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Teachers' sense of their professional identity

Canrinus, Esther Tamara

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Chapter three: Exploring the relationships between indicators of teachers' professional identity

Abstract

This study investigates how relevant indicators of teachers' sense of their professional identity (job satisfaction, occupational commitment, self-efficacy, and change in level of motivation) are related. A model is proposed, tested with structural equation modelling, and refined using data from 1214 Dutch teachers working in secondary education. Classroom self-efficacy and relationship satisfaction play a key influencing role in the relationships between the indicators. Using multiple-group SEM, the parameters of the overall model are similar for the novice, experienced, and senior teachers in a constrained model. Yet, with an unconstrained model, not all parameters are significant in the group of novice teachers. This suggests that, although teachers' sense of their professional identity appears to be stable, it could be dynamic over time. The present study contributes to the further development of a solid theory on teachers' professional identity, which has been lacking.

This chapter is based on:

Canrinus, E.T., Helms-Lorenz, M., Beijaard, D., Buitink, J., & Hofman, W.H.A. (in press). Self-efficacy, job satisfaction, motivation and commitment, exploring the relationships between indicators of teachers' professional identity. *European Journal of Psychology of Education*

3.1. Introduction

The concept of 'professional identity' has recently attracted interest in various fields, such as in the medical field (e.g., Pratt, Rockmann, & Kaufmann, 2006) and in the field of the legal profession (e.g., Mather, McEwen, & Maiman, 2001). Most research has been performed within the field of teaching and teacher education (see for a review Beijaard, Meijer, & Verloop, 2004). Research on teachers' sense of their professional identity has mainly focussed on what affects – the development of – teachers' professional identity (e.g., Hamman, Gosselin, Romano, & Bunuan, 2010). To a lesser extent, more outcome oriented studies exist. Moore and Hofman (1988), for example, found a strong professional identity to be related to a more pronounced critical stance towards working conditions. Additionally, Nias (1997) and Day (2002) claim, based on deductive reasoning and their personal theories, that professional identity is related to how teachers respond to educational reforms.

An extensive research on teachers' professional identity in relation to teacher effectiveness was performed in the VITAE study (Day et al., 2006). In this four-year longitudinal project, the key aim was to investigate factors contributing to variations in teachers' effectiveness. Day et al. (2006) state that by the different ways in which teachers balance three relevant dimensions in their work (a personal dimension (life outside the school), a professional dimension (social and policy expectations of what a good teacher is) and a situational dimension (the direct working environment of the teacher) different professional identities emerge. Results of the VITAE study showed that this balancing of dimensions is one of the factors contributing to teacher effectiveness (measured by value-added measures of students' progress and attainment).

Professional identity pertains to how teachers see themselves as teachers based on their interpretations of their continuing interaction with their context (Kelchtermans, 2009). It is argued here that this interaction manifests itself in teachers' job satisfaction, occupational commitment, self-efficacy, and change in level of motivation (see Figure 1.1, chapter 1, page 14).

According to Day (2002), teachers' sense of their professional identity coincides with these constructs. A similar conclusion was drawn by Puurula and Löfström (2003) in their study on the development of professional identity of employees in small and medium sized enterprises. Teachers' job satisfaction, occupational commitment, self-efficacy, and change in level of motivation are often described in the literature as being important to teacher behaviour (cf. Ashton & Webb, 1986; Firestone, 1996; Toh, Ho, Riley, & Hoh, 2006; Watt &

Richardson, 2008) and they represent a personal perspective on how teachers view themselves as professionals in their work.

Kelchtermans (2005; 2009) uses the term ‘self-understanding’ for a process closely related to professional identity. According to Kelchtermans (2009), five components make up this self-understanding: Teachers’ self-image, self-esteem, job motivation, task perception, and future perspective. Kelchtermans’ definitions of teachers’ self-image and self-esteem closely relate to teachers’ self-efficacy which is perceived here as part of teachers’ professional identity. Likewise, we believe teachers’ motivation to be relevant for teachers’ sense of their professional identity. Nevertheless, teachers’ task perception is defined by Kelchtermans (2009) as teachers’ core values and ideas of what it means to be a teacher. This definition relates to Nias’ (1996) perspective on the relevance of teachers’ values for their identity. We do agree that such values are relevant. Yet, we believe this to be mainly a personal aspect developed during one’s personal upbringing and development. Here, we focus on constructs that are influenced by both the person and the context in which the teacher currently works. Therefore, similar to the concept of teachers’ task perception, the concept of teachers’ future perspective is not incorporated in our theory on teachers’ professional identity. This study investigates the teachers’ perceptions of their present professional identity in their present work environment. In our view, an indication of teachers’ sense of their professional identity is acquired through investigating the four constructs presented in Figure 1.1 (page 14) in their combination.

How these constructs are related to each other and how much weight is assigned to them by teachers is unclear. Therefore, the main research question of this study is: how are these constructs related? To answer this research question, a conceptual model based on the literature of the relationships between these constructs will first be postulated and subsequently tested empirically. A solid theory of teachers’ sense of their professional identity is not available for the construction of this model. The model presented is built on separate studies that investigate only parts of the proposed model. Through this study we hope to contribute to such a solid, more comprehensive theory for understanding teachers’ sense of their professional identity.

Generally, it is stated that professional identity is dynamic (e.g., Beijaard et al., 2004). Sugrue (2005) elaborates on this and argues that identity is not distinctly individual and unalterable. Identity continues to be formed between the experiences of the past and the experiences in the present and future. People may strive to maintain their habits and routines, but are not immune to outside influences (Sugrue, 2005). Ibarra (1999) poses that

people use trial versions of their professional identity before assuming a fully elaborated professional identity. In their longitudinal study, Dobrow and Higgins (2005) found the clarity of 136 (former) MBA students' professional identity to increase over time. Teachers obtain more and more experience and more and different influences affect teachers as teachers have worked longer in their profession. Possibly, teachers' sense of their professional identity changes during their career, resulting in a change in the relationships between the indicators of teachers' sense of their professional identity.

Therefore, in addition to the main research question of this paper, the model will be applied to data from teachers with different levels of experience in order to explore whether the relationships between the constructs are linked to experience. Research focusing on the retention of novice teachers uses respondents with three to five years of teaching experience (e.g., Ingersoll & Smith, 2004). Therefore, the cut-off point for an exact definition of *noviceness* was taken to be the first five years of work experience in education. Super and Hall (1978) presented a figure representing the stages in career development. In that figure, employees up to the age of 45 are said to be advancing and establishing their careers. In the case of Dutch teachers, this means they have approximately fifteen years of experience before having fully established their careers. Therefore, senior teachers are perceived to be those teachers who have worked in education for fifteen years or more. The teachers with experience in between the novice and senior teachers, the experienced teachers, have six to fourteen years of experience in education. Comparing these three groups may result in insight into the stable and/or dynamic aspects of the sense teachers have of their professional identity throughout their careers.

3.2. Conceptual framework

Job satisfaction, self-efficacy, occupational commitment, and change in teachers' level of motivation are put forward here as indicators of teachers' sense of their professional identity. They are the representation of the more tacit construct that professional identity appears to be. Therefore, it is important to understand how these constructs relate to each other. They have been investigated separately and in diverse combinations in various studies (e.g., Cooper-Hakim & Viswesvaran, 2005) but no research has been done which relates them all to one another nor to provide, as argued in this chapter, an impression of teachers' perceptions of their own professional identity.

From the literature, we derived assumptions regarding the relationships between the indicators of teachers' sense of their professional identity. First, studies using structural

equation modelling (SEM) were selected. Second – or where the former studies were unavailable – studies using regression analyses were selected. Third, where none of the other two types of study were available for the relationships to be specified, studies reporting correlations were used to formulate assumptions regarding the relationships. The following assumptions, upon which we will elaborate below, have been derived from the literature:

1. teachers' self-efficacy contributes to teachers'
 - a. change in level of motivation
 - b. job satisfaction
 - c. occupational commitment
2. teachers' job satisfaction contributes to teachers'
 - a. change in level of motivation
 - b. occupational commitment
3. teachers' change in level of motivation contributes to teachers' occupational commitment.

3.2.1 Self-efficacy

In various theories, self-efficacy is put forward as determining behaviour. The expectancy-value theory (Vroom, 1963; Wigfield & Eccles, 2000), for instance, assumes that the likelihood of attaining a valued outcome leads to specific behaviour. If a person believes s/he is capable of gaining a positive result, it will be more likely s/he repeats that behaviour. Likewise, within the attribution theory, the beliefs of responsibility for specific outcomes are put forward as guiding a person's subsequent behaviour (Weiner, 1972). Therefore, teachers' self-efficacy was taken as the starting point for the construction of our conceptual model.

Bandura (1977) distinguished outcome expectations and efficacy expectations. In current definitions of teacher self-efficacy, some authors focus on teachers' perceived ability to affect student outcomes (e.g., De la Torre Cruz & Casanova Arias, 2007), while others focus exclusively on efficacy expectations but extend this by considering the contexts in which teachers work (e.g., Tschannen-Moran, Hoy, & Hoy, 1998). As these authors' definition takes the classroom context and the broader school context, as well as relational aspects – which play an important role in the work of teachers – into account, Friedman and Kass' (2002) definition of teacher self-efficacy is followed in this chapter: “A teacher's perception of his or her ability to (a) perform required professional tasks and to regulate relations involved in the process of teaching and educating students and (b) perform

organizational tasks, become part of the organization and its political and social processes” (p. 684).

Within Ryan and Deci’s (2000) self determination theory, a person’s feeling of competence is related to a person’s level of intrinsic motivation. Bandura (1993) himself refers to self-efficacy beliefs as playing a key role in motivational processes. Self-efficacy is often described as being a component of motivation and has been used in some studies as a measurement for the motivation construct (cf. Ciani, Summers, & Easter, 2008). Self-efficacy is related to behavioural changes, often through its effect on motivation. Schepers, De Gieter, Perpermans, Du Bois, Caers, and Jegers (2005), for instance, describe teachers’ professional efficacy as being the primary motivator in teachers’ work. Therefore, we believe teachers’ self-efficacy contributes positively to teachers’ change in level of motivation.

Using an online instrument, Judge, Bono, Erez, and Locke (2005) surveyed 251 employees working in three different organizations and expected a positive relationship between these employees’ core self-evaluations. These are the fundamental assessments that people make about their worthiness, competence, and capabilities and include self-efficacy and job satisfaction. SEM analysis revealed a significant relationship ($\beta = .47, p < .01$) between the employees’ self-efficacy as part of their core self-evaluations and satisfaction with their jobs. Like Judge et al. (2005), Caprara, Barnabelli, Steca, and Malone (2006) used SEM for their studies. They found a positive and significant relationship ($\beta = .74, p < .05$) between teachers’ self-efficacy and job satisfaction of 75 junior high school teachers. In line with these studies, we assume that teachers’ self-efficacy contributes to teachers’ job satisfaction.

Rots, Aelterman, Vlerick, and Vermeulen (2007) considered data of 209 teachers from Belgium who had graduated between 2001 and 2003. By using SEM, Rots et al. found “[...] that teaching commitment was positively and directly related to teacher efficacy ($\beta = 0.29, p < 0.01$) [...]” (Rots et al., 2007, p. 550). Likewise, Chan, Lau, Nie, Lim, and Hogan (2008) used SEM on data from 2130 primary school teachers and 1587 secondary school teachers in Singapore. A positive relationship was found between teachers’ self-efficacy and commitment in both groups ($\beta = 0.26$ and $\beta = 0.22, CR > 2.0$, respectively). The definition of commitment used by Rots et al. (2007) and Chan et al. (2008) is in line with the definition for the occupational commitment construct used here: “a psychological link between a person and his or her occupation that is based on an affective reaction to that occupation” (Lee, Carswell, & Allen, 2000, p. 800). Against this background, we assume that teachers’ self-efficacy contributes to teachers’ occupational commitment.

Guay, Ratell, Roy, and Litalien (2010) examined, based on the self-determination theory, the longitudinal relations between academic self-concept, autonomous academic motivation, and achievement. Using SEM on data of 925 (T1) and 828 (T2) high school students, they concluded that autonomous academic motivation mediates the relation between academic self-concept and academic achievement. Guay et al. (2010) state that perceived competence is a construct akin to self-concept and used a perceived competence scale to measure academic self-concept. We believe self-efficacy, likewise, is similar to these constructs and therefore use the findings of Guay et al. as an indication that motivation may play a mediating role in the effect of self-efficacy on other constructs. To investigate this claim, we assume in the conceptual model that the effect of self-efficacy on occupational commitment is partially mediated by change in teachers' level of motivation.

3.2.2 Job satisfaction

Bogler and Somech (2004) suggest further research into the effect of various variables on teachers' commitment, such as teachers' job satisfaction. Using SEM, Landsman (2001) investigated the hypothesis that job satisfaction positively affects occupational commitment using data from 1133 public child welfare employees. The employees' job satisfaction significantly predicted the employees' occupational commitment ($\beta = .21, p < .001$). Therefore, we assume that teachers' job satisfaction contributes to teachers' occupational commitment.

Through correlation analysis, teachers' motivation has been found to be significantly related to teachers' job satisfaction ($r = .38, p < .01$) (Davis & Wilson, 2000). A specific direction between these two constructs has been suggested by, for instance, Maslow. Maslow (1943) developed his theory on persons' needs, in which he explains that fulfilment of these needs motivates people. Hackman and Oldham (1976) confirmed their job characteristics model using multiple regression analysis on the data of 658 employees working on 62 different jobs in seven organisations. The model specifies the conditions under which employees will become internally motivated to perform their work effectively. Five core job dimensions (skill variety, task identity, task significance, autonomy, and feedback) influence three critical psychological states (experienced meaningfulness, experienced responsibility for outcomes, and knowledge of the actual results) which influence personal and work outcomes including work motivation. Therefore, we assume that teachers' job satisfaction contributes to teachers' change in their level of motivation.

3.2.3 Change in level of motivation and occupational commitment

Motivation is defined as a set of interrelated beliefs and emotions. These beliefs and emotions drive and influence behaviour (Martin & Dowson, 2009; Wentzel, 1999). Several authors further specified the influence of motivation on behaviour: motivation is what starts, sustains, and concentrates behaviour (e.g., Sinclair, Dowson, & McInerney, 2006). Latham and Pinder (2005) refined the definition of motivation further for the concept of *work motivation*. They defined work motivation as “a set of energetic forces that originate both within as well as beyond an individual’s being, to initiate work-related behaviour and to determine its form, direction, intensity and duration” (Latham & Pinder, 2005, p. 486). Motivation for teaching is investigated mainly by questioning teachers about varying types of motivation (e.g., Watt & Richardson, 2008), for instance: ‘working with children’ or ‘having had inspiring teachers’.

Here, the focus lies on teachers’ change of level of motivation. We do not investigate what made the teachers choose the teaching profession in the first place, yet we are interested in their present level of their motivation in relation to their level of motivation when they entered the teaching profession. More precisely, we are interested in how this level of motivation changes due to the interaction between person and context. We are convinced that the *change in* level of motivation portrays more information than the level of motivation when teachers entered the teaching profession or the current level of teachers’ motivation portray separately. We hypothesise that a change in level of motivation is important for teachers’ present sense of their professional identity, as it incorporates previous experiences.

No research was found that directly relates an overall measure of teachers’ - change in - level of motivation to teachers’ occupational commitment. Sinclair et al. (2006) have speculated that teachers’ motivation underpins teachers’ occupational commitment, but did not investigate this proposition further. For the purpose of our study we specified that change in teachers’ level of motivation contributes positively to teachers’ occupational commitment and investigate whether this relationship is actually present. Thus, we assume that an increase in teachers’ level of motivation will lead to more occupational commitment and a decrease in teachers’ level of motivation will lead to less occupational commitment.

3.3. Method

3.3.1 Participants

To test the proposed model, an online questionnaire was distributed to 5575 Dutch teachers working in secondary education. These teachers received an e-mail invitation to participate.

The teachers' e-mail addresses were retrieved from the websites of their schools. The survey was personalized by inserting a link into each participant's e-mail which permitted access to the questionnaire. Teachers who did not respond or who only partially completed the instrument were sent a reminder e-mail after two weeks.

Of the 5575 teachers approached, 1214 (21.8%) returned a completed questionnaire. The distribution of male and female respondents was 52.9% and 45.2% respectively, 23 teachers did not indicate their gender. The average age was 44 (sd. 11.1) and the average amount of experience in education was 17 years (sd. 11.6). This is an accurate representation of the population of Dutch teachers working in secondary education (Dutch Ministry of Education, Culture, and Science, 2007).

For the second aim of this study, to explore whether the relationships between the constructs are linked to experience, the participating teachers were divided into three groups with varying levels of experience: 265 novice teachers, 341 experienced teachers, and 603 senior teachers.

3.3.2 Data preparation

A survey was developed to measure the constructs relevant for teachers' sense of their professional identity, namely teachers' job satisfaction, self-efficacy, occupational commitment, and change in level of motivation. Change in teachers' level of motivation was determined by subtracting teachers' score on the question "How motivated were you when you started teaching?" from teachers' score on the question "How motivated are you currently?" Table 2.1 (chapter 2, page 22) summarizes the instruments used to measure teachers' job satisfaction, self-efficacy, and occupational commitment.

The items measuring job satisfaction, self-efficacy, and occupational commitment were submitted to a principal component analysis (PCA) because the instruments used to measure these constructs had not yet been used together in previous research. To reduce the confounding of constructs, we conducted a PCA to purify the latent variables. The variable measuring change in teachers' level of motivation was excluded from the PCA, as it was measured by one calculated item.

Based on the PCA, job satisfaction, measured on a five-point Likert scale, was split into teachers' relationship satisfaction (containing items on co-workers, support, and autonomy) and teachers' satisfaction with their salary (containing items on salary and fringe benefits). The indicator "relationship satisfaction" furthermore contained self-efficacy items on teachers' relationship with school administrators, measured on a six-point Likert scale. Teachers' classroom self-efficacy was found to be a separate indicator. Occupational

commitment, measured on a seven-point Likert scale, was split into teachers' affective occupational commitment (referring to positive emotions towards the occupation) and responsibility to remain in teaching (referring to the sense of obligation to remain in the occupation and the awareness of the costs associated with leaving the occupation). The factor affective occupational commitment furthermore contained job satisfaction items measuring satisfaction with work itself as well (e.g., "I like the work I do a lot"). The internal consistencies of the indicators of teachers' sense of their professional identity ranged from .81 (satisfaction with salary) to .92 (classroom self-efficacy). Table 3.1 gives an overview of the features of the final factors.

Table 3.1 Number of items used, reliability, explained variance, and example items of the indicators of teachers' sense of their professional identity

Indicator name	Content	No. of items	Alpha	% explained variance	Example item
Change in level of motivation ^a	Subtraction of the motivation score at the start of teaching from the score of the current motivation				How motivated were you when you started teaching?
Relationship satisfaction	Self-efficacy and job satisfaction items regarding the relationship with school administrators and job satisfaction items on relationships, autonomy and support	22	.89	15.7	In this work, I feel valued by my directors.
Classroom self-efficacy	Self-efficacy items on classroom practice	21	.92	10.1	To what extent do you agree with the statement: I think I can be very creative in my work with students.
Responsibility to remain in teaching	A mix of normative and continuance occupational commitment items ^b	12	.80	5.9	Changing my profession now would be difficult for me to do.
Salary satisfaction	Job satisfaction items on salary and fringe benefits	6	.81	3.8	My salary matches with my qualifications and skills.
Affective occupational commitment	A mix of affective occupational commitment items and job satisfaction items on work	10	.83	3.6	To what extent do you agree with the statement: I like the work I do a lot.

^a as this is a constructed variable, existing of one item excluded from the factor analyses, alpha and the % of explained variance are not included in the table.

^b normative commitment refers to the sense of obligation to remain in the occupation, continuance commitment refers to the awareness of the costs associated with leaving the occupation (Meyer, Allen, & Smith, 1993).

3.3.3 Data analysis

Some of the final factors contain items with differing Likert scales. The factor “relationship satisfaction”, for instance, contains job satisfaction items measured on a five-point Likert scale, as well as self-efficacy items on the relationship with school administrators measured on a six-point Likert scale. Therefore, all item scores were standardized and, subsequently, each participant’s mean score was calculated for each factor. These scores were used in further analyses.

Structural equation modelling, using the statistical package LISREL, tested the assumptions proposed in the theory section. Because more factors were found in the PCA than constructs were presented in the theory section, the aforementioned assumptions were adjusted resulting in the final model presented in Figure 3.1. The foundations of these adjustments are presented below.

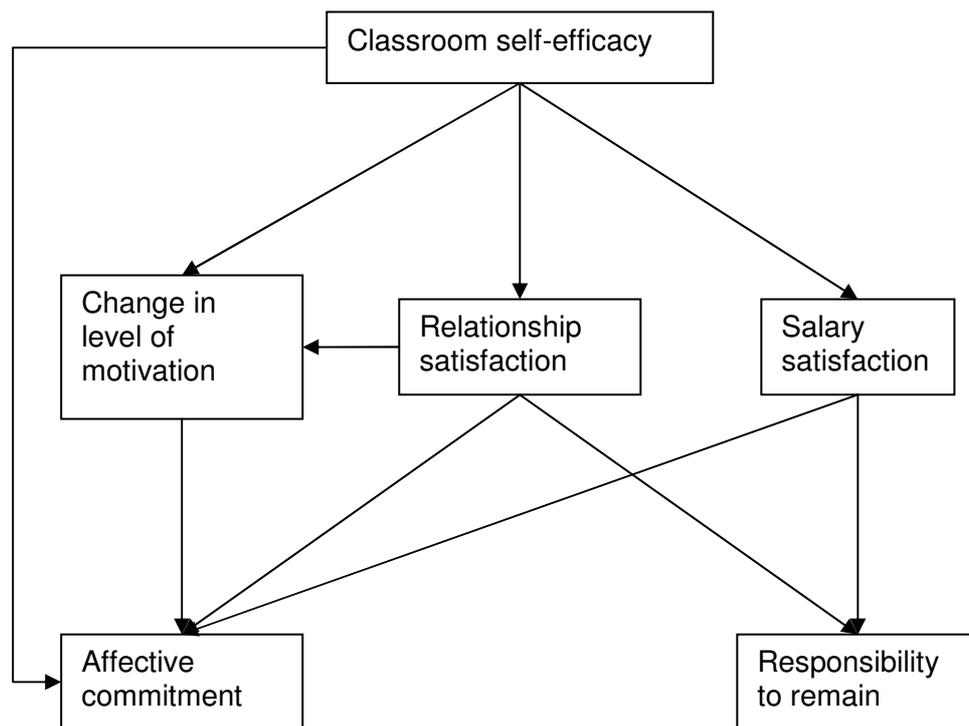


Figure 3.1 Final conceptual model

A relationship between classroom self-efficacy and responsibility to remain in teaching was not specified in the model. In our view, classroom self-efficacy relates to a teacher’s personal feelings of competence, whereas responsibility to remain in teaching is

based more on beliefs about costs and pressures which make a teacher stay in the profession. Likewise, change in teachers' level of motivation was assumed not to contribute to the occupational commitment factor 'responsibility to remain in teaching'. We believe that the more internal process of change in ones level of motivation will not influence the feelings of responsibility to remain in teaching as these are dependent on more external factors like the costs of leaving the profession. Lastly, no relationship was specified between teachers' salary satisfaction and teachers' change in level of motivation, based on the findings of Cameron and Pierce (1994) and McKinney (2000) who did not find a relationship between these constructs.

The relationship between teachers' salary satisfaction and their occupational commitment, and between teachers' relationship satisfaction and their occupational commitment remains unclear in the literature (see for instance Firestone and Pennell (1993) and Liu and Ramsey (2008)). Therefore, the relationship between these two satisfaction factors and both factors of occupational commitment are specified in the model to investigate whether these relationships are actually present.

Besides contributing to teachers' occupational commitment, 'relationship satisfaction' is specified to contribute to change in level of motivation as well. Ryan and Deci (2000) state within their self-determination theory that feelings of relatedness and autonomy, both represented within the factor 'relationship satisfaction', contribute to intrinsic motivation. Therefore, this contribution was specified in the model.

Multiple-group SEM was used to investigate whether the relationships between the constructs are linked to experience. By testing, by use of a χ^2 -difference test, whether the change in χ^2 compared to the change in the degrees of freedom was significant, a fully constrained model (Invariance Model), based on the parameters found in the final model for the total group, was compared to a fully unconstrained model. If the fit of the constrained model is considerably worse than the fit of the unconstrained model, as indicated by a significant χ^2 -difference, the parameters are not considered equal across the groups (Kline, 2005). For the multiple-group SEM the total sample was split into novice, experienced, and senior teachers.

3.4. Results

The standard deviations and the correlations between the factor scores – including the constructed motivation variable – are presented in Table 3.2. Teachers' classroom self-efficacy was significantly ($p < .01$) related to teachers' relationship satisfaction, affective

occupational commitment, and change in level of teachers' motivation. Relationship satisfaction and satisfaction with salary were both significantly ($p < .01$) related to affective occupational commitment as well as to each other. The factor responsibility to remain in teaching was solely related ($p < .01$) to the factor affective occupational commitment. The strongest significant relationship was found between relationship satisfaction and affective occupational commitment ($r = .57, p < .01$).

Table 3.2 Standard deviation and correlations between factor scores (N=1214)

Variable	SD	1	2	3	4	5	6
1. Relationship satisfaction	.55	-					
2. Satisfaction with salary	.71	.26**	-				
3. Responsibility to remain in teaching	.58	-.05	.03	-			
4. Affective occupational commitment	.62	.57**	.22**	.12**	-		
5. Change in level of motivation	1.00	.30**	.11**	.01	.40**	-	
6. Classroom self-efficacy	.62	.21**	-.11**	-.04	.26**	.15**	-

** $p < 0.01$ (2-tailed).

The fit of the proposed model, shown in Figure 3.1, was measured by means of χ^2 , the comparative fit index (CFI), the non normed fit index (NNFI), and the root mean square error of approximation (RMSEA). The results for the proposed model showed an unsatisfactory fit with the data: $\chi^2(5, 1214) = 144.08, p < .01$; CFI = .86; NNFI = .58; RMSEA = .15. To improve the model, the non-significant relationship between satisfaction with salary and responsibility to remain in teaching was removed from the model. Furthermore, the relationship between affective occupational commitment and responsibility to remain in teaching was added, in line with findings of McAulay, Zeitz, and Blau (2006). They found affective professional commitment to be positively associated with normative professional commitment. Additionally, we expected the relationship satisfaction factor to contribute to the 'salary' factor. Firestone and Pennell (1993) found that competitive aspects of differential incentive programs for teachers have detrimental effects on teachers' commitment to their work. We assume that with a positive perspective towards relationships

with colleagues and school administration and a positive perspective on being listened to by the school board, a teacher will feel more satisfied about his/her salary as less competition and feelings of arguments will exist.

Figure 3.2 represents the final model showing the standardized coefficients of the relationships. This final model was found to have good fit indices: $\chi^2(4, 1214) = 9.55, p > .01$; CFI = .99; NNFI = .98; RMSEA = .03 with a significant decrease of χ^2 (χ^2 -difference = 135.53, $p < .01$).

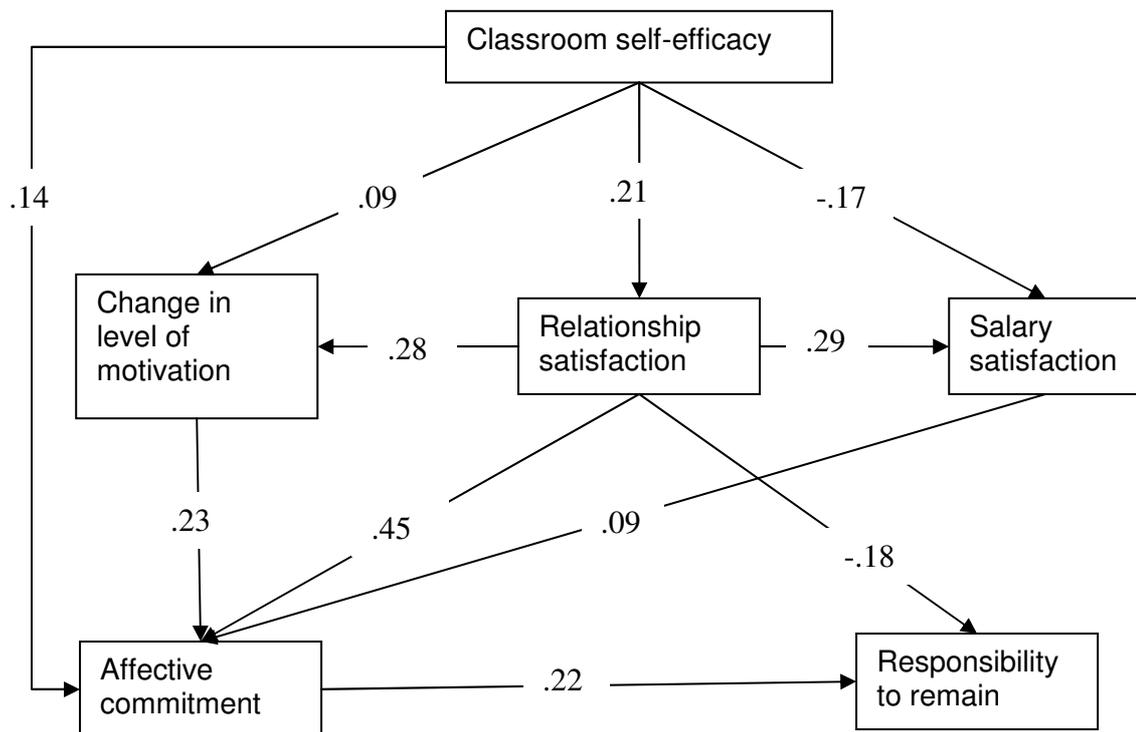


Figure 3.2 Final structural model representing only the significant standardised relationships

The direct effect of teachers' satisfaction with their relationships on teachers' change in level of motivation ($\beta = .69$) was the strongest effect found in the final model. The second strongest direct effect was the effect of teachers' relationship satisfaction on teachers' affective occupational commitment ($\beta = .51$). The least strong, but still significant ($p < .01$) direct effect was present from salary satisfaction to affective occupational commitment ($\beta = .08$). A negative direct effect was found from classroom self-efficacy to salary satisfaction ($\beta = -.20$) and relationship satisfaction to responsibility to remain in teaching ($\beta = -.18$). This indicates that the higher a teacher's self-efficacy, the less satisfied this teacher is with his/her salary and received fringe benefits and that positive relationships may reduce teachers'

feelings of pressure to remain in teaching. Lastly, the hypothesised relationship between teachers' salary satisfaction and their responsibility to remain in teaching was not significant and therefore removed from the model. Table 3.3 presents the significant direct, indirect, and total effects between the factors in the final model.

Table 3.3 Significant direct, indirect, and total effects between the factors

Factors	Direct	Indirect	Total
Classroom self-efficacy → change in level of motivation	.20**	.13**	.33**
Classroom self-efficacy → relationship satisfaction	.18**		.18**
Classroom self-efficacy → salary satisfaction	-.20**	.07**	-.13**
Classroom self-efficacy → affective occupational commitment	.14**	.12**	.26**
Classroom self-efficacy → responsibility to remain in teaching		.02*	.02*
Change in level of motivation → affective occupational commitment	.11**		.11**
Change in level of motivation → responsibility to remain in teaching		.02**	.02**
Relationship satisfaction → change in level of motivation	.69**		.69**
Relationship satisfaction → affective occupational commitment	.51**	.10**	.61**
Relationship satisfaction → responsibility to remain in teaching	-.18**	.12**	-.06*
Relationship satisfaction → Salary satisfaction	.37**		.37**
Salary satisfaction → affective occupational commitment	.08**		.08**
Salary satisfaction → responsibility to remain in teaching		.02**	.02**
affective occupational commitment → responsibility to remain in teaching	.20**		.20**

* $p < .05$

** $p < .01$

In addition to testing an overall model, the possibility of a stable core in teachers' sense of their professional identity was explored. To investigate whether the model would

hold for groups of teachers with varying amounts of experience, the fit of the model was tested with the data from the 265 novice teachers, 341 experienced teachers, and 603 senior teachers that had participated in this study. Using multiple-group SEM and a χ^2 -difference test, a fully unconstrained model was compared to an invariance model where the parameters were fixed for all three groups according to the findings as presented in the final model in Figure 3.2 (page 45).

Firstly, the invariance model was investigated. This resulted in a significant and well fitting model. The results of the models tested are presented in Table 3.4. Next, the parameters of all groups were set free. The χ^2 -difference test showed that the change of χ^2 between the invariance model and the unconstrained model compared to the change in the degrees of freedom between these models was not significant, meaning the invariance model and the unconstrained model do not significantly differ. Thus, the parameters do not differ across the groups (Kline, 2005).

Table 3.4 Goodness of fit indices for the compared models

Model	df	Chi-square	P	RMSEA	CFI	NNFI	ddf	Chi-square difference
Total group model	4	9.55	0.05	0.03	0.99	0.98	-	-
Invariance model	45	44.61	0.49	0.00	1.00	1.00	-	-
Unconstrained model	12	19.29	0.08	0.04	0.99	0.97	33	25.32
Beginner model	15	24.21	0.06	0.04	0.99	0.97	3	5.08

3.5. Discussion

The primary aim of this paper was to investigate the relationships between the indicators of teachers' sense of their professional identity: teachers' self-efficacy, job satisfaction, occupational commitment, and the change in teachers' level of motivation. Based on the literature, a model was proposed and tested empirically. Using the data of 1214 secondary school teachers, a final model with satisfactory fit-indices incorporating all constructs was constructed.

The final model showed teachers' classroom self-efficacy to be contributing negatively to teachers' satisfaction with their salary. The direct as well as the total effect of teachers' classroom self-efficacy on their salary satisfaction was negative. This negative

relationship is in line with previous findings (Busch, Fallan, & Pettersen, 1998; Kim & Kim, 2001; Motowidlo, 1982). Apparently, the more competent a teacher feels within the classroom, the less satisfied the teacher is with his/her salary and fringe benefits.

It was assumed that salary satisfaction itself would contribute to affective occupational commitment as well as to teachers' feelings of responsibility to remain in teaching. The results of the final model showed that salary satisfaction indeed contributes to teachers' affective occupational commitment, but does not significantly contribute to teachers' feelings of responsibility to remain in teaching. Lee et al. (2000) found a positive correlation between job satisfaction and occupational commitment. They did make a distinction between satisfaction with work itself and satisfaction with pay, but they did not distinguish various forms of occupational commitment. The results presented here suggest this distinction should be made in future research into occupational commitment.

Relationship satisfaction, on the other hand, did contribute to both factors of occupational commitment. The effect of relationship satisfaction on teachers' affective occupational commitment was the second strongest in the model. The more positive teachers are towards the relational aspects of their work, the stronger their emotional bond is with their occupation. The model furthermore showed that the effect on responsibility to remain in teaching was negative. This means that the more satisfied the teachers are about their colleagues, support, and autonomy, the less they feel that leaving the profession will cost them much and the less guilty they feel about leaving the profession.

Classroom self-efficacy and relationship satisfaction play a key influencing role in the relationships between the indicators of teachers' sense of their professional identity. This suggests that strengthening a teacher's sense of professional identity would be able by influencing teachers' classroom self-efficacy and teachers' relationship satisfaction, as these constructs influence, in their turn, the other indicators. Classroom self-efficacy could, for instance, be strengthened by providing professional development opportunities. Relationship satisfaction could be strengthened by providing or enhancing a supportive environment, making sure teachers feel they are listened to by the school board, and developing a strong feeling of relatedness between team-members. Retaining and strengthening teachers' sense of their professional identity is important as it is relevant to the way they function in practice (Day, Elliot, & Kington, 2005), as well as how they respond to educational reforms (Battey & Franke, 2008; Day, 2002).

In addition to the primary aim of this chapter, it was explored whether teachers' sense of their professional identity is related to their teaching experience. The total group of

teachers was split into three groups: novice, experienced, and senior teachers. The results revealed that the parameter estimates for the overall group fitted the three groups well and did not significantly differ across the three groups. This aspect of similarity does not necessarily contrast the findings of Dobrow and Higgings (2005) who found that the clarity of the professional identity of 136 (former) MBA students increased over time. The clarity of the relationships as presented in the present study may increase without changing the relationships. Additionally, the similarity is in line with findings of Canrinus, Helms-Lorenz, Beijsaard, Buitink, & Hofman (in press) who found that teachers who differed from each other in their professional identity profile, did not significantly differ in their amount of experience (see also chapter 4).

3.5.1 Limitations and further research

The presented findings are not without limitations. Firstly, although the teachers participating in this study were a fairly accurate representation of the population of Dutch teachers working in secondary education (Dutch Ministry of Education, Culture and Science, 2007), information about the teachers who did not respond was very limited. If teachers did not want to participate, they were asked to reply to the invitation e-mail, stating their reason for not participating, their age, gender, subject, and their total years of experience in teaching. Unfortunately, too few teachers responded to this query for us to be able to accurately describe the characteristics of the non-respondents. The teachers who did respond replied that heavy workload and the consequent lack of time for surveys was their reason for not participating.

Secondly, the stability of the presented model was investigated using cross-sectional data. Although the overall model fitted all three, relatively large, groups of teachers and contributes to the further development of a solid theory on teachers' professional identity, a concrete developmental perspective was absent. In further and longitudinal research the stability of the presented model needs to be investigated more in depth, possibly through a more development-oriented lens.

Thirdly, Hargreaves (2000) found a distinction between the behaviour of elementary and secondary school teachers. Whether this distinction is also apparent in these teachers' perceptions of the relevant constructs for their professional identity is not studied here. The findings presented are limited to Dutch teachers in secondary education. Again, this can be regarded as an opportunity for further investigation.

Lastly, the influence of emotion in teaching has gained attention the last two decades (see for a review: Sutton & Wheatley, 2003). Kelchtermans (2009) and Nias (1996) have

mentioned emotions, for instance in the form of teachers' job satisfaction, as part of teachers' identity, based on their qualitative data. Likewise, using an ethnographical approach, Zembylas (2004; 2005) has linked teachers' emotions to teachers' professional identity. It would be contributing to the further understanding of the process of interaction between teachers and their context, when further research relates teachers' emotions to teachers' professional identity on a larger scale. This could be done, for instance, by investigating more closely how emotions are related to – or incorporated within – the specific indicators of teachers' sense of their professional identity presented here.

Although the findings have their limitations and further research is needed, the presented model is relevant for other professionals' sense of their professional identity as well. The relevant indicators (job satisfaction, self-efficacy, occupational commitment, and change in level of motivation) are constructs that play an important role in research on teachers' behaviour (cf. Ashton & Webb, 1986; Firestone, 1996) and, moreover, in more general research on occupational psychology (cf. Blau & Holladay, 2006; Judge et al., 2005). Furthermore, except for the occupation-specific items in the self-efficacy scale, the items used in the survey can easily be rephrased or directly distributed to other professionals (Irving, Coleman, & Cooper, 1997).