaire was presented to 200 students for an examination of the psychometric performance of the items and scales, with the intention of possibly culling the number of items for the definitive questionnaire. Finally, the results of the process were presented to a board of experts in the field of career development.

The selected items were presented to each of the students in the form of a written, self-completion questionnaire. The response categories of the items vary from 1 = strongly disagree to 4 = strongly agree. On items about the learning environment the response category ‘I don’t know’ was added. The questionnaire consisted of the following components.

Career competencies

The instrument used for measuring career competencies was based on a written, self-assessment questionnaire developed for the workplace. Kuijpers and Scheerens (2006) originally distinguished five career competencies; in the present case a four-factor model of career competencies fitted best: career reflection (characterized by reflective behaviour), work exploration (characterized by exploring behaviour), career action (characterized by proactive behaviour) and networking (characterized by interactive behaviour). Example items are:

Career reflection:

- I take the initiative to ask others about my strengths and weaknesses.

- I use experiences that make me feel happy in order to find out what I really consider important in life.

Work exploration:

- I explore what the problems are in the work that I study for.
- I explore whether the ways these problems are dealt with fit me.

Career action:

- I arrange guidance that I think I need myself.
- I do extra things in my training, so that I have a greater chance of getting interesting/enjoyable work.

Networking:

- I talk to skilled people about my future plans.
- I ask people I know about developments in the field of work I study in.

Career-oriented program organization

The degree to which a programme's organization was practice- and inquiry-based was evaluated by students as well as their teachers with the same questions. Example items:

Practice-based programme organization:

- The university gives me the opportunity to find out in practice what kind of work best suits me.
- Experiences outside the university (like work, hobbies and working as a volunteer) are recognized in my study.

Inquiry-based program organization:

- In the program I can make choices about what I learn.
- I have my own learning goals that differ from others.

In addition, students were asked how many job placements they had had.

Career-oriented guidance

Students were asked with whom and how often they talk about their learning and/or professional career (never, 1–4 times a year, monthly or weekly) with a university career counsellor, a career coach (often a teacher), a mentor (also a teacher), a practical guide at the workplace, a teacher or with fellow students in a group conversation. Both students and teachers were asked who determines the content of the career counselling discussions. Possible responses were as follows: mostly the teacher, slightly more often the teacher, both equally divided, slightly more often the student, mostly the student.

Then students and teachers were asked to what extent certain contents and forms are addressed in the career conversation. Forms of conversation that were measured were: helping form and reflective-active form. Example items from the helping form include: 'My teacher gives me lots of information about possible further education', and for the reflective-active form include: 'My teacher makes me think about my future' and 'My teacher encourages me to learn new things that I find challenging'. Contents of conversations that were measured were study performance, images about self and future, and concrete actions regarding work and career.

Personal- and situation-bound factors

Various situational and personal student variables were included in the questionnaire. Situational variables were year of study and the type of programme that students were enrolled in. The programmes were divided into the following groups: technical studies, economics, agriculture, healthcare and education. Personal variables were gender, age, ethnicity, previous education, internal locus of control and study achievements. Internal locus of control was measured by six items (Den Hertog 1992; Rotter 1966). Achievements were used as indicators of cognitive abilities, based on the assumption that the degree to which individuals develop competencies might be partly dependent upon their cognitive abilities (Van Merriënboer and De Croock 2002). Students were therefore asked to respond to the statement: 'In the past 3 months, I received only pass grades'.

Statistical analyses

To investigate the extent to which a career-oriented learning environment contributes to the development of career competencies for students, regression analyses were carried out. The four career competency scales were used as dependent variables and the variables describing the learning environment were used as independent variables. Individual – and situational – characteristics (gender, age, previous education, locus of control, study results, and study year and programme-type) were included as potential confounders.

The total amount of explained variance was examined, and a block-wise regression was also employed to establish the contribution (to the explained variance) of the learning environment characteristics, in addition to the subject and situational characteristics. Due to the hierarchical nature of the data (students within classes within universities), multilevel regression was conducted, using the MLWIN v.2.0 program (Rasbash et al. 2005). All continuous variables were normalized to a mean of zero and a standard deviation of 1.0. All hypotheses were tested two-sided and p-values less than .05 were considered to be significant, unless indicated otherwise.

Results

Sample accrual

A total of 4820 students from different departments of 11 universities for professional development participated in the study. The students are studying at departments of healthcare (22%), technical studies (24%), economics (30%), education (16%) and agriculture (8%). Of all students at Dutch universities taking professional

development in the course year 2008–9, 22.4% are registered in healthcare, 16.4% in technical studies, 37.2% in economics, 1.2% in agriculture and 22.8% in education (Centraal Bureau voor de Statistiek 2010, 254). In the research group, students taking economics and education are somewhat under-represented, and those taking technical studies and agriculture are over-represented.

Sample characteristics

Student learning environment characteristics are displayed in Table 1. Slightly fewer than half of the responding students were male, and 18% of the students have at least one parent who was born outside the Netherlands. Their average age was 21 years; this variable is also quite skewed, with a number of students being older than 30 years. The previous education of most of the students is general secondary education: 56% have an education from a school of higher general secondary education and 12% have pre-university education. Nearly 29% of the students completed secondary vocational training and are therefore certified professionals, but at a lower level than their current study trains them for. The research group as it relates to previous schooling, gender and age, accurately represents the student population involved in professional development at Dutch universities. (Centraal Bureau voor de Statistiek 2010, 254)

Two-thirds of the students score reasonably high on internal locus of control (> 3), with the average score 3.25 on a scale from 1 to 4. The learning achievements are, for most of the students, (60%) satisfactory for the most part; 11% of the students have mostly low marks and 24% of the students have only high marks. A large group (41%) of students are in their second year of study; only 12% are first-year students, 22% are in their third year and 25% are in their fourth year or have studied for more than four years.

All multi-item scales have an adequate Cronbach's alpha (i.e. ≥ 0.70), with the exception of the inquiry-based curriculum scale, which only had an alpha equal to 0.68.

Learning environment

On average students did work placements for a total of 4.8 months: 27% of the students did not have work placements at all and 20% had more than six months' workplace experience. Obviously the longer the student has been studying the more work placements he/she will have done ($p < .001$; F: 57.64). First-year students had an average of 3 months of work placements, second-year students had 3.4 months, third-year students 6.1 months and fourth-year students 7.3 months. The students do not find their studies to be 'practice based' – they get little experience with real-life work situations or with the realities of the working world, and the university barely encourages them to gain experience outside of university. The degree to which students consider the curriculum inquiry-based is estimated to be even lower; the average being 2.39. A total of 64% of respondents responded negatively when asked if they have a choice as to what they might learn in their programme; more than a third (37%) replied that they are made to feel jointly responsible for their own learning in their programme, but are left alone in that. Only 23% reported that they are learning – step by step – how they may contribute to their own learning. The degree to which the training is considered both practice-oriented and inquiry-based is low among students in the technical and economic streams ($p < .001$; F:65,961 and $p < 00.1$; F: 58,957 respectively).

Most students have only between one and four talks about their career and studies; 26% of students report that they determine the content of their career conversation

Table 1. Learning environment, personal, and situational characteristics: students' questionnaire (n = 4820).

Student characteristics			% missing	Cronbach's alpha	Number items
	n	%			
Gender Male	2256	46.8	1		1
Ethnicity Non-Dutch	842	17.5	1.6		1
Preliminary education:			1.3		
Higher general secondary education	2683	55.9			
Pre-university education	575	11.9			
Secondary vocational education	1390	28.8			1
Rest	100	3.4			
	Mean	SD			
Age	20.9	2.8	3.6		1
Internal locus of control	3.25	.43	1	.70	6
Learning Achievement	2.99	.87	0		1
Situational Characteristics					
Study year	2.71	1.18	6.5		1
Specialization:	*n*	%	0.3		1
Healthcare	1050	21.8			
Technical	1180	24.5			
Economy	1409	29.2			
Education	789	16.4			
Agriculture	378	7.8			
	Mean	SD			
Learning Environment Characteristics					
Internships (in months)	4.78	7.15	9.5		1
Practice-based curriculum	2.61	.57	1.9	.74	8
Inquiry-based curriculum	2.39	.51	0.2	.68	7
Quantity of guidance conversation with career counselor	2.29	.76	0.6		1
Quantity of guidance conversation with mentor	1.68	.87	1.3		1
Student-led conversation	2.67	1.32	11.6		1
Helping form of conversation	2.54	.64	1.5	.88	8
Career form of conversation	2.48	.63	1.5	.82	6
Study content of conversation	2.77	.58	4.5	.70	5
Self and future image content	2.24	.65	5.2	.81	6
Work and career action content	2.21	.66	5.4	.85	6
Outcome Measures					
Career Reflection	2.57	.50	0.1	.84	11
Work Exploration	2.43	.55	0.1	.79	7
Career Action	2.25	.55	0	.74	7
Career Networking	2.38	.66	0.3	.83	6

more often that the person counselling them. Students in the later stages experience significantly higher levels of contribution to their career and study conversations than younger students ($p < .001$; F: 17,34).

These types of conversations are not very useful (in, for instance, helping students to feel understood, developing trust and receiving advice), and are even less effective in encouraging reflection or stimulating action. The low scores do not mean there is not enough trust: 79% of respondents report that their guidance counsellor can be trusted completely. The low scores are caused, for the most part, because students report that they barely receive information from their counsellor about subsequent courses/programmes (68%) and about the choices they are required to make (55%). Almost a third of students do not feel challenged by the conversations. Students from the healthcare and education sector experience the conversations as significantly more helpful and reflective/leading to action than students of other streams ($p < .001$; F:32,49 and $p < .001$; F:44,30 respectively). Younger students find the conversations more helpful and reflective (and stimulating action) than students in later stages ($p < .005$; F:4,00 and $p < .005$; F:4,40 respectively).

The dominant topic of conversation is study progress (average score of 2.77); little or no attention is paid to self and visualizing the future (score 2.24) or to actual action-oriented advice regarding work and career (score 2.21). In the healthcare and education sectors, students report significantly more conversations about study progress than in the other sectors ($p < .001$; F: 37,00). In the technical and economics sectors, significantly fewer conversations are about self and visualizing the future ($p < .001$; F:62,16), and work and career action ($p < .001$; F: 31,66), than in other sectors. Finally, in the first year, significantly more is spoken about self and visualizing the future than in later stages ($p < .005$: F:4,95).

Career competencies' contributing factors

The regression coefficients and standard errors for the multilevel regressions for each of the four independent variables are shown in Table 2. The percentage of explained variance for the four dependent variables varies from 19% (career reflection) to 27% (career action), which may be characterized as having a medium to large effect size (Cohen 1988). The amount of variance due to differences between universities and between classes is negligible, even though the class variance is statistically significant.

The mean scores for students on career competencies are significantly different for various personal factors. Age and internal locus of control are significantly related to all of the career competencies. Learning achievement and previous education (secondary vocational education) are related to each of the career competencies except for career reflection. Ethnicity is related to career reflection, and men have higher means on work exploration and career networking than women.

The mean scores for students are also significantly different between the various specializations. Students in agriculture have significantly smaller means for career reflection and larger means for career action and networking. Students in technical specializations score significantly lower on work exploration but higher on career action. As students progress in their study, they have higher means on work exploration and career networking.

With respect to the learning environment variables, a practice- and inquiry-based curriculum is significantly beneficial for all four outcome variables, with a practice-based curriculum having larger effect sizes. Also, career conversation contributes

Table 2. Results of multilevel regression analyses with career competencies as dependent variables (n = 4650).

	Career reflection	Work exploration	Career action	Career networking
Student factors				
Age	.078 (.015)*	.088 (.015)*	.086 (.015)*	.053 (.015)*
Gender (boy with respect to girl) (c)	−.032 (.031)	.089 (.030)*	.027 (.029)	.072 (.030)*
Ethnicity (non-Dutch with respect to Dutch) (c)	.078 (.036)*	.039 (.035)	.045 (.034)	.016 (.035)
Previous education				
Pre-university (with respect to higher general secondary education) (c)	.017 (.043)	−.067 (.041)	.016 (.040)	−.043 (.041)
Secondary vocational education (with respect to higher general secondary education) (c)	.045 (.033)	.110 (.031)*	.116 (.031)*	.194 (.032)*
Other (with respect to higher general secondary education) (c)	.138 (.095)	.033 (.091)	.213 (.090)*	.121 (.091)
Learning achievement	.026 (.014)	.040 (.013)*	.058 (.013)*	.034 (.013)*
Internal locus of control	.184 (.013)*	.157 (.013)*	.138 (.013)*	.131 (.013)*
Stiuational factors				
Specializion:				
Technical (with respect to Health Care) (c)	−.133(.075)	−.204 (.074)*	.125 (.061)*	−.039 (.078)
Economics (with respect to Health Care) (c)	−.065 (.071)	−.098 (.071)	−.006 (.057)	−.022 (.075)
Education (with respect to Health Care) (c)	−.156 (.93)	−.163 (.093)	.002 (.072)	−.093 (.100)
Agriculture (with respect to Health Care) (c)	−.182 (.088)*	−.074 (.087)	.315 (.072)*	.291 (.091)*
Study year	.004 (.014)	.038 (.014)*	.007 (.013)	.038 (.014)*
Learning Environment factors				
Internships (in months)	−.002 (.015)	−.001 (.014)	.006 (.013)	.020 (.014)
Practice-based curriculum	.178 (.016)*	.298 (.015)*	.243 (.015)*	.313 (.015)*
Inquiry-based curriculum	.092 (.016)*	.092 (.015)*	.153 (.015)*	.051 (.015)*
Quantity of guidance conversation with career counsellor	.020 (.015)	−.014 (.015)	.012 (.014)	.015 (.015)
Quantity of guidance conversation with mentor	−.001 (.015)	.013 (.014)	.052 (.014)*	.012 (.015)
Student-led conversation	.055 (.014)*	.040 (.013)*	.087 (.013)*	.050 (.013)*

(*Continued.*)

Table 2. (*Continued.*)

	Career reflection	Work exploration	Career action	Career networking
Helping form of conversation	−.140 (.024)*	−.141 (.023)*	−.110 (.022)*	−.115 (.023)*
Career form of conversation	.230 (.024)*	.147 (.023)*	.136 (.023)*	.063 (.023)*
Study content of conversation	−.006 (.017)	−.018 (.017)	−.069 (.016)*	−.023 (.017)
Self and future image content	.086 (.022)*	.016 (.021)	.070 (.021)*	.060 (.021)*
Work and career action content	−.012 (.022)	.122 (.021)*	.095 (.021)*	.128 (.021)*
School sector variance	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Class variance	.020 (.006)*	.021 (.006)*	.010 (.004)*	.025 (.007)*
Student variance	.771 (.016)*	.700 (.015)*	.692 (.014)*	.705 (.015)*
Total explained variance	.188 (19%)	.250 (25%)	.267 (27%)	.230 (23%)
Model improvement through addition of all variables	1007* (df 24)	1381* (df 24)	1508* (df 24)	1276* (df 24)
Model improvement through addition of learning environment	617* (df 11)	947* (df 11)	1085* (df 11)	906* (df 11)

Notes: All continuous variables were transformed to Z-scores. Regression coefficients are shown, with the standard errors between parentheses.
* $p < .05$.
(c): categorical variable.

considerably to the scores on career competencies. The quantity of career conversations with the mentor explains the score on career action. The extent to which the conversations are led by the students, as well as the extent to which the form of the conversations is reflective and stimulates action (career form) is significantly related to all four career competencies. However, a helping form of career conversation is negatively related to the career competencies. With regard to the content of career conversations, conversations about self and visualizing the future contribute significantly to the scores on career reflection, action and networking. Furthermore, students who talk about work and career action with their coaches have larger means on work exploration, career action and career networking. Conversations about the educational progression of the student are negatively related to career action.

The extra explained variance due to the total effect of all learning environment variables, in addition to personal and situational variables, varies from 11% to 19% for the four outcome variables. The corresponding effect sizes may be characterized as moderate. This means that, in order to promote career learning in students, students should be able to gain experiences in relevant professional practice in a way that reveals the demands, culture and developments of the profession. They also must have some influence on their own educational career (i.e. on what and how they learn) and should have fewer helping (i.e. informative and advisory) guidance conversations and more reflective and activating conversations – the kind in which they make a key contribution, and that include images of self and future, and ideas about concrete actions they can and/or must undertake regarding work and career.

Conclusion and discussion

The problem of high drop-out rate and absence of well-qualified professionals on the labour market is often associated with the absence of a clearly formulated career plan and a lack of perspective on a future direction (see Light 2001; Tinto 1993, 2000). That is why, in recent years, a lot has been invested in providing career guidance. However, these investments rarely bear fruit as it remains unclear what a truly powerful career-related learning environment is. In this study, a career-related learning environment is defined as an environment where students: (a) can gain real-life work experience, (b) are provided with opportunities for a dialogue in which experiences they have had are connected to their future and career wishes, and where they (c) increasingly have the chance to influence the course of their study and career progress (in particular by offering choices). Based on the literature review, two hypotheses can be formulated:

(1) A career-related programme organization that is practice- and inquiry-based advances the use of career competencies by students.
(2) Career dialogue contributes more to the use of career competencies by students than personal factors.

The results of this study show that a learning environment that stimulates real-life work experiences, that gives the students opportunities to influence their own course of study by offering them the opportunity to make choices, *and* also fosters a dialogue about these experiences and choices, contributes to the use of career competencies. There is clearly a positive relationship between a powerful career-related learning environment and career reflection (characterized by reflective behaviour), work exploration (characterized by exploring behaviour), career action (characterized by proactive behaviour) and networking (characterized by interactive behaviour). However, the curriculum of the universities studied here shows they are barely practice or inquiry based. In particular the curriculum falls short in the area of dialogue. For the most part, students talk to other students about their studies and career; conversations with teachers are much less frequent. The reason for this is probably due to students only speaking with their guidance counsellors 1–4 times a year and at institutionally determined times. Students have little influence on the conversations; only 26% of students say that they themselves determined what the content of the discussions were.

The results of this study clearly demonstrate that career competencies are used when:

- there is a reflective and action-stimulating form of dialogue; the conventional helping form of communication does not stimulate the use of career competencies by students;
- there is a career-related content to the dialogue; speaking about study progress and problems with the schooling or courses taken does not contribute to the use of career competencies; and
- students have a say in both the content and the progress of those conversations with their guidance counsellor.

The second hypothesis (that career dialogues contribute more to the use of career competencies by students than personal factors) is confirmed by the data as well. Although personal traits (in particular, internal locus of control) are clearly important

in developing career competencies, the career dialogue explains more of the variance of career competencies than personal factors do. This means that a career dialogue can compensate for personal factors. For example, men students tend to explore possible work environments more often than women students do. This can be compensated for by having women students talk about work and career action plans, and by encouraging them to explore work environments that fit with their (emerging) career wishes. Even when students have a lack of internal locus of control or low study achievements, these can be compensated for by a reflective and action-oriented dialogue about self and visualizing the future, and by gaining work experience and taking career actions.

That said, to achieve an actual career dialogue in the current education system has proven to be very difficult. Education barely changed in the twentieth century; the focus has been on the efficient transfer of established knowledge in the form of an established curriculum (Gatto 2009; Prawat 1998). The teacher was the central figure, who was seen to be enthusiastically transferring knowledge to students from his or her precise and well-defined area of expertise. Recent studies by Mittendorff et al. (2008), Mittendorff (2010) and Winters et al. (2009) show that the monologue is the norm in the classroom: teachers, even in guidance contexts, rarely speak with students but mostly to and about them. The question then is: how can 'unwilling' professionals be encouraged to work in new professional directions? Recent research by Hensel (2010) about the development of personality traits among professionals shows that the same learning environment that fosters the development of career competencies is required in this context. The starting point is to look at actual practical problems and to engage in a group dialogue about these (see also Collinson, Cook, and Conley 2006; Fenwick 2008; Garavan and McCarthy 2008; Rowe 2008). Constructing and attributing meaning when engaging in these dialogues is of key importance; the development of personality traits and qualities only takes place when those learning find the content meaningful (and that is something quite different from content being considered 'necessary'). The kind of dialogue that is needed here is described by Shotter (1993, 20) as 'a socially constructed myriad of spontaneous, responsive, practical, unselfconscious, but contested interactions', a form that stands directly opposed to 'the apparent representation of dialogue as converging upon a single ultimate "truth"'. Such a dialogue does not, by definition or in the first place, seek consensus, but assumes pluralism and even conflict (Chiva, Alegre, and Lapiedra 2007). The togetherness that lies at the heart of collective learning is, therefore, not based on pre-established truths, but a rich, shared meaning created and based on the ideas of all those involved (Easterby-Smith, Crossan, and Nicolini 2000). In order to achieve such a learning environment within the dominant educational culture, transformative leadership is essential (Geijsel and Meijers 2005; Geijsel, Meijers, and Wardekker 2007). However, such leadership has hitherto been rare in Dutch higher education.

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