Teacher professional development: The impact of career identity, self-construal and school climate

Master's thesis:
Educational Science and Technology
Human Resource Development
Faculty of Behavioural Sciences
University of Twente
Enschede, The Netherlands

Date:
March 2009

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Graduation Committee:
Dr. H. Yang
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Abstract

The goal of this study is to examine the relation between career identity and teacher professional development, and to investigate how individual teacher's self-construal and school climate have an influence on this relation. In total, 72 teachers from 10 primary and secondary schools participated in this study. They completed the questionnaire about their career identity, self-construal and school climate. Ten team leaders filled in the questionnaire to assess two types of teacher professional development. Results of the regression analyses show that there is a relation between work centrality and task-related professional development and a relation between desire of upward mobility and process-related professional development. Moreover, the interaction effect shows that the individual self does not impact the relation between work centrality (career identity) and task-related professional development. However, the collective self reinforces the impact of desire of upward mobility (career identity) on process-related professional development. Results also show that school climate has little to do with the relation between career identity and teacher professional development.

Acknowledgements

After studying for two and a half years at the University of Twente, I am pleased to present the report of my master thesis. At the beginning of my project, I did not know much about how to conduct and how to do a research, but now I have been able to have a taste of the life of an investigator. It was a challenge, with a lot of ups and downs, for me to do this research. A research is never a one-person work, without help from other people, it was impossible to write this report and to do the research. Therefore, I want to thank these people.

First, I want to thank my supervisor Dr. Huadong Yang. He taught me how to conduct a research, and how to write a report. Further, he supported me in academic thinking and shaping my arguments. Sometimes it was not easy for both of us because of a mutual misunderstanding, mostly due to the language. Nevertheless, I learnt a lot and because of his encouragement, I was motivated to get to the bottom to give it all and to bring this thesis to a proper end.

Next, I want to thank my father and Catherine Luiken for helping me with translating the questionnaires and for improving the English in this report.

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Then I want to thank my colleagues for listening to my stories when I was stuck and for motivating me to go on with my thesis.

Without the respondents, teachers and team leaders, this research could not be done. Participants, thank you for your participation in this research.

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Hengelo, February 2009

Index

Introduction

"Within schools teachers develop themselves in different ways; some want to become better teachers, some try to climb the career ladder and others try to manage both. I do not know why teachers develop in such a different ways, but I can imagine that some teachers find it more important to improve their teaching skills; their profession is their vocation, and others have the intention to become a (team) leader. I feel this has something to do with a person's "inside". However, if I look at my surroundings, I see that it is also important that the school motivates the teachers to develop. In my opinion there are several ways that a teacher can develop him / herself, but I am not sure if I am right." (Atie, 53 years old).

  "Teacher professional development" is a popular concept in the education science since a long time; researchers mention it because professional development is seen as a key component of school improvement plans (Ismat, 1996). Teachers themselves are concerned about it as changes in education are enormous and they need to stay up-to-date (Atie, 53 years old).

  Teacher professional development in this project refers to that educators require and enhance their professional knowledge and skills for maintaining a specific career path or for personal development. For example, in the above-mentioned case, teachers choose different ways in terms of their professional development. Previous research shows that many factors can influence teacher professional development, such as technology, which can support teacher learning (Marx, Blumenfeld, Krajcik & Soloway, 1998). The way teachers perceive their career (Kelchtermans, 1993) is also an influential factor for teacher professional development. A last example could be the school climate. This forms criteria for assessing teacher professional development (Little, 1993).

In this research, I take a psychological perspective to investigate teacher professional development, and specifically focus on three aspects: career identity, self-construal and school climate. Career identity is defined as how central one's career is to one's identity (London, 1983; 1993). Self-construal describes the individual's sense of self in relation to others (Markus & Kitayama, 1991). School climate stresses on the physical and psychological aspects of the school that are susceptible to change and that provide the preconditions necessary for teaching and learning to take place (Tableman, 2004). The reason that I give priority to these three aspects in teacher professional development due to the following considerations:

First, career identity is a structure of meanings in which the individual links his own motivation, interests and competencies with acceptable career roles (Meijers, 1998). Motivation can help teachers to develop in a specific way; this means that teachers develop in a way to achieve their career roles.

Second, the individual or collective self influences the behaviour and perception of people (Kelchtermans, 1993), which may further direct teachers to develop their professional in different ways.

Third, to use teacher professional development as an instrument of instructional improvement, schools must reorganize themselves to make substantial changes in the conditions of work for teachers (Elmore, 2002, chap. 6). In other words, if teachers want to develop the school should provide encouraging conditions.

According to above standing factors, it is important to investigate how those factors influence teacher professional development. In short, the research question of this study can be phrased as: *How do career identity, the self and school climate by itself and in combination with each other influence teacher professional development?*

By answering this question, this paper is structured as follows: first, two approaches of teacher professional development will be introduced, and from a theoretical point of view, the impact of career identity, the self and school climate on specific approach of teacher professional development are argued. Second, the method that is used in this research will be discussed. Third, the results of this research will be addressed. Fourth, the limitation and discussion points according to this research are covered. Finally, some recommendations for future research will be made.

Theoretical background and hypotheses development

Two perspectives of teacher professional development

Researchers have approached the issue of teacher professional development from two perspectives. The traditional perspective (e.g., Borko & Putnam, 1996) centres on the acquirement of teaching and learning skills. Researchers with this perspective argue that teaching educators how to learn and teach is the most important part in teacher professional development. In contrast, the second approach views teacher professional development from the perspective of individual career development. Researchers with this viewpoint debate that teacher professional development is not only about learning knowledge and skills which are related to teaching tasks, but also includes a series of gradual improvements in his or her career course, such as developing team functioning skills, and learning how to be an effective leader. Hargreaves & Fullan (1992, p. 7) name this perspective in terms of personal development. In short, the former stresses on task-related development, and the latter on the process-related development. The terms task-related and process-related development are chosen to use in this research, due to that these terms cover the meaning of the content.

Impact of Career identity on Teacher professional development

Career identity. Career identity is one of the three elements of career motivation. London (1983; 1993) defined career motivation as "a multidimensional construct consisting of three major domains: career resilience, career insight, and career identity". This research focuses on career identity, which is defined as how central one's career is to one's identity. Career identity concerns about how a person sees his/her career. It is important for teacher professional development, because how a teacher sees his/her career will influence the way he/she develops London (1983; 1993). Career identity is chosen to use in this research, due to that it includes e.g. job involvement, professional behaviour, trying to lead and seeking for recognition. These characteristics of career identity are necessary for this research.

According to Grzeda & Prince (1997) and London (1983) career identity includes two sub-domains: The first one is work centrality, which is defined as "the perceived importance of work in one's occupational choice and satisfaction" (Noe, Noe, & Bachhuber, 1990). Job involvement, professional orientation, commitment to managerial work, and identification with the organization, are positively related to work centrality (London, 1983). In terms of the teaching profession, work centrality is the way teachers see their job and their involvement in their work. Teachers with work centrality are committed to their job, what would probably mean that they want to develop their job. For these teachers, professional orientation means that they develop in their profession specifically. Teachers who are highly committed to their work and the organization are more motivated to further improve their teaching skills. These teachers find it important to become a better teacher; this is one of the main goals in their career. Thus, they are more motivated to participate in the professional learning activities than teachers who do not have this kind of work centrality.

The second domain, the desire of upward mobility, includes the needs for advancement, recognition, dominance, and money (London, 1983). Employees who have a

strong desire of upward mobility will interpret their career or professional development in terms of climbing a career ladder, or getting to the top. In terms of the teaching profession, teachers with a strong desire of upward mobility may view their professional development as gaining more responsibilities, having a superior status or more authority in peer groups. In order to achieve those goals, teachers have to develop themselves in order to increase, for example, their leadership skills, and team functioning skills. Therefore, we assume that a teacher with a strong desire of upward mobility will develop himself/herself in a process-related way. All in all the above mentioned arguments lead to the following hypotheses.

Hypothesis 1: Work centrality stimulates teachers to engage in activities to develop, which are task-related.

Hypothesis 2: The desire of upward mobility stimulates teachers to improve their process-related professional development.

Moderating effect of self-construal

According to Triandis (1989), the self is "an active agent that promotes differential sampling, processing, and evaluation of information from the environment, and thus leads to differences in social behaviour". There are two approaches for individuals to make a construal about their self-concepts. The first one refers to the independent or individual self. This type of self-construal is based on the separateness and autonomy (Hardie, Kashima and Pridmore, 2005). "With an individual self, people view themselves as an individual whose behaviour is organized and made meaningful primarily by reference to one's own internal repertoire of thoughts, feelings, and action rather than by reference to the thoughts, feelings, and actions of others" (Markus & Kitayama, 1991). Teachers with this type of self-construal may give priority to their own perceptions, emotions, and actions, so they will develop and achieve their own goals through their own reference, and not by referring to others' performance.

With this view of independent self in mind, teachers' drive for achievement is to meet their internalized standards of excellence. Accomplishing challenging tasks may serve this individually orientated motivation optimally. In this sense, we argue that individual self-construal may strengthen the relation between work centrality and task-related professional development. Combining this with hypothesis 1, will lead to:

Hypothesis 3: Individual self reinforces the impact of the work centrality on task-related professional development.

The second type of self-construal is the interdependent or collective self. With this type of self-construal, people view themselves as a part of an encompassing social relationship (Markus & Kitayama, 1991). The principal goals of a person with an interdependent self-construal are to develop relationships and to maintain connectedness with close others (Cross & Madson, 1997). Hardie, Kashima and Pridmore (2005) propose that the collective self is based on shared connections with others through interpersonal relationships and social group members. Motivation is, at least partly, directed by others. Thus, for individuals with a strong collective self, excellence may be indicated by being better than others, or to be the best among the group. Their satisfaction is to some extent derived from others' recognition, such as their family, peer groups, and supervisors. In relation to teacher professional development and career identity, we argue that the collective self-construal will further adjust the relation between desire of upward mobility and process-related professional development. Combining this with hypothesis 2, it will lead to:

Hypothesis 4: Collective self reinforces the impact of desire of upward mobility on process-related professional development.

The moderating effect of organizational climate

Staessens (1993, p. 45 - 53) distinguished three types of school climate: the family-school, the school as a professional organization, and the 'living-apart-together' school. These three types differ from each other in the way teachers have contact with each other (Bakkenes, De Brabander & Imants, 1999), however schools can have some characteristics of more school climates.

The first school is according to Staessens (1993) characterized by an informal culture of congeniality, and an aversion to official and structural matters. The basic assumption is: "We are a great group with good intentions. We can trust that matters will spontaneously develop in an appropriate way" (Staessens, 1993). In this kind of school, there is an informal contact between team members, but the teachers do not speak about classroom work or subject matter. The teachers do not feel isolated, even though they are individual players in the school. The contact with colleagues is more personal than professional. The aim of this kind of school is that teachers work together in a familiar way and a good work environment (Bakkenes, De Brabander & Imants, 1999). Under this type of school climate, teachers do not have to become better than others. This may not stimulate the professional development of teachers. On the other hand, for teachers who want to develop themselves further this type of climate does not set a barrier, but development is not necessary for every teacher working in this kind of school. Therefore, the teacher development comes from the inside of the teacher and is not due to the climate that school/management creates. Relating this type of school climate to career identity and teacher professional development, we believe that the relation between career identity and teacher professional development may not be strongly influenced by the school climate.

According to Staessens (1993), in the second type of school climate, a school is viewed as a professional organization, in which proficiency and efficacy are important. The

basic assumption is: "We have to fulfil an important professional task" (Staessens, 1993). The staff of this school can be seen as a professional football team. Team members see each other as colleagues and not as friends. This school has a supporting network, built in through discussions and cooperation structures. Important for this school is that teachers are always developing and they all want to be better and better. This produces more competition among the employees in school. This type of school climate promotes teachers competing with each other. Teachers are motivated and stimulated to develop, so they are willing to participate in development. It also encourages teachers to fulfil an important task, which requires teachers to develop themselves in different competencies and not only teaching ability. Related this type of school to the relationship between career identity and teacher professional development, we assume that this school climate will reinforce the impact of desire of upward mobility on process-related professional development. Due to that teachers are motivated and stimulated (by others and themselves) to get better and better. Important for them is to become better than colleagues, so they want to climb the career ladder, which is related to process-related professional development.

The third type of school climate is named as the 'living-apart-together' school. Mediocrity is a core part of this type of school. The basic assumption is: "Let us just be an ordinary school". In this school, the staff can be characterized as a disengaged team (Bakkenes, De Brabander & Imants, 1999), a group of separate individuals rather than a team. Teachers do not receive any information from other team members, so in general, a feeling of unity and community is absent (Staessens, 1993). The goal of this school is to be normal, average. Being a 'living-apart-together' school means that development is not a significant issue. Teachers do what they have to do and nothing more. On this point, teachers in this type of school climate do not want to develop, because they can not see the purpose of

development. Therefore, we believe that this school climate will weaken the link between teacher career identity and their professional development.

When comparing the function of the above mentioned three-types of school climates, we formed the following hypotheses:

Hypothesis 5: A professional organization reinforces the impact of work centrality on task-related professional development to a larger extent than a family or a living-together-apart school.

Hypothesis 6: A professional organization reinforces the impact of desire of upward mobility on process-related professional development to a larger extent than a family or living-together-apart school.

Hypothesis 7: A family school reinforces the impact of work centrality on task-related professional development to a larger extent than 'living-apart-together' school.

Hypothesis 8: A family school reinforces the impact of desire of upward mobility on process-related professional development to a larger extent than 'living-apart-together' school.

Method

Participants

Participants were recruited from 10 schools (three secondary and seven primary schools). In total, 72 teachers and 10 team leaders voluntarily participated in this study.

Teachers filled in the questionnaire to evaluate their career identity, their self and the school climate (see appendix 1). The average age was around 40, ranging from 23 to 61, and 80% were female. Their experience in teaching is around 16 years and most of the teachers reported to have an education equal to or higher than HBO (7 MBO, 54 HBO, 8 University and 2 others). All of them are independently responsible for their teaching tasks.

Team leaders filled in the questionnaires to evaluate teachers' professional development (see appendix 2). The purpose of using team leaders for professional evaluation is that the resource is more valid and reliable, and the social desirability can be avoided. On average, the team leaders filled in between three and fifteen questionnaires.

Procedure

The initial contacts of this study were made through the team leaders. They were asked by phone whether they and their school would participate in this study. Eleven schools agreed to participate.

The team leaders who confirmed the participation received around 10 questionnaires to spread in their school (minimum 5 questionnaires and maximum 15 questionnaires).

The questionnaires were first set out in English, and later translated to Dutch, due to the nationality of the participating teachers. Team leaders completed the questionnaire over professional development; and the teachers filled in the questionnaire measuring career identity, self-construal and school climate.

Questionnaires were distributed in paper. Each school received a package, with around 10 teacher and 10 team leader questionnaires. All questionnaires where numbered (1 until 10), so that at the end both team leader and teacher questionnaire could be combined. This is achieved through first explaining to the team leaders the importance of the questionnaire from teacher A being combined with the team leaders' questionnaire about teacher A. All team leaders received a list, with number 1 till 10 on it. They had to fill in the names of the teachers on this list, so all teachers are numbered 1 till 10. Next step for the team leader was to give all the teachers on the list a questionnaire. Teacher number 1 received questionnaire number 1, etcetera. Further, the team leader fills in the questionnaires, whereby he/she pays attention that the numbers on the questionnaire are corresponding with the number of the teacher. After

I received the questionnaires, I put the questionnaires, according to the numbers, per school together.

After two weeks, the questionnaires were collected. 130 questionnaires were spread and 72 were returned (response rate: 60%). From the team leaders, the response rate was 91%. Out of eleven schools, which were asked, ten schools filled in the questionnaire.

Structure of questionnaires

Two questionnaires were developed for this study (see appendix one and two). A questionnaire is developed to measure the two types of teacher professional development. Team leaders were asked to score each teacher professional development on 13 questions. Besides, leaders also filled in some questions about the teachers they lead. The second questionnaire used by teachers consists of three parts; career identity, self-construal and school climate. Respondents were assured that their answers would be treated confidentially and would be only used for this research. Team leaders were asked not to discuss their answers with the teachers, to make sure that all the answers are valid and reliable.

Measures

Teacher professional development is specifically developed for this study. Two steps were adopted to create questions: review literature and interview teachers (some teachers of the Willemschool). In total, this questionnaire contained 13 questions. See Table 1; six were used to measure task-related professional development. An example of task-related is *"This teacher committed to teaching as his/her career"*. The Cronbach's Alpha was .87. Five items were used to measure process-related professional development. An example is *"This teacher uses every opportunity to become a team leader"*. The Cronbach's Alpha was .86. Questions

were measured on a 5-point Likert scale (1 = "Never involved", 5 = "Totally involved").

Factor analysis revealed that the two questions "*This teacher is investing more time and effort*

to be a professional expert rather than to be a member of the school board" and "*This teacher*

is searching for job assignments that matches his/her career goal" did not have a significant

load on the two expected factors, so they were excluded for this research.

Table 1. Factor Analysis - Teacher professional development

To what extent is the teacher…	Task-related	Process-related
… interested in teaching?	.851	
… committed to teaching as a career?	.807	
… looking for ways to get the best out of the students?	.795	
… loyal to his/her profession as a teacher?	.773	
… working extra (e.g. using free time) to deliver a high-quality course?	.748	
… engaging in activities to improve his/her teaching skills?	.650	
… interested in climbing up in the career ladder?		.928
… looking for career opportunities to move up?		.904
… taking opportunities to promote his/her status?		.761
… willing to work harder to get a better salary?		.722
… using every opportunity to become a team leader?		.655

Career identity. Items measuring career identity were developed based on the

individual characteristics of career identity of London's work (1983), see Table 2. Five items

were used to measure work centrality. Examples are "*My work as a teacher is an important*

part of my life" and "*I am proud of being a teacher*". The Cronbach's Alpha was .68. Six

items were used to measure desire of upward mobility. Examples are "*Earning a decent*

salary is an important reason for me to continue teaching" and "*A job with a higher social*

status than teaching is my wish". The Cronbach's Alpha was .68. In total 16 statements were

asked about career identity, only 11 are used to investigate the hypothesis. The excluded

question of this research can be found in appendix 3.These questions are excluded based on

the results from factor analysis, as they did not load on the factor as expected.

Table 2. Career Identity

	Work centrality	Desire of upward mobility
I am proud of being a teacher.	.748	
I am satisfied with my job as a teacher.	.692	
My work as a teacher is an important part of my life.	.690	
Compared to other activities teaching offers me greater pleasure.	.580	
Being a teacher is just a way for me to make a living.	.570	
A job with a higher social status than teaching is my wish.		.825
If I can find a position that offers me more salary and a higher status than teaching, I will take this position.		.705
I want to be in a leadership position.		.646
Earning a promotion is a strong motivation for me to work hard.		.613
I want my colleagues to recognize my accomplishments, so that they can look up to me.		.522
Earning a decent salary is an important reason for me to continue teaching.		.398

Self-construal was measured by using the combined scales (e.g. Triandis, 1995). 36 statements are chosen in tapping those two concepts. However, results from a factor analysis (see appendix 3) showed that nine items of individual self and seven items collective self were the best to measure the concepts. Examples of individual self are *"I enjoy being unique"* and *"I prefer to do my own things"*. Examples of collective self are *"What is good for my organization is also good for me"* and *"It is my duty to defend the reputation of my organization"*. The Cronbach's Alpha is .72 for the nine items measuring individual self and .70 for the seven items measuring collective self.

School climate. The climate of the school was measured in terms of metaphors, which are mentioned in Staessens (1993). Results from a factor analysis (see table 3) show that three items for family school and five for professional organization were best to measure the factors. An example of family school is *"we see each other more as friends than colleagues"*. An example of a school as professional organization is *"self development is encouraged"*. An example of a 'living-apart-together' school is *"there are many subcultures"*. The Cronbach's Alpha is .37 for the three items measuring family school; .86 for the five items measuring professional organization and .31 for the two items measuring 'living-apart-together' school.

In total, for school climate, 11 statements were established; only eight are used in this research, since the remaining questions did not measure the same factors as the other questions.

After doing a factor analysis, the 'living-apart-together' school is excluded from this research. According to the factor analysis, only two different school climates were measured. Family school and professional organization are taken together, to see if they influence the relation between career identity and teacher professional development. In the sample, the items are separated, as it must be seen if a school is viewed as a professional organization or family school.

To measure school climate, data from two teachers were excluded, as they did not fill in the questions about the school climate. To check up if the group means within the schools is reliable, an intraclass correlation ICC (2) is used. An ICC (2) provides an estimate of the reliability of the group mean (Bliese, 2000). According to this ICC (2) one school is excluded from this part of research, because the teachers did not answer in the same direction (ICC(2) = -4.5 and -.261), respectively family school and professional organization. Finally, only nine schools and 70 teachers are used in this part of research.

All items were measured on a 5-point Likert scale (1 = "Strongly disagree" and 5 = "Strongly agree").

Table 3. School climate

In my opinion, I am working at a school, in which…	Family school	Professional organization
… we have a lot of freedom.	.672	
… we see each other more as friends than colleagues are.	.630	
… the contact between team members is informal.	.605	
… the management supports our development.		.766
… self-development is encouraged.		.765
… promotion is highly appreciated.		.764
… if we want to develop ourselves, colleagues will support us to do so.		.747
* … self-development is discouraged. It means that if we try to develop ourselves, it will do us more harm than good.		-.680

Note. Items with an * in front are questions which are negatively formulated. In the factor analysis not recoded items are used. In the regression analysis and correlation, recoded items are used.

Data analyses

The analysis was conducted in three stages, in the first I examined the structure of the four different scales; the second the correlations between the four factors were explored; and the third stage I investigated the main and moderating effects among the relevant variables by using regression analysis. In the regression analysis, age, gender, highest education and years of experience were used as control variables. The dependent variables were task-related professional development and process-related professional development. The independent variables in this research were work centrality, desire of upward mobility, the individual- and collective self, and the school climate.

Results

Table 4. Descriptive Statistics and Correlation

		M	SD	A	B	c	1	2	3	4	5	6	7
CO	*(n=70)*												
a	*Age*	2.53	1.20	-									
b	*Gender*	1.80	.40	-.29*	-								
c	*Experience*	3.70	2.25	.80*	-.22	-							
TPD	*(n=72)*												
1	*Task*	4.23	.59	-.04	-.02	-.03	(.867)						
2	*Process*	2.24	.93	-.09	-.07	-.03	.34**	(.863)					
CI	(n=72)												
3	*Work centrality*	4.26	.43	.01	.13	.05	.35**	.02	(.675)				
4	*Desire of upward mobility*	2.35	.59	-.12	-.12	-.05	-.15	.33**	-.16	(.684)			
SC	(n=72)												
5	*Individual*	2.97	.48	-.42**	.24*	-.34**	-.20†	.06	-.14	.34**	(.715)		
6	*Collective*	2.82	.48	.74	-.24	.21	.15	.10	.13	.08	.09	(.696)	
SCL	(n=9)												
7	*School climate*	.74	.44	-.11	.33*	-.02	-.31*	-.19	.02	-.08	-	-	(.697)

Note. †p < .10, *p <.05, **p < .01
The values in the brackets on the diagonal line (…) are the Cronbach's Alpha.
CO = Control variables, TPD = Teacher Professional Development, CI = Career Identity, SC = Self-Construal, SCL = School Climate
Experience = "Number of years teaching", Task = "Task related professional development", Process = "Process related professional development", Individual = "Individual self", Collective = "Collective self"

Descriptive statistics

For each of the four variables (teacher professional development, career identity, self-construal, and school climate), mean, standard deviation and inter-correlation are shown in Table 1. The mean of task-related development (M = 4.23; SD = .59) was significantly higher than that of process-related development (M = 2.24; SD = .93), t = 16.58; $p < .01$, suggesting that teachers engage in more activities to develop their teaching skills than to climb the career ladder.

In terms of career identity, teachers reported a significantly higher score on work centrality (M = 4.26; SD = .43) than on desire of upward mobility (M = 2.35; SD = .59), t =

21.12; p < .01. The score on individual self ($M = 2.97$; $SD = .48$) was higher than the score on collective self ($M = 2.82$; $SD = .48$), which was marginally significant ($t = 1.77$; p < .10). It suggests that the individual self-construal is predominant over collective self-construal among Dutch teachers. This finding is consistent with others' research among Dutch employees (Yang, Van de Vliert & Shi, 2007).

In terms of school climate, teachers recognized professional organizations ($M = 3.73$; $SD = .39$) more strongly than family schools ($M = 3.48$; $SD = .29$), the difference was significant ($t = 4.49$; p < .01).

Correlation analysis revealed that task-related professional development was positively related with process-related professional development ($r = .34$; $p < .01$). This is in line with my assumption. Further, both types of teacher professional development were correlated with career identity. Namely, work centrality was related to task-related professional development ($r = .35$; $p < .01$) and desire of upward mobility was related to process-related professional development ($r = .33$; $p < .01$). These correlational patterns seem to be in line with hypothesis 2.

Additionally, the results showed a negative correlation between task-professional development and individual self ($r = -.20$; $p < .10$) and a positive correlation between desire of upward mobility and individual self ($r = .34$; $p < .01$).

School climate was correlated negatively with task-related professional development ($r = -.31$; $p < .05$), suggesting that the stronger the school climate, the less task-related professional development will occur.

Table 5. Regression analysis

		Task-related professional development	Process-related professional development
	Control		
	Age	-.06	-.12
	Gender	-.10	-.12
	Experience	.01	.02
	Predictor		
CI	Work centrality	.19*	-
	Desire of upward mobility	-	.49**
SC	Individual self	-.06	-.09
	Collective self	.01	.03
	Interaction		
	Work * Indivi	-.01	-
	Upward * Collect	-	.22†
	F	1.30	3.17**
	R2	.15	.30

Note. Regression coefficients shown are unstandardized.

$^{\dagger}p < .10$, $*p < .05$, $**p < .01$

Experience = "Number of years teaching"

Work = "Work centrality", Indivi = "Individual self", Upward = "Desire of upward mobility", Collect = "Collective self".

Tests of the hypotheses

Task-related professional development. In the first hypothesis, we indicate that work centrality leads teachers to engage in activities, which are related to teaching tasks.

Hypothesis 3 states that individual self reinforces the impact of the work centrality on task-related professional development. The regression analysis results in Table 5 show that work centrality had a positive effect on task-related professional development ($b = .19$; $p < .05$) which confirms hypothesis 1. However, the interaction effect between work centrality and individual self has no significant influence on task-related professional development ($b = -.01$; *ns*) which does not confirm hypothesis 3.

Process-related professional development. In the second hypothesis, we indicate that the desire of upward mobility leads teachers to improve their process skills in professional development. Hypothesis 4 states that collective self reinforces the impact of desire of upward

mobility on process-related professional development. The regression analysis results in Table 5 show that desire of upward mobility had a positive effect on process-related professional development ($b = .49$; $p < .01$), which confirms hypothesis 2.

Moreover, the interaction effect between desire of upward mobility and collective self also showed a significant influence on process-related professional development ($b = .22$; $p < .10$), indicating that the collective self and career identity of upward mobility work together in impacting teachers' engagement in the activities which were process-related. To depict the moderating effect of collective self, we graphically explored their joint function, see Figure 1. The relation between desire of upward mobility and process-related professional development was stronger when collective self was high. For the low collective self, the impact of desire of upward mobility on process-related professional development is reduced. This corresponds with hypothesis 4 that collective self reinforces the impact of desire of upward mobility on process-related professional development.
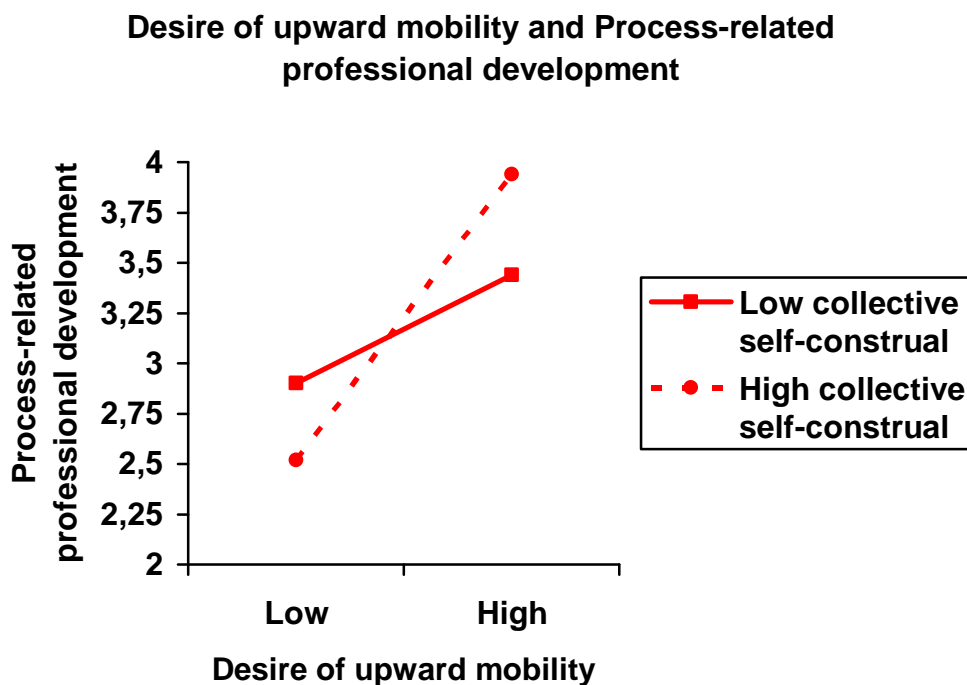

Figure 1. Desire of upward mobility and Process-related professional development explained by collective self.

Table 6. Regression analysis

	Task-related professional development	Process-related professional development
Control		
Age	-.02	-.06
Gender	-.09	-.16
Experience	.01	.01
Predictor		
Work centrality	.22**	-
Desire of upward mobility	-	.57**
Factor		
School climate	-.18*	-.20
Interaction		
Work * School climate	.00	-
Upward * School climate	-	.17
F	3.07*	4.75**
R2	.26	.35

Note. Regression coefficients shown are unstandardized.
*p <.05, **p < .01
Experience = "Number of years teaching?"
Work = "Work centrality", Upward = "Desire of upward mobility".

School climate. In the fifth hypothesis, we indicate that a professional organization reinforces the impact of work centrality on task-related professional development to a larger extent than a family school does. Hypothesis 6 states that a professional organization reinforces the impact of desire of upward mobility on process-related professional development to a larger extent than a family school does. The results in Table 6 show that the moderating effect of school climate on the relation between work centrality and task-related professional development was not significant (*b* = .00; *ns)*, neither was the interaction between desire of upward mobility and school climate on process-related professional development (*b* = .17; *ns*). These results do not support hypothesis 5 and 6. Overall, the results suggest that school climate does not play a role in the relationship between career identity on one hand and teacher professional development on the other. Due to the fact that the items about the 'living-apart-together' school were not valid and reliable, Hypothesis 7 and 8 can not be investigated.

Even though that school climate in combination with work centrality or desire of upward mobility does not have any significant influence on task- or process-related professional development, school climate has a direct negative significant influence on task-related professional development ($b = -.18; p < .05$).

Discussion

The purpose of this study is to examine the relation between teacher professional development and career identity and to investigate the overarching influence of self-construal and school climate on this relation. The results from regression analysis show that work centrality has a positive impact on task-related professional development and that desire of upward mobility has a positive impact on process-related professional development. Furthermore, individual self does not affect the relation between teacher professional development and career identity whereas the collective self reinforces the relation between the desire of upward mobility and process-related professional development. According to this research, school climate does not have any influence on the relation between career identity and teacher professional development. In the discussion, the relation between teacher professional development with career identity, self-construal and school climate will be further discussed.

As showed in the results, career identity encourages teachers to improve their professional development in different ways. Teachers with work centrality engage in activities that advance in the teaching skills. Teachers with a desire of upward mobility follow activities that improve their process skills. This suggests that teachers themselves play an important role in the development of their profession. Teachers may develop their own career identity during or even before they begin their work. Once their identity is formed, this will then influence their further development. They want to develop in that direction, but not in another direction.

In education, one should look at what teachers want and allow them to develop in their chosen direction. Simulating teachers in the specific direction will result in an increase in teacher professional development.

The results show that the collective self reinforces the impact of desire of upward mobility on process-related professional development. This is in line with the expectations. Teachers with a strong collective self are identifying themselves through the relation with others (Hardie, Kashima and Pridmore, 2005). They report more interests in improving their own process-related skills. In contrast, the impact of upward mobility becomes less significant for the teachers with a weak collective self. To gain more respect within a group, the teacher wants to climb the career ladder; this can be achieved by developing his/her process-related skills. Therefore, the more a teacher has a collective self, the more he/she wants to move up and the more he/she is developing the process-related skills. The relationship with other people can be seen as a stimulator for these teachers to develop, as the relation to other people is of importance for this teacher (Cross and Madson, 1997).

In contrast with hypothesis 3, the individual self does not show any influence on the relation between work centrality and task-related professional development. Argument could be that an individual self leads people to focus on their own goals (Markus and Kitayama, 1991). To reach these goals teachers have to develop; however the opportunity to develop may not be available. This means that there is a gap between what they want and what they can reach in their development. Due to this fact teaching as a profession could be difficult to be analyzed in terms of achieving goals, e.g. through the interaction with students, limitations from the school and cooperation with colleagues.

Furthermore, it may be possible that the individual self does not influence the task-related professional development, but the collective self does. Due to this, teachers with an

individual self are developing because of their own interests and not that of others (Markus & Kitayama, 1991) their development will be slower then that of teachers with a collective self will. Another argument could be that even if a teacher has an individual self this teacher does not see the purpose of developing him/herself, as he/she is doing his/her work on a proper way and there is no need for development.

Results show that a school climate did not take part in the process of shaping teachers professional development. A reason for this result can be that the difference between these climates is not as clear as stated in the literature (Staessens, 1993). It could be possible that there is a kind of overlap between these school climates. This is why it is not possible to find the relation between each school climate and the influence between career identity and teacher professional development. A conflict could arise as there are schools in which the different combinations of the three school climates are possible. The result could be that in this investigation a school is used as a family school while it also has the characteristics of a professional organization, which is why incorrect conclusions may have been drawn.

Limitations.

Three limitations in this research should be addressed. First, in this research and in the literature task- and process-related professional development are separated, while it may be possible that this distinction is not so clear in reality. If this argument is true, it suggests that teachers want to develop themselves in both directions: improve his/her teaching skills and climb the career ladder. Another explanation can be that a teacher does not want to develop him/herself, so he/she is not developing task-or process-related skills. For a future research, it would be interesting to discover if these two can be separated or if there is connection between these two factors.

Second, the scale (Staessens, 1993) used to measure the school climates is not accurate. To see the difference between these climates this scale has to be further improved. In future research, schools have characteristics of both family school and professional organization. If the scale is further developed, this problem maybe set right. This can be reached by doing research in the different types of school climates. In this investigation schools can be interviewed about the school climates. Afterwards per climate some recognizable characteristics are set, these characteristics could be converted into questions. These questions can be used in a further investigation to designate a certain climate to schools.

Third, the sample size of this study is small, only including ten schools and 72 respondents. Especially at schools level, this number is too little to draw proper conclusions. Only two schools could be used for a school viewed as a family school and six schools are used as professional organization. The low number of schools set a limitation for data analysis and the validity of the results. Moreover, per school only a small number of teachers participated, therefore it is difficult to judge whether their reactions reflect the school climate. Furthermore the teachers are not a good representative of the population.

Conclusion and Implications

From this investigation it is shown that in primary and secondary education teachers develop themselves in different ways (task- and process-related). The direction in which the teacher develops is also determined by how this teacher views his/her career (work centrality and desire of upward mobility). Teachers can have an individual self as well as a collective self. If a teacher has a collective self it will have an influence on the relation between desire of upward mobility and process-related professional development. The stronger the collective

self, the stronger this relation is. If a teacher has an individual self it will not influence the relation between work centrality and task-related professional development. In this investigation the influence of the school climate on the relation between career identity and teacher professional development has been viewed. From this investigation this shows not to be the case. How can the results of this research contribute to our understanding of teacher professional development?

Government and schools should realize the fact that teachers cannot be forced to develop their career in a specific direction (teacher professional development). The direction in which teachers develop themselves for their career should serve as the baseline for career planning. Teachers with work centrality, may focus to develop on task-related skills (by following e.g. content-related courses), while teachers with a desire of upward mobility, may specially like to develop on process-related skills (by following e.g. management courses). Educational change on teachers' professional development should consider the qualities and interests of the teachers. Development in education would then probably be easier received, which will result in more satisfied teachers and an improvement in education.

Alongside that, it is important for teachers to know in which direction they want to develop within their career. It is not only important for teachers, but also for the school management, as together, they can prepare a personal development plan from which both parties can benefit. This will result in better and more satisfied teachers and consequently in better education.

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Appendices

Appendix 1 Teachers questionnaire

Appendix 2   Team leaders questionnaire

Appendix 3   Factor analysis self-construal

	Individual	Collective
I enjoy being unique.	.547	
I prefer to do my own things.	.621	
In the long run, the only person I can count on is myself.	.465	
What happens to me is my own doing.	.585	
Individual autonomy rather than interpersonal relationships determine one's success.	.521	
I achieve my career goals through myself rather than through my organization.	.618	
The most important thing in my life is to make myself happy.	.439	
One should live one's life independent of others as much as possible.	.514	
Employees should give priority to their own interests over their organisation's interests.	.591	
* The reputation of my organization has little to do with me.		-.700
What is good for my organisation is also good for me.		.765
If I have done an excellent job, I attribute my success to a collective effort.		.614
I care more about the efficiency of my organisation than about my interpersonal relationships with colleagues.		.505
It is my duty to defend the reputation of my organisation.		.426
I prefer a position in a successful organisation over one where I would succeed alone.		.455
One of the guiding principles in my life is to put group interests ahead of the interests of persons who are dear to me.		.664

Note. Items with an * in front are questions which are negatively formulated. In the factor analysis not recoded items are used. In the regression analysis and correlation, recoded items are used.