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Teachers' sense of their professional identity

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Chapter six: Professional identity and teacher behaviour

Abstract

In this exploratory study, eighteen teachers' professional identity profiles have been related to their effective teaching behaviours as perceived by two external observers and 334 students. Analysis of variance was used to explore the differences between the observers and students' perceptions of teachers with different identity profiles. Although no significant differences were observed by the external observers, the students of teachers with an unsatisfied and demotivated identity profile rated their teachers' behaviours 'providing clear instruction' and 'efficient classroom management' significantly higher than students' ratings of teachers with a motivated and affectively committed or a competence doubting identity profile.

This chapter is based on:

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6.1. Introduction

Although the concept of ‘professional identity’ has attracted interest in various fields of research, for instance in the medical field (Pratt, Rockmann, & Kaufmann, 2006), 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) found a strong professional identity to be related to a more pronounced critical stance towards working conditions. Hofman and Kremer (1985) and Moore and Hofman (1988) suggest professional identity to be indicative for teachers’ job-leaving intentions. 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. However, professional identity is defined in many different ways (Beijaard et al., 2004), complicating the comparison of these studies.

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 (operationalised as value-added measures of students’ progress and attainment). What is missing in the line of research presented above, are studies that investigate how and the extent to which teachers’ sense of their professional identity relates to their specific, effective teaching behaviours. The study in this chapter sets out to fill this gap.

The distinction into various types of identity started when Mead (1934) stated that the self develops by interacting with the environment, resulting in a sociological component of the self (the me) and a more personal component (the I) (Deschamps & Devos, 1998). Travimow, Triandis, and Goto (1991) hypothesized that there could be various types of personal and social identities. Deaux, Reid, Mizrahi, and Ethier (1995) explored possible dimensions and categories of social identities. They asked 259 psychology students to rate 64

identities (e.g., mother, friend, gardener, Christian) presented to them on fifteen selected traits (e.g., status, visibility, changeability) by use of a seven-point Likert scale. Cluster analysis revealed five distinct identities. One of those was called vocation/avocation identity (e.g., scientist, musician). Although Deaux et al. did not further define this identity, it confirms the notion of the existence of a vocational, or what is called here, a *professional* identity.

Teachers' professional identity generally pertains to how teachers see themselves as teachers based on their interpretations of their continuing interaction with their context (Beijaard, Meijer, & Verloop, 2004; Sugrue, 2005). It is argued here that teachers' sense of their professional identity results from the ongoing interaction between person and context and manifests itself in teachers' job satisfaction, occupational commitment, self-efficacy, and change in level of motivation (Day, 2002). These constructs represent a personal perspective on how teachers view themselves as professionals in their work (Kelchtermans, 1993). Teachers' job satisfaction, occupational commitment, self-efficacy, and 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).

In this study, these constructs are treated as relevant indicators of teachers' sense of their professional identity. In a previous study (see chapter 4 and Canrinus et al., in press), teachers were clustered based on how they rated themselves on these constructs resulting in three distinct professional identity profiles based on the data of 1214 teachers. The following professional identity profiles could be distinguished: an unsatisfied and demotivated identity profile (n = 235, 19.4 %), a motivated and affectively committed identity profile (n = 560, 46.1 %), and a competence doubting identity profile (n = 419, 34.5 %). In the study of Canrinus et al. (in press), the indicators were specified further into teachers' classroom self-efficacy, job satisfaction, feelings of responsibility to remain in teaching, satisfaction with salary, change in level of motivation, and affective occupational commitment (see also chapters 3 and 4). Figure 4.1 (chapter 4, page 59) represents the standardized mean scores of the teachers belonging to the three found professional identity profiles on these six indicators. See chapter 4 and 5 or Canrinus et al. (in press) for a more elaborate description of these profiles.

6.2. Teaching behaviour

Teachers' behaviour has been studied extensively and multiple review studies and meta-analyses in this field exist (e.g., Darling-Hammond, 2009; Scheerens, 2007; Seidel &

Shavelson, 2007; Van de Grift, 2007; Wayne & Youngs, 2003). International research in primary education has revealed that the following teaching behaviours are related to higher achievement and involvement of students: a) efficient classroom management, b) creating a safe and stimulating learning climate, c) providing clear instruction, d) providing feedback, e) adaptive teaching, and f) teaching of learning strategies (Kyriakides, Creemers, & Antiniou, 2009; Van de Grift, 2007). Seidel and Shavelson (2007) found in their meta-analysis that although the effect of the varying teaching components on student outcomes are smaller in secondary education, studies performed in primary and secondary education show similar patterns in the relevance of these teaching behaviours.

Many observational studies have been performed trying to capture and understand these effective teacher behaviours (e.g., Teddlie, Creemers, Kyriakides, Muijs, & Yu, 2006; Van de Grift, 2009). The advantage of observation lies in the objectivity of the external observers (Muijs, 2006). Systematic observation by more than one external observer adds to the objectivity of findings. This advantage is apparent, for instance, in the findings of Charlesworth, Hart, Burts, Thomasson, Mosleu, and Fleege (1993). They found that teachers' expressed importance of developmentally appropriate practices was larger than observed in these teachers' classroom behaviour.

Nevertheless, disadvantages of this method to collect data also exist. Classroom observations are always limited to a single or to several moments, leading to, what Muijs (2006) called: "[...] a collection of snapshots rather than a full picture of said teachers' behaviour over the year" (p. 58). Furthermore, although observers may try to be as unobtrusive as possible, their presence will influence the teachers' and possibly students' behaviour, with this effect being of different strength for each teacher (Muijs, 2006). Graves and Glick (1978) investigated this aspect using data of mothers and their children. In the first situation, mother and child were placed in a waiting room and were told the observer was still be busy outside the waiting room. In reality, the mother and child were filmed through a one-way screen. In the second situation, the mother and child placed in a waiting room and were aware they were being filmed directly inside the waiting room. The mother showed more behaviour which she perceived as "good parenting" when she knew she was being observed. This process is expected to hold for teachers as well.

Taking into account the disadvantages of observations, inspectorates of various countries use classroom observation to determine the quality of education in schools. The inspectorates continuously refine and adjust their instruments to be able to observe as accurately as possible (e.g., Van de Grift, 2009).

A different possibility for gathering information on effective teacher behaviour is questioning the teacher's students. This way of gathering information has various advantages (Fraser and Walberg (1981) as cited in De Jong & Westerhof, 2001); it is time and cost efficient, it is based on the daily practice of teachers instead of on only several moments, and it is unobtrusive. Additionally, students' perceptions of the classroom environment have been found to be positively related to their learning outcomes (De Jong & Westerhof, 2001).

Furthermore, adding students' perception to teacher self-report data gives a more complete picture of teachers' behaviour. Den Brok, Bergen, and Brekelmans (2006) investigated the convergence and divergence between students' and teachers' perceptions of the teachers' instructional behaviour. Their literature review revealed that, on average, teachers give higher ratings compared to their students with respect to the areas of interest, most often teachers' interpersonal behaviour. In their own study, Den Brok and colleagues used data on the Questionnaire on Instructional Behaviour of 72 teachers working in secondary education and their 1604 students. Differences were indeed found between students' and teachers' perceptions of the teachers' instructional behaviour. Nevertheless, the degree and direction of divergence was not similar for all scales of the questionnaire. Likewise, the amount of teachers with divergent scores differed over the scales. For instance, teachers rated themselves lower compared to their students' ratings on the scales 'classroom management' and 'loose control' (focusing on students' own decision making during learning activities), whereas they rated themselves higher for the scales 'strong control' (providing students with strategies to perform learning strategies) and 'shared control' (the responsibility for the learning strategies is shared by teacher and student) (Den Brok et al., 2006).

Lawrenz, Huffman, and Robey (2003) not only compared teachers' and students' perceptions, they compared these perceptions with observational data from external observers too. Using correlation data, Lawrenz and colleagues found some significant relationships between the observational data and the teacher and student questionnaire. The teacher/authority centeredness of teachers according to the observations showed, for example, a significant negative correlation with inquiring behaviour of the teacher ($r = -.32, p < .01$) and group activities in the classroom ($r = -.36, p < .01$), both as perceived by the students.

More recently, Van der Schaaf, Stokking, and Verloop (2008) investigated the correspondence between teachers' beliefs towards teaching students research skills, their behaviour as rated by external raters of these teachers' portfolio's, and the teachers' behaviour as rated by the teachers' students. Among other findings, Van der Schaaf and

colleagues found a significant relationship between the external raters' assessments and the students' assessment of the teachers' behaviours ($r = .21, p < .05$). Gathering information from teachers' students on the teachers' effective behaviour appears, thus, efficient and valid.

6.2.1 Relating professional identity and effective teaching behaviour

The indicators of teachers' sense of their professional identity, being teachers' occupational commitment, self-efficacy, job satisfaction, and change in level of motivation, have been shown to be related to effective teaching behaviour and teacher effectiveness when studied individually. Research combining these indicators and relating them to effective teaching behaviour has not been performed yet. Some examples of studies in which the separate indicators are related to teaching behaviour are presented here.

Using hierarchical cluster analysis on data of 103 teachers, Muijs and Reynolds (2002) distinguished two groups of teachers who differed significantly ($T = 6.2, p < .001$) in their effectiveness, measured by increase of grade average on standardized tests. The effective teachers were characterized by, among others, high levels of self-efficacy. Likewise, Ross (1992) had previously found, using stepwise multiple regression analysis, that teachers' self-efficacy matters for student achievement. He made a distinction between personal teaching efficacy (the expectation to be personally able to bring about student learning) and general teaching efficacy (the belief that one's ability to bring about student learning is limited by factors beyond a teacher's control) and specifically found personal teaching efficacy to be relevant.

Examining the effect of teacher characteristics on indicators of good classroom practice in mathematics classes in secondary education, Opdenakker and Van Damme (2006) found that teachers with higher levels of job satisfaction give more instructional support to their classes. A total of 78 teachers, teaching mathematics to 132 classes, distributed over 47 schools, participated in the study. Based on their findings, Opdenakker and Van Damme concluded: "The enhancement of the job satisfaction of teachers is a means to enhance the instructional support of classes composed of a rather low ability range" (p. 14).

Based on the responses of teachers and students from 10 high schools to interview questions about, for instance, 'what kinds of things make teachers/ students think about staying in this school', Firestone and Rosenblum (1988) concluded that teachers' and students' commitment are interrelated. Additionally, indirect evidence shows the importance of teachers' commitment for effective teaching. Jepson and Forrest (2006) found teachers' occupational commitment to be the strongest predictor of teachers' perceived stress ($\beta = -.59, p < .001$) compared to Type A behaviour, personal achievement strivings, gender, and

experience of teaching. Teachers' stress does not positively contribute to effective teaching. As teacher effectiveness is the aim for many schools, teacher commitment should be high.

Ofoegbu (2004) asked 772 public school teachers, working in primary and secondary education, the extent to which these teachers agreed to various statements on the relationship between teacher motivation and teacher effectiveness. Of the primary as well as secondary school teachers, 75% indicated that teacher motivation would contribute to their classroom effectiveness. Ololube (2006) found similar results for 680 secondary school teachers in Nigeria. Previously, based on the expectancy motivation theory, Miskel, DeFrain, and Wilcox (1980) had investigated the relationship between teachers' job performance and teachers' motivation as well. They used data of secondary school teachers as well as teachers working in higher education. Results revealed that teachers' job performance as perceived by their principals or department chairs could significantly be explained by teachers' motivation.

6.3. Research aims

Individually, the indicators of teachers' sense of their professional identity have been linked to teachers' behaviour. With the present study, we set out to relate teachers' sense of their professional identity to teachers' effective teaching behaviour, using all indicators. We aim to relate the found professional identity profiles to teachers' effective teaching behaviours: a) efficient classroom management, b) creating a safe and stimulating learning climate, c) providing clear instruction, d) providing feedback, e) adaptive teaching, and f) teaching of learning strategies. As mentioned in the introduction, studies that investigate how and the extent to which teachers' sense of their professional identity influences their specific effective teaching behaviours have not been performed yet. This study is therefore exploratory.

Van de Grift (2010) found that the majority of the teachers in primary and secondary education are able to perform the teaching behaviours 'efficient classroom management', 'creating a safe and stimulating learning climate', 'providing clear instruction', and 'providing feedback'. The teaching behaviours 'adaptive teaching' and 'teaching of learning strategies' have been found to be the most complex of the effective teaching behaviours (Kyriakides et al., 2009; Van de Grift, 2010). Over 60% of teachers do not, or do not adequately, perform these behaviours (Van de Grift, 2010). It is therefore explored in this study whether, if differences in effective teaching behaviours exist between teachers with different professional identity profiles, these differences are observed in the more complex or in less complex teaching behaviours.

6.4. Method

6.4.1 Participants

The previously constructed professional identity profiles were based on the data of 1214 teachers working in secondary education in the Netherlands. Of this group of teachers, 100 teachers who had indicated a willingness to take part in further research were asked to participate in a study in which observational data would be collected. They were selected based on their location (teachers within a travelling distance of 100 miles were selected). Some of the teachers who were asked to participate indicated they did not like to be observed by external observers in their classroom, others had left the teaching profession in the meanwhile, and, finally, there were teachers who replied they did not have the time to participate during the period of observation. In total, 18 teachers, working in eight different schools, participated in the collection of observational data. Males and females were equally distributed (each 50%) in this sample. The teachers' average age was 50 years (SD = 8.6) and their average amount of experience in education was 22 years (SD = 10.9). Two teachers had an unsatisfied and demotivated identity profile, nine teachers had a motivated and affectively committed identity profile, and seven teachers had a competence doubting identity profile. Additionally, 15 teachers asked their students, 334 in total, to fill in a questionnaire about their teacher's teaching behaviour. Due to time constraints (e.g., end of school year and course free weeks in the school) three teachers were unable to distribute the questionnaire among their students.

6.4.2 Observation

After a training, two observers collected the observational data of 17 teachers twice and collected data once of one teacher, due to personal circumstances of this teacher. The observed teachers differed in the subject (e.g., biology, Latin, science, English) and the age-group they taught (first to last grade classes). Ten teachers taught at the level of pre-university education, one teacher taught at higher general secondary education level, and seven teachers taught at lower general secondary education level.

For the collection of the data, the observation instrument developed for the International Comparative Analysis of Learning and Teaching project (ICALT) was used. This instrument was tested for its reliability and validity in England, Belgium, Germany, and the Netherlands (Van de Grift, 2007). Originally, this instrument was developed for observations in primary education. Nevertheless, the behaviours observed with this instrument are relevant in secondary education as well. Seidel and Shavelson (2007) found similar patterns in the relevance of the teaching behaviours for primary and secondary

education. The Dutch educational inspectorate refers to these behaviours when investigating the quality of secondary schools (Inspectie van Onderwijs, 2009). The instrument was found suitable for the observation of teachers' behaviour in secondary education.

Besides items concerning background information, such as subject being taught and amount of students in the classroom, the observation instrument consists of 32 items tapping the aforementioned teaching behaviours. In Table 6.1, item examples are provided. The behaviours are scored on a four-point Likert scale, where '1' indicates a 'predominantly weak' appearance of the behaviour and '4' indicates a 'predominantly strong' appearance of the behaviour. For psychometric reasons, the items scoring the behaviour "providing feedback" are grouped together with items measuring the behaviour "providing clear instruction" (following Van de Grift, 2009).

Table 6.1 Example items from the observation instrument per teaching behaviour

Teaching behaviour	Number of items	Item example
Efficient classroom management	4	The teacher gives a well-structured lesson.
Creating a safe and stimulating learning climate	5	The teacher ensures a relaxed atmosphere.
Providing clear instruction	10	The teacher gives clear explanations of the learning materials and the assignments.
Adaptive teaching	4	The teacher adapts the assignments and processing to the relevant differences between students.
Teaching of learning strategies	9	The teacher teaches students how to simplify difficult problems.

Inter-observer reliability was assessed for all behaviours. As the behaviours are scored at ordinal level and the sample size is small, Kendall's tau was used for this purpose (Field, 2005). The observers' ratings of the behaviours 'efficient classroom management' ($\tau = .39, p < .05$), 'creating a safe and stimulating learning climate' ($\tau = .54, p < .01$), and 'providing clear instruction' ($\tau = .60, p < .01$) were positively and significantly related. Kendall's tau could not be calculated for the teaching behaviours 'adaptive teaching' and 'teaching of learning strategies', as these behaviours had been rated too infrequently.

6.4.3 Student questionnaire

In addition to the observational data collected by two external observers, data on teachers' behaviours were gathered from the teachers' students. The students of the classes in which the observers had been present were asked to complete a questionnaire based on the ICALT instrument. Most of the students had completed the questionnaire after a different lesson than the lesson in which the observers had been present. The classes of 15 teachers were able to participate, resulting in data of 334 students.

The student questionnaire consisted of 35 statements about their teacher (see Table 6.2). On a four-point Likert scale, the students indicated the extent to which they agree with the statements, where '1' indicates '(almost) no agreement at all' and '4' indicates '(almost) complete agreement'. Each of the teaching behaviours was represented in the student questionnaire. The internal consistency of the items was calculated for all behaviours (see Table 6.2).

Table 6.2 Number of items, example items, and internal consistency of the student questionnaire per teaching behaviour

Teaching behaviour	Number of items	Item example	Cronbach's alpha
Efficient classroom management	4	I believe my teacher teaches in a well structured way.	.79
Creating a safe and stimulating learning climate	5	I believe my teacher creates a relaxed atmosphere in class.	.77
Providing clear instruction	12	I believe my teacher explains the assignments clearly to me.	.83
Adaptive teaching	4	I believe my teacher takes the differences between students into account during the assignments.	.80
Teaching of learning strategies	10	I believe my teacher stimulates me to simplify difficult problems.	.82

The statements tapping the behaviour 'providing feedback' revealed the least internal consistency with $\alpha = .55$. Therefore, these items were grouped together with the items measuring the behaviour "providing clear instruction", as was the case with the observation instrument (following Van de Grift, 2009). Additionally, adding these items enhanced the internal consistency of the measurement of "providing clear instruction" from $\alpha = .78$ to $\alpha =$

.83 (the latter is presented in Tabel 6.2). The internal consistency of the other behaviours was satisfactory, ranging from $\alpha = .77$ for 'creating a safe and stimulating learning climate' to $\alpha = .82$ for 'teaching of learning strategies'. The students' ratings of the teaching behaviours showed, when plotted per teacher, a pattern similar to the Rasch model of the behaviours presented by Van de Grift (2009). The more difficult the behaviours are, perceived within Van de Grift's Rasch model, the lower the students have scored these behaviours, suggesting the student questionnaire is a valid measurement of the behaviours.

6.5. Results

Table 6.3 presents the observers' scores on the teaching behaviours per professional identity profile. The teaching behaviours 'adaptive teaching' and 'teaching of learning strategies' were observed in too few cases to include in the analyses.

For explorative purposes, although the group sizes are small, the data of the external observers were explored by analysis of variance (ANOVA). Results indicate no significant differences across identity profiles with significance levels ranging from $F(2,15) = .52, p = .60$ for 'creating a safe and stimulating learning climate' to $F(2,15) = .15, p = .87$ for 'providing clear instruction'. A closer inspection of the behaviours at item level leads to similar findings. This result suggests that teachers with different professional identity profiles do not differ in their effective teaching behaviour.

The data of the student questionnaire provided a different picture of the teachers' effective behaviours. The students' average score on the teaching behaviours are presented in Table 6.3 as well. The table shows that, except for the teaching behaviour 'Adaptation of teaching', students of teachers with an unsatisfied and demotivated identity profile rate their teacher's teaching behaviours higher than students of teachers with a different professional identity profile. Furthermore, students of teachers with a motivated and affectively committed identity profile rate all teaching behaviours lower than students of teachers with a different professional identity profile.

To check whether these differences were significant, an ANOVA was performed. The ANOVA showed that teachers with different professional identity profiles differ regarding their teaching behaviour as rated by students. Specifically, the teaching behaviour 'providing clear instruction' differed across professional identity profiles ($F(2,331) = 3.71, p < .05$). Bonferroni's post-hoc test revealed that students of teachers with an unsatisfied and demotivated identity profile rated this scale significantly higher than students of teachers with a motivated and affectively committed identity profile ($M = .18, SD = .07, p < .05$).

Table 6.3 External observers' and students' mean perception, including standard deviation, of the teachers' teaching behaviours per professional identity profile

	Efficient classroom management	Creating a safe and stimulating learning climate	Providing clear instruction	Adaptive teaching	Teaching of learning strategies
Unsatisfied and demotivated identity profile					
External observers (N=2)	3.76 (.16)	3.53 (.39)	3.40 (.21)	-- ^a	-- ^a
Students (N=46)	3.09 (.41)	3.10 (.44)	3.00 (.35)	2.82 (.65)	2.89 (.44)
Motivated and affectively committed identity profile					
External observers (N=2)	3.47 (.42)	3.35 (.39)	3.26 (.30)	-- ^a	-- ^a
Students (N=137)	2.87 (.66)	2.93 (.57)	2.83 (.45)	2.81 (.60)	2.75 (.44)
Competence doubting identity profile					
External observers (N=2)	3.39 (.52)	3.46 (.18)	3.31 (.43)	-- ^a	-- ^a
Students (N=151)	2.86 (.65)	3.00 (.57)	2.93 (.44)	2.91 (.69)	2.85 (.52)
Total					
External observers (N=2)	3.47 (.44)	3.41 (.31)	3.29 (.44)	-- ^a	-- ^a
Students (N=334)	2.89 (.63)	2.98 (.55)	2.90 (.44)	2.86 (.65)	2.81 (.48)

^a The behaviours 'adaptive teaching' and 'teaching of learning strategies' had been rated too infrequently by the external observers for reliable scores.

The possible difference between professional identity profiles on the teaching behaviour 'efficient classroom management' was investigated using the Welch F -ratio (Field, 2005), due to the inequality between the profiles regarding the variance of the students' ratings of this behaviour. Results show that the profiles significantly differed regarding this specific teaching behaviour ($F(2, 155.65) = 4.89, p < .01$). Students of teachers with an unsatisfied and demotivated identity profile rated this teaching behaviour higher than students of teachers with a motivated and affectively committed ($M = .22, SD = .08, p < .05$) or competence doubting ($M = .23, SD = .08, p < .05$) identity profile. These results suggest that teachers with different professional identity profiles do indeed differ in their effective teaching behaviour, which contrasts the findings of the external observers.

6.6. Discussion

In this study, we explored whether teachers differing from each other in their professional identity profiles would also differ in their teaching behaviour. The following teaching behaviours were observed for this purpose: 'efficient classroom management', 'creating a safe and stimulating learning climate', 'providing clear instruction', 'providing feedback', 'adaptive teaching', and 'teaching of learning strategies'. Providing feedback was investigated as part of the behaviour 'providing clear instruction'. 'Adaptive teaching' and 'teaching of learning strategies' were perceived as complex behaviours. Differences in these behaviours were also explored through the observations of teachers' students, measured using a questionnaire.

Regarding the less complex behaviours, the external observers did not find differences between teachers with different identity profiles. On the other hand, the teaching behaviour 'providing clear instruction' was rated significantly higher by students of teachers with an unsatisfied and demotivated identity profile compared to students of teachers with a motivated and affectively committed identity profile. Likewise, 'efficient classroom management' was rated significantly higher by these students compared to the students of teachers with either other profile. Only the students' scores on the behaviour 'creating a safe and stimulating learning climate' were similar across the identity profiles. Thus, the three groups of teachers in this study created equally safe and stimulating climates for their students.

Regarding the two complex behaviours, i.e., 'adaptive teaching' and 'teaching of learning strategies', the external observers observed these behaviours too infrequently to be able to analyze the data. Based on the data of the students no significant differences regarding the more complex behaviours were found between teachers differing from each

other in their professional identity profiles. The findings show, furthermore, that the students of teachers with a motivated and affectively committed identity profile rated their teachers lowest compared to the other teachers' students. Thus, although a teacher may have a motivated and affectively committed identity profile, this does not directly mean the teachers' students perceive this teacher as performing more effective behaviour.

Their students rated these motivated and affectively committed teachers significantly lower on the behaviours 'clear instruction' and 'efficient classroom management'. A possible explanation might be that teachers who feel comfortable in their profession do not feel the need for strict instruction and classroom management. They may believe they can teach in a more *laissez faire* way. Yet, students may need more structure and more clear instruction than these teachers feel necessary for their teaching to be effective. Darling-Hammond (2009), for instance, expressed the relevance of strong instruction for teaching quality. Van der Werf and Tesser (1989) (in Van de Grift, 2007) found that structured teaching had effects on the advice given to primary school students regarding their choice of type of secondary school. Likewise, Stronge, Ward, Tucker, and Hindman (2007) used in-depth case studies from teachers among the highest and lowest quartiles based on their composed student academic growth score. They found that the effective teachers scored higher regarding instruction and classroom organisation compared to the ineffective teachers as measured by classroom observations. This suggests that although teachers may feel motivated and affectively committed, they should keep in mind that their students will achieve more with clear instruction and an efficiently managed classroom. These findings strengthen the statement of Den Brok and colleagues (2006) for using students' data in addition to other data sources to obtain a more comprehensive understanding of teachers' behaviours.

6.6.1 Limitations and further research

Students' perceptions of teachers' behaviour have the advantage of being based on year long experiences (Fraser and Walberg (1981) as cited in De Jong & Westerhof, 2001). The two external observers who collected data for this study observed each teacher only twice. Although the observers received training in advance, it was the first time they worked with the ICALT instrument. The noviceness of the instrument for the observers may be an additional cause of the lack of rating of the more complex behaviours. Likewise, the more complex behaviours may be more difficult to observe in the context of secondary education, even though the items used are relevant for this type of education (Inspectie van Onderwijs, 2009; Seidel & Shavelson 2007).

Additionally, a limitation of the design of this study may explain the found differences between the ratings of students of teachers with a different professional identity on the more elementary behaviours. The students only rated one teacher, thus rating only one professional identity profile. It was not investigated whether these students would rate teachers with other professional identity profiles differently. The findings present options for further research asking students to rate multiple teachers with a different as well as the same professional identity profile.

Likewise, teachers' professional identity profiles could be related to other aspects of the teaching profession. How are teachers' professional identity profiles related to teachers' functioning within the broader school context, for example, communication with parents or specific extra tasks besides standard classroom work? Relationships within school teams and between teachers have become more and more important (e.g., Moolenaar, 2010). Teachers' sense of their professional identity may very well play a role in these relationships. How are teachers' professional identity profiles related to relationships with co-workers? Do teachers feel more connected with teachers with the same professional identity profile?

Although researchers have made claims about outcomes of teachers' professional identity (e.g., Moore & Hofman, 1988; Day, 2002), until now, no studies existed which related teachers' sense of their professional identity to specific effective teaching behaviours. Day and colleagues (2006) made a step in this direction in their VITAE study, focussing directly on student achievement measures. The link between teachers' sense of his/her professional identity and the students' achievements, the teachers' behaviour, was not included in their study. As students' perception of their classroom and of their teachers' behaviour has been found to be related to student outcome (De Jong & Westerhof, 2001), this aspect should be taken into account. The present study has specifically focused on the relationship between teachers' sense of their professional identity and their specific, effective teaching behaviours as perceived by both the teachers' students and external observers.

