



# A typology of veteran teachers' job satisfaction: their relationships with their students and the nature of their work

Wilfried Admiraal<sup>1</sup> · Ietje Veldman<sup>2</sup> · Tim Mainhard<sup>3</sup> · Jan van Tartwijk<sup>3</sup>

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## Abstract

The relationship with students is one of the main sources of teachers' job satisfaction throughout their career. To support veteran teachers and decrease attrition rates during the late career, more insights are necessary to understand the complex relationship between veteran teachers' relationships with their students and their job satisfaction. In the current study, we have developed a typology of veteran teachers based on both student perceptions and teacher perceptions of teachers' interpersonal relationships with their students and teachers' self-reported job satisfaction. Four groups of teachers were identified: *positive over-estimators* and *positive under-estimators* refer to teachers with relatively high job satisfaction and *negative under-estimators* and *negative realists* included teachers who are relatively dissatisfied with their teaching job. Satisfied veteran teachers seem to attach importance to the quality of the teacher-student relationship, whereas unsatisfied veteran teachers also attribute their dissatisfaction to extrinsic and school-based factors such as work conditions and governmental policies. We also found differences in the extent to which veteran teachers had realistic perceptions of their relationships with students. Two types of veteran teachers, *positive under-estimators* and *negative under-estimators*, underestimated their relationships with students, whereas one type of satisfied veteran teachers overestimated this relationship (*positive over-estimators*). Just one type of teachers generally showed realistic self-perceptions of their relationships with students, but these teachers were generally quite dissatisfied (*negative realists*). Implications for supporting veteran teachers are discussed.

**Keywords** Veteran teachers · Job satisfaction · Typology · Teacher-student relationship · Attrition

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✉ Wilfried Admiraal  
w.f.admiraal@iclon.leidenuniv.nl

Extended author information available on the last page of the article

## 1 Introduction

Low job satisfaction is an important cause of teacher attrition (Bobbitt et al. 1991; Nagar 2012; Perrachione et al. 2008). The highest turnover and attrition rates seen for teachers occur in their first years of teaching and after many years of teaching when they are near retirement, thus producing a U-shaped pattern of attrition with respect to age or experience (Borman and Dowling 2008; Guarino et al. 2006; Harris and Adams 2007; Ingersoll and May 2012). Although in some research on teachers' development throughout their career, the terms "experienced" and "veteran" teachers are used interchangeably (see Day and Gu 2009), the term "veteran" refers to a combination of teaching years (24+ or 31+, Day and Gu 2009) and age (50+; Ben-Perez and McCulloch 2009) with veteran teachers in a different stage of both their career and personal life compared to novice teachers. Dropout of veteran teachers is not only a personal drama, increasing teacher shortages in many countries are problematic, too. The OECD's report *Teachers matter* (OECD 2005) shows that many countries have experienced great difficulty in retaining a core of experienced teachers and there are severe problems of high staff turnover and attrition. It seems particularly important in these circumstances that we should support great teacher retention and recognize the qualities of more experienced teachers. This means greater understanding is needed of the determinants of job retention and job satisfaction among veteran teachers. Many factors might influence teachers' job satisfaction. Research indicates that interpersonal relationships with students in class may be an important, yet underinvestigated, factor in teachers' job satisfaction (Betoret 2006; Chang 2009; Klassen and Chui 2010; Kyriacou 2001; Spilt et al. 2011). For veteran teachers in particular, the relationship between job satisfaction and interpersonal processes in class seems to be complex. In a study among twelve veteran teachers, Veldman et al. (2016) found that veteran teachers' job satisfaction appeared to be positively associated with the extent to which they realized their aspirations in their relationships with students. Teachers who had failed to realize their interpersonal aspirations reported either relatively low job satisfaction or a reduced number of activities directly related to teaching in order to avoid being confronted with negative teacher-student relationships and consequently feelings of low job satisfaction and distress. Furthermore, perceptions of students and teachers of teachers' relationships with students are not always aligned (Brekelmans et al. 2011; Veldman et al. 2013; Wubbels et al. 2006). Some teachers perceive their relationship with students more positively than their students and other teachers more negatively. This over-estimation or under-estimation of their relationship with students might be both sources of job satisfaction and ways teachers cope with job dissatisfaction.

Teachers' confidence in being able to realize the interpersonal aspirations can be regarded as a constituent part of teachers' self-efficacy. Self-efficacious teachers suffer less from stress and burnout, and experience higher levels of personal accomplishment, commitment and job satisfaction (Caprara et al. 2003; Tschannen-Moran and Woolfolk Hoy 2001, 2007; Vieluf et al. 2013, Zee and Koomen

2016). Related to the importance of teacher-student relationships for job satisfaction, we can speak of teachers' interpersonal self-efficacy, i.e. "teachers' self-efficacy in building and maintaining interpersonal relationships with students that are positive and conducive to student learning" (Veldman et al. 2017, p. 412).

In order to understand the complex relationship between veteran teachers' relationships with their students and their job satisfaction, and to support these teachers and keep them satisfied with teaching, we took a person-centered approach (cf. Asendorpf et al. 2013). Our aim was to develop a typology of veteran teachers, based on both their interpersonal relationships with their students and their job satisfaction, to identify groups of veteran teachers and to examine how these groups differ from one another. Ultimately, knowledge of these teacher types may be helpful for the development of interventions targeted at specific groups of veteran teachers with the aim of sustaining or improving their job satisfaction.

### 1.1 Veteran teachers' job satisfaction

Job satisfaction is defined as "a pleasurable condition of a positive emotional state resulting from the appraisal of one's job or job experiences" (Locke 1976, p. 1300), and is the result of a personal assessment of one's work and work experiences. In a study of over 2000 teachers in Italy, Caprara et al. (2006) showed a relationship between teachers' job satisfaction and student achievement, both influenced by teachers' self-efficacy. Teacher attributes related to teacher satisfaction with their profession refer to dispositions including, among others, self-efficacy, commitment, resilience, apathy, and teaching motivations (e.g., Day and Gu 2009; Grant 2006; Hancock and Scherff 2010; Klassen 2010; Van Maele and Van Houtte 2012). Dinham and Scott (1998) classified sources of teachers' job satisfaction into three domains: (a) factors intrinsically connected to the teaching profession, (b) school-based factors, and (c) factors outside school. Factors intrinsically connected to teaching refer the actual work of teaching, working with the students, and seeing students learn and develop. These intrinsic factors generally are primary motives for becoming a teacher and to stay committed to the teaching profession (Moses et al. 2017; Scott et al. 2001). School-based factors or contextual variables at school include relations with colleagues, parents, and the school leadership, as well as time pressure, disruptive student behavior, and the values emphasized at the school. Factors outside the school refer to reforms imposed by the government, external school reviews, and negative image of the teaching profession in society.

Teachers' commitment with the teaching profession is mainly caused by their intrinsic motivation, which refer to the 'nature of work' as defined by Van der Ploeg and Scholte (2003). Examples of these intrinsic motivations are the desire to teach and help children (Brookhart and Freeman 1992; OECD 2005; Struyven, Jacobs and Dochy 2013). Grayson and Alvarez (2008) found that teachers who succeeded in maintaining positive relationships with their students were more likely to stay committed to their work. These findings are in line with other studies showing that interpersonal relationships that teachers maintain at work significantly predict burnout (e.g., Cano-García et al. 2005; Dorman 2003; Friedman 2003; Gavish and Friedman

2010; Grayson and Alvarez 2008; Greenglass and Burke 2003; Skaalvik and Skaalvik 2009, 2011, 2017). Moreover, Van Droogenbroek et al. (2014) found that interpersonal relationships with different stakeholders (students, parents, colleagues and supervisors) at work do not have a similar impact on burnout, with relationship with students as the most important one.

In their *Vitae* study, Day and Gu (2010), Day et al. (2006) investigated teacher's wellbeing, connected to teachers' lives, work, and effectiveness in different phases in their careers. Whereas some teachers with long teaching careers (over 31 years) kept up their motivation for, and stayed satisfied with the teaching profession, others were tired and lost their commitment to teaching. As causes of their poor job satisfaction the latter veteran teachers referred to policy measures, private circumstances, the massive paperwork burden, long working hours and work load in general. These factors mostly relate to school and the teaching profession in general. Yet the reward from good student outcomes and good teacher-student relationships were the most important factors for those veteran teachers who stayed satisfied in the profession. These factors refer to the intrinsic rewards of teaching according to Dinham and Scott (1998).

## 1.2 Interpersonal relationships of teachers with their students

To examine interpersonal relationships between teachers and students, Wubbels et al. (1992) developed the Questionnaire on Teacher Interaction (QTI). The QTI can be regarded as an operationalization of the Interpersonal Circle (Horowitz and Strack 2010) applied to the teacher (see Wubbels et al. 2012). Underlying this interpersonal circle are two independent dimensions that describe perceptions of the interpersonal meaning of behavior: agency (the amount of dominance or interpersonal influence) and communion (the warmth or affiliation in interpersonal contact; Wubbels et al. 2012). The QTI can be used to tap student perceptions as well as teachers' self- and ideal perceptions of teacher agency and communion.

In a longitudinal study, Brekelmans et al. (2005) found that, in general, teachers' ideal self-perceptions of their relationships with students are rather stable throughout their careers for both agency and communion. Yet teachers' self-perceptions and students' perceptions of teacher agency generally increase during the first 10 years of teaching and then level off. These authors also found, on average, a small decrease in self-perceived communion throughout teachers' careers.

In an in-depth study among twelve veteran teachers, Veldman et al. (2016) found discrepancies between teachers' ideals of their interpersonal relationships with students, and how they perceived these relationships in class. The teachers mentioned the growing age gap between themselves and the students as a cause of this discrepancy between ideal and self-perceptions. Wubbels et al. (1992) studied the differences between teacher self-, ideal, and students' perceptions of teachers' interpersonal relationships with students in class of 143 teachers. They found that the differences between teachers' ideal perceptions and student perceptions were the most distinct. They also found important differences between teacher self- and ideal perception for most teachers and concluded that most teachers think they do

not reach their personal ideal. Comparing the three types of perceptions, Wubbels et al. (1992) found that self-perceptions of two-thirds of the teachers were positioned between their ideal and the student perception. They interpreted this as 'wishful thinking' of the teacher, which may have the function to reduce cognitive dissonance (Festinger 1957). The remainder of the teachers perceived their own behavior as conveying even less agency and communion than students did. Wubbels et al. (1992) suggested that these teachers may protect themselves from disappointment, which might be a result from a confrontation with students whose perceptions are more negative than their own.

### 1.3 The aim of this study

The current study was focused on unravelling the complex relationship between veteran teachers' job satisfaction and their relationships with their students. We use the term interpersonal aspirations for teachers' ideal perceptions of their relationships with their students. The degree to which teachers realize these interpersonal aspirations can be conceived of as the difference between their ideal and self-perceptions (Veldman et al. 2016). The degree to which teachers have accurate self-perceptions is the difference between teachers' self-perceptions of their relationships with their students and how students perceive their relationship with their teacher.

The aim of this study was to understand how veteran teachers' realized interpersonal aspirations, and the accuracy of their perceptions of the interpersonal relationship with their students combine with their job satisfaction. These insights might help in developing specific measures for coaching different types of veteran teachers and maintaining job satisfaction. Several typologies of (veteran) teachers exist, such as the four types of dominant career trajectories of Hargreaves (2005) and the distinctions of Day et al. (2006). These typologies are solely based on teachers' motivation and job satisfaction. Given the central role of teacher-student relationships to the profession in general (Betoret 2006; Chang 2009; Klassen and Chui 2010; Kyriacou 2001; Spilt et al. 2011) and to veteran teachers' job satisfaction in particular (Veldman et al. 2013, 2016), interpersonal aspects of the teaching profession are a potentially valuable addition to existing categorizations aimed at capturing types of veteran teachers. Findings from Veldman et al. (2013, 2016) are based on small samples and qualitative methods. In the present study, we developed profiles of veteran teachers based on a larger sample including characteristics of the interpersonal relationships teachers have with their students and their job satisfaction. We used the following variables related to the teacher-student relationship: realized interpersonal aspirations (the difference between teachers' aspirations (ideal perception) and self-perception) and accuracy of self-perceptions (the difference between teachers' self-perception and the student perception). Our study was guided by the following research question:

"What types of veteran teachers can be distinguished based on their realized interpersonal aspirations with students, the accuracy of their self-perceptions of their interpersonal relationships with students, and their satisfaction with the nature of their work?"

## 2 Methods

### 2.1 Participants

To get into contact with teachers, we requested the collaboration of fifteen school boards of professional development schools in the western part of the Netherlands. All schools were schools for secondary education. After a clear explanation of the study objectives and confidentiality issues and assuring teachers that participation was voluntary and that they could opt out any time, school boards invited their veteran teachers (55 years or older) to participate in our research. We used a practical definition of veteran to combine teaching experience and age. In the Netherlands, teachers 55 years old or older generally have a maximum of 30 years teaching experience. In total, 168 teachers gave their full consent and participated (112 males, 56 females). The data of 36 teachers had to be excluded from further analyses, as these teachers had an incomplete dataset. This relatively high number of missing data was due to the combination of three questionnaires, which were completed by two different groups (teachers and their students) and at three different times. Because of these practical reasons, we do not expect any bias caused by missing data. Research clearance was obtained from the ICLON Research Ethical Committee of Leiden University.

### 2.2 Measures

In order to develop a typology of veteran teachers, we collected data about veteran teachers' ideal perceptions, and self-perceptions of their relationships with their students, students' perceptions of these interpersonal relationships, their job satisfaction, and feelings of interpersonal self-efficacy.

#### 2.2.1 Ideal, self-, and student perceptions of the interpersonal relationship

Ideal, self-, and student perceptions of the interpersonal relationships were measured using the 24-item Dutch version of the Questionnaire on Teacher Interaction (QTI-24; Mainhard 2015). The QTI is used to measure teacher perceptions, which are indicative of teacher-student relationships. Items take the form of statements about the teacher, for example, "This teacher is friendly" and "This teacher gets angry quickly". Answers were provided on a 5-point Likert-type scale with 1 = "never" and 5 = "always". Students and teachers completed identical questionnaires, albeit with different instructions printed on the form. Students answered the questions on how they generally perceived their teacher during class (student perceptions of the interpersonal relationship with their teacher); teachers answered the questions on how they thought they usually taught that class (self-perceptions) and on their personal ideals (ideal perceptions). Brekelmans et al. (2011) showed that the 24 items of these versions are scaled in a similar way on the two underlying dimensions Agency and Communion. The reliabilities of the scales in terms of Cronbach's  $\alpha$  are

as follows: Agency 0.81(self-perceptions), 0.68 (ideal perceptions), and 0.72 (student perceptions); and Communion 0.87 (self-perceptions), 0.83 (ideal perceptions), and 0.90 (student perceptions). Although Cronbach's  $\alpha$  varies for the different scales and data sources, all reliabilities satisfy 0.60 that is commonly set a minimum (Nunnally 1978).

The two main dimensions that relate to the teacher-student relationship are based on the perceptions measured using the QTI. First, scores on veteran teachers' *realized interpersonal aspirations* with their students were calculated as the difference between teachers' ideal and self-perceptions; the lower the score, the more teachers realized their aspirations. Second, scores on *accuracy of the self-perceptions* of veteran teachers' interpersonal relationships with their students were calculated as the difference between self-perceptions and student perceptions; the more closely scores approach 0, the more accurate teachers' self-perceptions are, with positive scores indicating overestimation and negative scores underestimation. We present the descriptive statistics for all variables in Table 1.

### 2.2.2 Teachers' job satisfaction

We used the Dutch Job Satisfaction Index (ASI; Van der Ploeg and Scholte 2003) to measure five basic aspects of teachers' job satisfaction: (1) Nature of work (challenge, opportunities to use one's capabilities), (2) Management support (appropriate guidance and appreciation from the school management), (3) Autonomy (freedom

**Table 1** Descriptive statistics for all scales (SD=standard deviation)

	Mean	SD	Min.	Max.	N <sup>a</sup>
Relationship with students					
Realized aspiration agency	0.23	0.37	-0.82	1.52	157
Realized aspiration communion	0.48	0.50	-0.83	2.20	157
Accuracy self-perception agency	0.10	0.42	-0.99	1.02	132
Accuracy self-perception communion	0.11	0.54	-1.52	1.32	132
Self-perception agency	0.73	0.46	-0.80	1.87	157
Self-perception communion	1.16	0.48	-0.45	2.12	157
Ideal-perception agency	0.96	0.35	-0.06	1.92	157
Ideal-perception communion	1.64	0.41	0.28	2.34	157
Student perception agency	0.61	0.31	-0.18	1.33	154
Student perception communion	1.03	0.47	-0.99	1.88	154
Job satisfaction					
Nature of work	4.22	0.66	1.50	5.00	157
Management support	3.87	0.70	1.50	5.00	157
Autonomy	3.72	0.69	1.50	5.00	157
Relationship with colleagues	3.84	0.66	1.67	5.00	157
Working conditions	3.25	0.95	1.17	5.00	157

<sup>a</sup>157 teachers completed the ideal and self-perception questionnaire and 132 of these teachers administered the student questionnaire

to make own choices, joint decision making), (4) Relationship with colleagues, and (5) Work conditions (salary, holidays). The aspect Nature of work is congruent with factors that are intrinsically related to the teaching profession (Dinham and Scott 1998). Sample items for Nature of work are: “In my work I have sufficient opportunities to use my knowledge and skills” and “My work is a real challenge for me”. The other four aspects of the Job Satisfaction Index are related to what Dinham and Scott (1998) label extrinsic factors (i.e., work conditions) and school-based factors (i.e., Relationship with colleagues, Management support, and teachers’ Autonomy). Examples of items of these four scales are “I feel supported by my school leader” (Management support), “I have a lot of freedom in my work” (Autonomy), “I have the feeling that my colleagues appreciate my work” (Relationship with colleagues), and “My salary is too low given the work I’m doing” (work conditions). All answers were provided on a five-point Likert-type scale, ranging from 1 = “very unsatisfied” to 5 = “very satisfied”. The reliabilities of the scales in terms of Cronbach’s  $\alpha$  are  $\alpha=0.81$  (Nature of work),  $\alpha=0.78$  (Management support),  $\alpha=0.81$  (Autonomy),  $\alpha=0.80$  (Relationships with colleagues), and  $\alpha=0.86$  (Work conditions).

### 2.2.3 Teachers’ interpersonal self-efficacy

In order to measure teachers’ self-efficacy in their relationships with students, the Questionnaire on Teacher Interaction-Self-Efficacy (QTI-SE; Veldman et al. 2017) was developed. The QTI-SE is based on QTI-24 and consists of eight items: four items measuring teachers’ self-efficacy on the Agency dimension (for example, “I’m capable of determining what students can and cannot say in class”) and four items on the Communion dimension (for example, “I’m capable of tolerating a lot from my students”). Veteran teachers completed the items of the QTI-SE on a 5-point Likert-type scale with 1 = “never” and 5 = “always”. Reliabilities in terms of Cronbach’s  $\alpha$  are 0.72 for self-efficacy on the agency dimension and 0.81 for self-efficacy on the communion dimension.

## 2.3 Analyses

In order to develop a typology of veteran teachers’ interpersonal relationships and job satisfaction, we conducted analyses in two stages. First, we performed cluster analysis with veteran teachers’ realized interpersonal aspirations, the accuracy of their self-perceptions of the teacher-student relationship, and their satisfaction with the nature of their work as input variables. With respect to teachers’ job satisfaction, we used the Nature of Work subscale of the ASI, because we were particularly interested in sources of job satisfaction concerning the intrinsic factors of teaching (Dinham and Scott 1998). Second, we used descriptive statistics,  $\chi^2$ -tests and univariate analyses of variance, and the remaining variables to further describe the typology that resulted from stage 1.

In the cluster analysis of stage 1, we decided to use the (squared) Euclidean distance as the similarity measure. Seven hierarchical clustering methods and one partitioning method (k-means) that are available in SPSS-version 24 were evaluated. In



order to ascertain the optimal cluster analysis method for our data, we used the Variance Ratio Criterion (VRC, see Calinski and Harabasz 1974). This criterion refers to the ratio of the 'within variance' (variance explained by the clusters) and 'between variance', corrected for the number of clusters and responses. So, VRC indicates the optimal number of clusters given the total variance, variance explained by the clusters, the number of clusters and the total responses. The solution with the highest VRC score was the four-cluster solution with K-means. Therefore, we decided to present a typology of four clusters of veteran teachers.

In stage 2, descriptive statistics for the four clusters were calculated and  $\chi^2$ -tests and univariate analyses of variance were performed to examine the relationships of these four clusters, and the other variables, namely interpersonal relationship (self-perception of the agency dimension (SAg), self-perception of the communion dimension (SCo), ideal perception of the agency dimension (IAg), ideal perception of the communion dimension (ICo), student perception of the agency dimension (StAg), and student perception of the communion dimension (StCo)). There were four other scales of job satisfaction (autonomy (AU), relationships with colleagues (RC), working conditions (WC) and support (SU)), self-efficacy on the agency dimension (SEAg), self-efficacy on the communion dimension (SECo), and teachers' background information (the number of hours they teach, their age and gender).

In order to further profile the four clusters, post hoc Scheffé tests were conducted to explore the differences between each pair of clusters for all dependent variables.

### 3 Results: a typology of veteran teachers

In Table 2, the mean scores, standard deviations, and number of teachers are presented for each of the four clusters of teachers. As cluster analyses optimize differences between clusters and scores on the input variables, the grouping into four

**Table 2** Means and standard deviations (between brackets) for Realized interpersonal aspiration, Accuracy of self-perception and Satisfaction with the nature of work, per teacher type

	Type 1: Positive over-estimators (N = 57)	Type 2: Positive under-estimators (N = 47)	Type 3: Negative under-estimators (N = 12)	Type 4: Negative realists (N = 16)	Total (N = 132)
<b>Realized aspiration</b>					
Agency	0.09 (0.30)	0.24 (0.32)	0.89 (0.41)	0.17 (0.27)	0.23 (0.38)
Communion	0.34 (0.40)	0.53 (0.41)	1.32 (0.57)	0.13 (0.36)	0.47 (0.51)
<b>Accuracy</b>					
Agency	0.34 (0.31)	-0.04 (0.34)	-0.46 (0.35)	0.09 (0.42)	0.10 (0.42)
Communion	0.56 (0.27)	-0.25 (0.31)	-0.62 (0.50)	0.14 (0.42)	0.11 (0.54)
Satisfaction with nature of work	4.52 (0.27)	4.46 (0.33)	3.09 (0.74)	3.34 (0.48)	4.23 (0.64)

clusters appeared to be significantly (with  $p < .001$ ) related to all five dependent variables. For realized interpersonal aspiration in agency and communion, 34% of the variance was explained by the clustering into four teacher types; for accuracy in agency, this was 35%; and for accuracy in communion, 63%. For Nature of Work the explained variance was 66%. This means that the latter two variables can be considered the most influential for the definition of the four types of veteran teachers.

To further describe the four teacher types, we examined the relationships of the typology with self-perceptions, ideal perceptions, and student perceptions in terms of Agency (Ag) and Communion (Co) and the four other aspects of job satisfaction (Management support, Autonomy, Relationships with colleagues, and Work conditions). We also examined the relationship with teachers' interpersonal self-efficacy. All the variables showed a significant relationship with the typology of veteran teachers. No significant relationships were found between the typology and the background information (number of hours teaching per week, age, and gender). In Table 3, we present for each teacher type the descriptive statistics on these other variables concerning interpersonal relationships, the other scales of the Job Satisfaction Index, and teachers' interpersonal self-efficacy. Below we present the four

**Table 3** Mean scores and standard deviations (between brackets) for self, ideal and student perception (Ag and Co), self-efficacy (Ag and Co) and other scales of Job Satisfaction (Management support, Autonomy, Relationships with colleagues, Work conditions), per teacher type

	Type 1: Positive over-estimators N=57	Type 2: Positive under-estimators N=47	Type 3: Negative under-estimators N=12	Type 4: Negative realists N=16	Total N=132
<b>Self perception</b>					
Agency	0.95 (0.39)	0.64 (0.39)	0.17 (0.53)	0.53 (0.47)	0.72 (0.48)
Communion	1.48 (0.34)	1.02 (0.38)	0.38 (0.49)	1.10 (0.38)	1.17 (0.49)
<b>Ideal perception</b>					
Agency	1.04 (0.29)	0.88 (0.37)	1.06 (0.35)	0.70 (0.42)	0.95 (0.36)
Communion	1.82 (0.30)	1.55 (0.37)	1.70 (0.35)	1.24 (0.37)	1.64 (0.39)
<b>Student perception</b>					
Agency	0.61 (0.34)	0.68 (0.26)	0.63 (0.31)	0.44 (0.26)	0.62 (0.31)
Communion	0.92 (0.45)	1.27 (0.33)	1.00 (0.64)	0.97 (0.41)	1.06 (0.45)
<b>Self-efficacy</b>					
Agency	4.17 (0.58)	4.04 (0.46)	3.73 (0.70)	3.80 (0.61)	4.04 (0.57)
Communion	4.40 (0.49)	4.52 (0.37)	3.96 (0.42)	4.16 (0.52)	4.24 (0.47)
<b>Job satisfaction</b>					
Management support	4.03 (0.61)	3.96 (0.54)	3.18 (0.78)	3.35 (0.90)	3.85 (0.70)
Autonomy	3.84 (0.67)	3.87 (0.54)	3.01 (0.59)	3.23 (0.54)	3.70 (0.67)
Relationships with colleagues	3.83 (0.63)	4.00 (0.55)	3.36 (0.89)	3.72 (0.43)	3.83 (0.63)
Work conditions	3.34 (0.89)	3.39 (0.94)	2.65 (0.56)	2.74 (0.83)	3.22 (0.91)

types of veteran teachers based on the cluster analysis and the relationships with the additional variables.

### 3.1 Type 1: Positive over-estimators (N = 57; 43% of all teachers)

The veteran teachers in this type were characterized by their relatively high satisfaction with the nature of their work (see Table 2) and relatively high scores on the other aspects of job satisfaction (see Table 3). Generally, these teachers perceived the teacher-student relationship more positively than their students did, in particular in terms of communion (Accuracy communion  $M=0.56$ ). This overestimation was mainly due to the relatively high scores for self-perceptions of the interpersonal relationship with students ( $M=0.95$  and  $1.48$  for agency and communion, respectively, see Table 3). Moreover, teachers in this type generally realized their interpersonal aspirations particularly in terms of agency (Realized aspiration agency  $M=0.09$ ), and less in terms of communion (Realized aspiration communion  $M=0.34$ ), mainly because of the relatively high mean score on self-perceptions. The scores on realized aspirations are similar to those of teachers from types 2 and 4, but different from teacher type 3 (post hoc Scheffé  $p < 0.05$ ). Finally, teachers in this type generally believed they were able to realize good relationships with their students, particularly on the communion dimension (Self-efficacy  $M=4.40$ ; see Table 3).

### 3.2 Type 2: Positive under-estimators (N = 47; 36% of all teachers)

Similar to the teachers from type 1, these veteran teachers were characterized by a rather high score on satisfaction with the nature of their work ( $M=4.46$ ; see Table 2), which was significantly different from the scores of the teachers from types 3 and 4 (Scheffé post hoc  $p < 0.05$ ). This high score was confirmed by the relatively high mean scores on the other four aspects of job satisfaction. Moreover, these teachers generally underestimated themselves: student perceptions were more positive than their self-perceptions, especially on the communion dimension (Accuracy communion  $M=-0.25$ ), albeit significantly less than for type 3 teachers (Scheffé post hoc difference  $p < 0.05$ ). This underestimation was mainly caused by relatively high mean scores on student perceptions (see Table 3). With respect to the teachers' realized interpersonal aspirations, we see in Table 2 mean scores for both agency ( $M=0.24$ ) and communion ( $M=0.53$ ) which did not significantly differ from the scores in types 1 and 4, but different from teacher type 3 (Scheffé post hoc  $p < 0.05$ ). Finally, these teachers also showed average mean scores on interpersonal self-efficacy (see Table 3).

### 3.3 Type 3: Negative under-estimators (N = 12; 9% of all teachers)

Veteran teachers from this type were characterized by a rather low mean score on satisfaction with the nature of their work ( $M=3.09$ ), significantly lower than that of teachers in types 1 and 2 (Scheffé post hoc  $p < 0.05$ ). The mean scores on the other four aspects of job satisfaction were also relatively low. Moreover, these teachers

generally perceived their relationships with students more negatively than their students did (Accuracy agency  $M = -0.46$  and Accuracy communion  $M = -0.62$ ). This was mainly due to their relatively low scores on self-perceptions of the interpersonal relationship (see Table 3). With respect to their realized interpersonal aspirations, teachers in this type generally believed that they did not realize their interpersonal aspirations. There were relatively large differences between ideal and self-perceptions (Realized aspiration agency  $M = 0.89$  and Realized aspiration communion  $M = 1.32$ ), mainly caused by the relatively low mean score on self-perceptions. In both accuracy of self-perceptions and realized interpersonal aspirations, this type of teachers showed significantly lower accuracy and realization than the three other types (all Scheffé post hoc statistics with  $p < 0.05$ ). Finally, the teachers in this cluster generally had the lowest interpersonal self-efficacy on both dimensions compared with the teachers in the other types (Self-efficacy agency  $M = 3.73$  and Self-efficacy communion  $M = 3.96$ ).

### 3.4 Type 4: Negative realists (N = 16; 12% of all teachers)

The veteran teachers of this type were characterized by a rather low score on satisfaction with the nature of their work ( $M = 3.34$ ), similar to that of the teachers of type 3. This low score was confirmed by the relatively low scores on the other four aspects of job satisfaction, especially on satisfaction with work conditions and autonomy (see Table 3). Moreover, the differences between self-perceptions and student perceptions were rather small for both dimensions (Accuracy agency  $M = 0.09$  and Accuracy communion  $M = 0.14$ ), showing relatively accurate self-perceptions. Scores were relatively low on both self-perceptions and student perceptions (see Table 3). With respect to their realized interpersonal aspirations, the differences between ideal and self-perceptions were rather small for both dimensions (Realized aspiration agency  $M = 0.17$  and Realized aspiration communion  $M = 0.13$ ); in general, they seemed to realize their interpersonal aspirations in the teacher-student relationship. This finding was similar to that for type 1 teachers, although type 4 teachers showed significantly lower scores on ideal perceptions (Scheffé post hoc  $p < 0.05$ ). Finally, these teachers generally had low interpersonal self-efficacy scores on agency ( $M = 3.80$ ), and moderate interpersonal self-efficacy scores on communion ( $M = 4.16$ ).

## 4 Discussion and conclusion

Previous research findings showed that relatively more veteran teachers experience burnout and that attrition rates rise sharply for later-career teachers. Low job satisfaction seems to be one of the main causes, and teachers' relationships with their students appear to be related to job satisfaction in both positive and negative ways. In a study with 12 veteran secondary school teachers, Veldman et al. (2016) found that veteran teachers' job satisfaction appeared to be positively related to the extent to which these teachers realized their aspirations in their relationships with their

students. Moreover, it was clear that their perceptions of their relationships with students did not always coincide with their students' perceptions of those relationships. In this study, we developed a typology of veteran teachers based on indicators of their job satisfaction, their realized interpersonal aspirations, and the accuracy of their own perceptions of their relationships with their students. Four types of veteran teachers were distinguished. These types are presented below.

#### 4.1 Positive over-estimators

In general, *positive over-estimators* perceive their relationships with their students more positively than their students. These veteran teachers have high interpersonal aspirations, especially on the communion aspect, which they do not realize. The high interpersonal aspirations emphasize the importance of the intrinsic rewards of teaching for these teachers, a source of job satisfaction according to Dinham and Scott (1998). In terms of Day et al. (2006), these veteran teachers, like the *positive under-estimators*, remain satisfied because of the rewards of, among other things, good teacher-student relationships.

Failure to realize their aspirations could have a negative influence on these teachers' job satisfaction. However, in general, these teachers feel able to realize good relationships with their students. This group of teachers is quite satisfied with all aspects of their job. They might practice what Authors call "wishful thinking" (Wubbels et al. 2006): they overestimate the quality of their performance, which may have the function of reducing cognitive dissonance (Festinger 1957). The level of over-estimation is particularly apparent in scores on the communion aspect of their relationship with students and combines with relative low student-perception scores of this aspect. This would mean that teachers from this type might come across difficulties with creating a safe and relaxed learning environment for their students.

#### 4.2 Positive under-estimators

*Positive under-estimators* generally have more negative perceptions of their relationships with their students than their students have. They have moderate interpersonal aspirations and self-perceptions, in both agency and communion, which means that they generally realize their interpersonal aspirations only to a limited extent. Not realizing some aspects of the intrinsic rewards of teaching (Dinham and Scott 1998) could have a negative influence on these teachers' job satisfaction. However, this group of teachers view their behavior more negatively than their students do and so they underestimate the quality of their performances. The combination of under-estimation and teachers' relatively high scores on self-efficacy might mean that these teachers do not fully utilize their potential to support the learning process of their students. They seem to be protecting themselves against potential disappointment resulting from confrontation with negative students' perceptions (Wubbels et al. 2006).

### 4.3 Negative under-estimators

In general, negative under-estimators have very low self-perceptions of their relationships with their students, resulting in under-estimation because of their average students' perceptions. These teachers also show high aspirations in their relationships with their students, which means that – owing to the low self-perceptions – these teachers generally do not realize their interpersonal aspirations. Not realizing these aspects of the intrinsic rewards of teaching (Dinham and Scott 1998) could have a negative influence on these teachers' job satisfaction. Moreover, these teachers experience low satisfaction on all aspects of their job. Similar to the *positive under-estimators*, these *negative under-estimators* might be protecting themselves against disappointment; yet they seem to be less successful in this, given their low job satisfaction. In terms of Day et al. (2006), these veteran teachers, like the *negative realists*, might be unsatisfied teachers who score high on extrinsic and school-based factors as causes for their dissatisfaction. The combination of blaming external sources for feelings of job satisfaction with low self-perceptions about the interpersonal relationship with their students might lead to a lack of efforts to support students' learning.

### 4.4 Negative realists

*Negative realists* generally have accurate perceptions of their relationships with their students: both self-perceptions and students' perceptions are quite negative. These teachers realize their interpersonal aspirations, mainly because their aspirations in the teacher-student relationship are low. Nevertheless, they do not feel able to realize good relationships with their students, especially on the aspect of agency. Because of their low interpersonal aspirations, it seems that these aspects of the intrinsic rewards of teaching (Dinham and Scott 1998) are less important factors for these teachers' job satisfaction. Like the *negative under-estimators*, these teachers are also unsatisfied with all other aspects of their job. Negative realists might be former negative under-estimators who have adjusted their ideals based on what they can achieve. Yet this adjustment only seems to lead to less dissatisfaction with the job instead of more efforts to support students' learning.

### 4.5 Implications for guidance

The typology of veteran teachers based on their interpersonal relationships with students and their feelings of job satisfaction gives us a better understanding of the differences between veteran teachers and how to support them in remaining or becoming more satisfied in their jobs. For the unsatisfied teachers, and the *negative under-estimators* in particular, support from the school board through coaching and training could be beneficial. Coaching of the *negative under-estimators* could be focused on adjusting their interpersonal aspirations to a more realistic level, and adjusting their self-perceptions to the levels of the interpersonal perceptions of their students. In addition, training in interpersonal skills may help them to increase their

interpersonal self-efficacy. The situation of the *negative realists* seems to be more severe; they have low interpersonal aspirations, they are close to realizing these aspirations, and their self-perceptions are as negative as the perceptions of their students. Coaching in their case could be focused on “the intrinsic rewards of teaching” (Dinham and Scott 1998): “why do you want to be a teacher, what is your motivation for this occupation, even at the end of your career?” More specifically, coaching could focus on adjusting the interpersonal aspirations in a positive way. If this coaching is successful, training may help these teachers to increase their interpersonal self-efficacy.

The two groups of satisfied teachers could also benefit from coaching and training, to prevent them from becoming dissatisfied. The *positive over-estimators* run the risk of becoming dissatisfied if their ‘wishful thinking’ mechanism fails. Coaching focused on adjusting their interpersonal aspirations to a more realistic level could help prevent this. Finally, the *positive under-estimators* could be supported through coaching focused on increasing their self-esteem by adjusting their interpersonal self-perceptions to the level of their students’ perceptions. Follow-up training could support them in increasing their interpersonal self-efficacy.

#### 4.6 Limitations and future research

The veteran teachers in this study participated voluntarily. More males (67% of the participants) than females participated in this study, whereas more females teach in the Dutch secondary schools (53% secondary female teachers in 2015; OECD 2016). Secondly, we might have missed information from veteran teachers who have severe problems in their teacher-student relationships and/or have low job satisfaction, because such teachers would perhaps be less motivated to participate. We also lacked information from veteran teachers who had already dropped out. As a next step, the typology of veteran teachers we have developed in the current study, should be validated in a broader spectrum of participants, including more female veteran teachers and also including these groups of (former) unsatisfied teachers. This suggestion for further research on the typology might also help to examine how substantial the types are with the small number of teachers (Negative under-estimators with 12 teachers and Negative realists with 16 teachers). These teacher types should be large enough to warrant strategic attention for, for example, support measures or other interventions.

Future research is also needed in the development and evaluation of coaching and training instruments aimed at veteran teachers and the various aspects of their relationships with students: interpersonal aspirations, self- and student perceptions, and interpersonal self-efficacy.

#### 4.7 Concluding remarks

A typology of veteran teachers’ job satisfaction has been developed and validated based on whether teachers realized their aspirations in the relationship with their students and how accurate their own perceptions of this relationship are. The resulting

four teacher types (*positive over-estimators*, *Positive under-estimators*, *Negative under-estimators* and *Negative realists*) might help to support veteran teachers to become or stay satisfied with their teaching profession, which consequently will increase retention rates, contribute to lowering teacher shortages that appear in many countries and help to recognize the qualities of more experienced teachers.

## Compliance with ethical standards

**Conflict of interest** The authors have no conflicts of interest to declare.

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**Wilfried Admiraal** is full professor educational sciences and director of Leiden University Graduate School of Teaching. He graduated in social psychology. His research interest combines the areas of teaching, technology and social psychology in secondary and higher education.

**Ietje Veldman** is former dean of the Faculty of Education of Amsterdam University of Applied Sciences. Her research interests involve teacher–student relationships, especially for veteran teachers.

**Tim Mainhard** is associate professor at the Department of Education of Utrecht University. His research focusses on social dynamics in educational settings and their impact on student and teacher outcomes. Tim teaches in the Utrecht Graduate School of Teaching.

**Jan van Tartwijk** is a full professor of education at the Department of Education of Utrecht University. He chairs the university's Graduate School of Teaching. In his research, he focuses on, amongst other, social dynamics in the classroom and the development of teachers' expertise.

## Affiliations

Wilfried Admiraal<sup>1</sup>  · Ietje Veldman<sup>2</sup>  · Tim Mainhard<sup>3</sup>  · Jan van Tartwijk<sup>3</sup> 

Ietje Veldman  
i.m.j.veldman@hva.nl

Tim Mainhard  
m.t.mainhard@uu.nl

Jan van Tartwijk  
j.vantartwijk@uu.nl

- <sup>1</sup> ICLON Graduate School of Teaching, Leiden University, Kolffpad 1, 2333BN Leiden, The Netherlands
- <sup>2</sup> School of Education, Amsterdam University of Applied Sciences, Wibautstraat 2-4, 1091GM Amsterdam, The Netherlands
- <sup>3</sup> Faculty Social and Behaviour Sciences, University Utrecht, Heidelberglaan 1, 3584CS Utrecht, The Netherlands