Chapter 3

3.
The teacher-class relationship[2]

Although the teacher-class relationship is a well-documented phenomenon, the attempts to identify its predictors are scarce. Research so far has mainly focused on in-service teachers, less is known about characteristics of student teachers in relation to the teacher-class relationship.

The purpose of the present chapter was to identify the predictors of the teacher-class relationship of student teachers in secondary education. It was hypothesized that friendliness and extraversion, self-efficacy in classroom management and in student engagement, and discipline strategies (sensitive, directive, aggressive) contribute to the teacher-class relationship in terms of control and affiliation.

A total of 120 student teachers engaged in teacher education programmes participated.

Personality traits and self-efficacy were assessed with teacher questionnaires; discipline strategies and the teacher-class relationship with student questionnaires.

Results revealed that the two personality traits and self-efficacy were not related to the teacher-class relationship in terms of affiliation or control. However, significant relations were found between all three forms of discipline strategies and the teacher-class relationship in terms of affiliation or control. Gender affected the relation between directive and aggressive strategies on the one hand, and affiliation on the other.

[2] This chapter has been published and submitted in adapted form as:
Jong, R.J. de, Tartwijk, J. van, Verloop, N., Veldman, I., & Wubbels, T. (2013). Persoonlijkheid, self-efficacy, disciplineringsstrategieën en de leerkracht-leerlingrelatie bij leerkrachten in opleiding. *Pedagogische Studiën, 90,* 21-39.
Jong, R.J. de., Mainhard, T., Tartwijk, J. van., Veldman, I., Verloop, N., Wubbels, T. *How pre-service teachers' personality traits, self-efficacy and discipline strategies contribute to the teacher-class relationship.*

The study described in this chapter provides new insights to the research fields of classroom management and interpersonal relationships in education. It contributes to our understanding of discipline strategies by fine tuning an existing instrument with which interesting connections to the teacher-class relationship were revealed. Specific gender-effects on this connection are discussed, just as implications for practice.

3.1 Introduction

Education is essentially a social process (Goodenow, 1991; Pianta, 2006), and a fundamental element of that process is the interpersonal relationship between teachers and their students (Pianta & Hamre, 2009). Starting from this premise, educational researchers have emphasised and actually demonstrated the importance of the teacher-class relationship for learning achievement and motivation of students (Cornelius-White, 2007; Davis, 2003; Pianta, 2006; Pianta & Hamre, 2009; Wubbels, Brekelmans, den Brok, & van Tartwijk, 2006). There are other benefits as well, such as for teachers' wellbeing. Spilt, Koomen and Thijs (2011) found that a negative teacher-class relationship has a negative impact on the wellbeing of the teacher. Research has repeatedly shown that beginning teachers list maintaining classroom discipline, and establishing and maintaining positive and constructive teacher-class relationships among their major concerns (Fuller & Bown, 1975; Ghaith & Shaaban, 1999; Liston, Whitcomb, & Borko, 2006, Veenman, 1984). As was stated in chapter 1, classroom discipline and the teacher-class relationship are both components of classroom climate.

Kounin (1970) identified several strategies that teachers use to elicit high levels of student work involvement and low levels of misbehaviour. Strategies such as "withitness" (communicating awareness of student behaviour), overlapping (doing more than one thing at once) and providing engaging lessons (Gump, 1982; Kounin, 1970) have to be learned in the process of becoming of a teacher. It might very well be that beginning teachers fail to apply these preventive strategies adequately. Student teachers are not fully skilled teachers yet, something the students in their traineeship classes are well aware of. As a result, it might be that sources of power such as legitimate and expert power (French & Raven, 1959) are not available to student teachers yet. Actually, according to French and Raven (1959) all sources of interpersonal power are based on the perception of person B (i.e., the student) that person A (the teacher) has the ability to mediate rewards or punishments for him or her. Raven, Schwarzwald and Koslowsky (1998) point out that the term 'interpersonal power sources' refers to the potential someone has to influence

others. In our study, the focus was not on potential interpersonal power but on student teachers' actual use of interpersonal control. Following interpersonal theorists (Leary, 1957; Kiesler, 1983; Tracey, 1994, 2004; Wiggins, 1991), besides control another dimension of interpersonal relations is investigated, namely affiliation.

Because it is unclear what characterises teachers who early in their careers are successful in building positive constructive relationships with their students, in this chapter we focus on factors contributing to teacher-class relationships involving student teachers. Some research has been done on the relations between teacher characteristics, such as personality traits and self-efficacy, and aspects of the teacher-class relationship (Mainhard, Brekelmans, Wubbels, & den Brok, 2008), but these studies were about in-service teachers, not student teachers as in our case. The *personality traits* friendliness and extraversion (Goldberg, 1990) affect how a person acts in a social context, and since education is in essence a social process, it is assumed that this would not be any different in the social context of the classroom. *Self-efficacy* is associated with offering students support and positive reinforcement (Gibson & Dembo, 1984) and with aspects of teacher behaviour such as enthusiasm, planning and organisation (Tschannen-Moran & Woolfolk Hoy, 2001).

In precious research it was found that teachers' coercive and supportive behaviours have a significant impact on the teacher-class relationship as perceived by students (Mainhard, Brekelmans, & Wubbels, 2011). Therefore, in this chapter also *discipline strategies* in relation to the teacher-class relationship are taken into account.

In the next part of this introduction the main concepts will be discussed in more detail and connected to the research questions.

3.2 Theoretical framework

THE TEACHER-CLASS RELATIONSHIP

The teacher-class relationship is described in terms of a circumplex model, originally developed by Leary (1957) and since then extensively adopted in several studies (Kiesler, 1983; Tracey, 1994, 2004; Wiggins, 1991). In the

Netherlands, Créton and Wubbels (1984) developed the model of interpersonal teacher behaviour that includes an *control* dimension (the extent to which the teacher determines what happens in the classroom, on a scale ranging from submissive to dominant) and an *affiliation* dimension (the emotional distance between teacher and students, scale ranging from hostile to warm). The teacher's interpersonal behaviour can occur in various combinations on the two dimensions, which is a great advantage of this model over French and Raven's (1959) typology of interpersonal power. Their typology mainly focuses on what interpersonal theorists call the control dimension as illustrated by the title of one of Raven's articles (Raven et al., 1998) about the power/interaction model of interpersonal control. The merit of the interpersonal model is that it takes both control and affiliation into account: students can perceive a teacher's behaviour as high on the control dimension (dominant), and high on affiliation (warm), but it is equally possible that students view the teacher's behaviour as high on control and low on affiliation, resulting in a perception of a corrective, strict teacher. The two dimensions are recognised as a valuable measure for the quality of the teacher-class relationship: the optimal teacher-class relationship is characterised by a combination of high levels of control and affiliation (Ertesvåg, 2011; Walker, 2009; Wentzel, 2002; Wubbels et al., 2006). Teacher control has been found to be positively related to students' cognitive learning outcomes, and affiliation to motivation (Brekelmans, 1989; Walker, 2009; Woolfolk Hoy & Weinstein, 2006). Although both teachers and students agree that ideally teachers display high levels of control and affiliation in the relationship with their students, in a large-scale longitudinal study Brekelmans, Wubbels and van Tartwijk (2005) found that only 24% of student teachers get to this point in their first years of teaching (Brekelmans et al., 2005). This is mainly caused by a lack of control on the teacher's part. According to Brekelmans et al. (2005) teachers' behaviour in terms of affiliation hardly changes in the first twenty years of their career, while, according to both teachers and students, teachers' behaviour in terms of control generally increases in the first three years of the teaching career.

PERSONALITY TRAITS

Worldwide, several studies using different methods, instruments and samples have consistently identified the five personality traits: extraversion, openness, friendliness, conscientiousness and emotional stability (Goldberg, 1990; Kokkinos, 2007). In our study the personality traits openness, conscientiousness and emotional stability will not be taken into account, because there is insufficient theoretical or empirical evidence of how they might influence interpersonal relationships in general, or teacher-class relationships in particular. However, the personality traits extraversion and friendliness do relate to social interaction. The important conceptual distinction between the two is that extraversion is mainly concerned with social impact, whereas friendliness concerns the motivation to create sustainable positive relationships with others (Jensen-Campbell & Graziano, 2001). In their empirical study Jensen-Campbell & Graziano (2001) found that friendliness is related to motives aimed at maintaining positive relationships with others. For instance, friendly people opted for conflict-resolution tactics such as negotiation, in which the interpersonal contact was not interrupted; this increased their chances of maintaining the relationship afterwards. Motives aimed at maintaining positive relationships with others may result in actual positive interpersonal behaviour towards others. At least, people in general think that friendly people function better in interpersonal relationships than less friendly people (Jensen-Campbell & Graziano, 2001).

Little is known about the relations between teachers' personality traits and their relationships with students, but studies on burnout among teachers have shown that it is particularly friendliness and extraversion that are associated with positive interpersonal contact with students (Cano-Garcia, Padilla-Munoz, & Carasco-Ortiz, 2005; Kokkinos, 2007).

TEACHER SELF-EFFICACY

As in all other professions, teachers' skills develop and improve over time. Fuller and Bown (1975) found that novices proceed through three stages: survival concerns, teaching situation concerns, and pupil concerns. Lidstone

and Hollingsworth (1992) conducted a longitudinal study of the first four years of teaching and found three stages of cognitive attention of the beginning teacher: management focused, subject/pedagogy focused, and student learning focused. In the process of becoming a teacher, self-efficacy is considered to be of importance, especially in the first 'survival' stage (Fuller & Bown, 1975) when student teachers have concerns about their "adequacy and survival as a teacher" (Fuller & Bown, 1975, p. 37) and their cognitive attention is drawn to management issues (Lidstone & Hollingsworth, 1992).

Self-efficacy is defined as "beliefs in one's capacity to organise and execute the courses of action required to produce given attainment" (Bandura, 1997, p.3), in this case beliefs about one's capacity and skills that are relevant within the educational context (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998). Tschannen-Moran and Hoy (2001) distinguished three major components of teachers' self-efficacy: self-efficacy in classroom management, instructional strategies and student engagement. According to Bandura (1977), one of the most important sources of self-efficacy are mastery experiences. Self-efficacy and effort have been found to be related (Tschannen-Moran et al., 1998): the higher a teacher's self-efficacy on for instance student engagement, the more effort he or she will put into engaging students. This is a reciprocal relationship: putting more effort into something increases the chances of mastery experiences, mastery experiences increase self-efficacy, leading to more effort, and so on in a circular process. In Western societies students have on average spent over 10,000 hours in direct contact with classroom teachers by the time they graduate from secondary school. This leads to what Lortie (1975) called 'apprenticeship of observation': beginning teachers' socialization into teaching started when they were students themselves. Thus, even though student teachers have not yet done much teaching themselves, because of this apprenticeship of observation they are very likely to have beliefs about their own capacity to carry out the courses of action that are required from a teacher. So even though we acknowledge the circular character of the process of self-efficacy and mastery experiences, regarding the self-efficacy of student teachers we assume that they do not enter the profession as blank canvases.

There are several studies that demonstrate the relation between teachers' self-efficacy and their behaviour. Self-efficacy is related to teachers' behaviour in terms of motivation, enthusiasm, planning, organisation and effort (Tschannen-Moran & Woolfolk Hoy, 2001), and teachers with higher self-efficacy are more willing to experiment with new methods in order to better serve their students' needs (Guskey, 1988; Ross & Bruce, 2001). Tschannen-Moran et al. (1998) and Woolfolk Hoy and Hoy (1990) found that the lower the self-efficacy, the more frequently punishment was used by both experienced and student teachers. This has also been shown by Morris-Rothschild and Brassard (2006), who found that high self-efficacy was positively related to cooperative interactions aimed at finding compromises. Teachers with higher self-efficacy offer their students more support and positive reinforcement than teachers with lower self-efficacy (Gibson & Dembo, 1984). According to the interpersonal teacher behaviour model, both support and reward are associated with a positive teacher-class relationship (Wubbels et al., 2006). To our knowledge there have been no studies in which the teacher-class relationship was explicitly investigated along with the separate components of self-efficacy.

DISCIPLINE STRATEGIES

Teachers' reactions to students' provocations can sometimes be inappropriate in the sense that they might harm students psychologically or educationally (Lewis & Riley, 2009). Lewis and Riley (2009) categorise teacher misbehaviour along three dimensions: legal versus illegal; conscious versus unconscious; and acts of commission or omission. We agree with Romi, Lewis, Roache and Riley (2011) that teachers' aggressive behaviour is a legal act of conscious commission that actually occurs in the classroom. Clunies-Ross, Little and Kienhuis (2008) found that even those teachers who report favouring positive reinforcement in fact were likely to use punishments and threats. In terms of social power in general, Raven et al. (1998) report two main categories of power sources: harsh and soft, comparable to Lewis' (2001) coercive and sensitive strategies. These behaviours have different effects on students. Jamieson and Thomas (1974), building upon French and Raven's (1959) typology of interpersonal power, found that teachers' use of coercive

power was negatively related to student satisfaction, learning, and teacher control on students' out-of-class behaviour and attitudes. Lewis (2001) and Lewis, Romi, Qui and Katz (2005) examined the relationship between coercive *(*punishment and aggressive actions) and sensitive (hints, discussion, involvement in decision making and reinforcing positive behaviour) discipline strategies on the one hand, and students' misbehaviour on the other. They found that students who were subjected to coercive discipline were more distracted from their work and showed less responsible behaviour in the classroom than students who were disciplined sensitively. Romi et al. (2011) investigated the impact of teachers' aggressive management techniques on students' attitudes to schoolwork. They found that aggressive discipline strategies were related to students' negativity towards the teacher, and to the extent students were distracted from their work. In recent work Roache and Lewis (2011) reported that in terms of impact on for instance students' wellbeing and motivation, punishment seemed to be ambivalent in its effects; aggression turned out to be a functionally negative set of strategies, whereas the sensitive strategies had positive effects (Roache & Lewis, 2011).

What about students' views on the way teachers enforce discipline? According to Woolfolk Hoy and Weinstein (2006) students appreciate clarity, structure and rules, provided that these are imposed in a reasonable manner. Teachers who fail to use humour once in a while, who punish too often or too severely, or who adopt a superior attitude to their students eventually lose the students' respect. Students respect teachers who do not use their authority to suppress, but to help them (Noblit, 1993, pp. 34, 35). Mainhard et al. (2011) have investigated the connection between the teacher-class relationship in terms of control and affiliation, and coercive versus supportive teacher behaviour. Both relationship and teacher behaviour were measured as student perceptions. They found that coercive teacher behaviour was associated with lower levels of teacher affiliation, whereas supportive teacher behaviour was associated with higher levels of affiliation. Unlike general theories on interpersonal power and their hypotheses (French & Raven, 1959; Schrodt, Witt, Myers, Turman, Barton, & Jernberg, 2008) Mainhard et al. (2011) did not find significant correlations between coercive teacher behaviour and the

teacher-class relationship in terms of control, nor between supportive teacher behaviour and teacher control.

3.3 Research questions

1. How are personality traits (i.e., friendliness and extraversion) related to the teacher-class relationship in terms of control and affiliation?
   Based on studies that have shown the relationship between teachers' friendliness and extraversion and positive interpersonal contact with students(Cano-Garcia, et al., 2005; Kokkinos, 2007), we expected friendliness to be important for the teacher-class relationship in terms of affiliation. The same expectation was expected of the relation between extraversion and affiliation, but since extraversion is related to social impact, more extravert student teachers may have higher scores on control as well.
2. How is self-efficacy (i.e., student engagement, classroom management and instructional strategies) related to the teacher-class relationship in terms of control and affiliation?
   It is expected that self-efficacy in classroom management will have a positive effect on control. For self-efficacy in student engagement it is expected that it will have a positive effect on affiliation. Since self-efficacy in instructional strategies is not particularly associated with the pedagogical side of teaching such as student engagement or classroom management, we did not expect to find relations between self-efficacy in instructional strategies and the teacher-class relationship.
3. How are discipline strategies (i.e., sensitive, punishment and aggressive) related to the teacher-class relationship in terms of control and affiliation?
   In line with Mainhard et al. (2011) we expected sensitive discipline strategies to have a positive effect on affiliation, whereas aggressive discipline strategies would have a negative effect. Because of the 'neutrality' of directive strategies (Roache & Lewis, 2011) no relation was expected with teacher affiliation. Mainhard et al. (2011) were unable to establish a significant relation between teacher control on the one hand and

sensitive and coercive behaviour on the other. However, French and Raven (1959) proposed that coercive behaviour would probably enhance interpersonal control. We therefore expected all three clusters of discipline strategies to have positive correlations with student teacher teacher control, since by applying one of these strategies the teacher exerts control in order to discipline students.

3.4 Method

PARTICIPANTS AND PROCEDURE

Participants were 120 student teachers (40.8% female), recruited from three graduate schools in the Netherlands. Ages ranged from 22 to 57 years (M = 30.4 years, SD = 8.3). Nearly 42% of the participants were going to teach social studies, 36% Dutch and foreign languages, 17% science and mathematics, and 5% the arts. All graduate teacher education programmes prepare students with appropriate master degrees in the subject they will teach for teaching at all levels in secondary education. The programme takes a year full-time and starts either in September or January. Of the participants, 48.3% started the programme in September and 51.7% in January. The response rate of the September group was 70%, and 66% for the January group. The majority of the participants (80.8%) had little or no experience with teaching in secondary education, 13.4% had one to three years' experience, and the remaining 5.8% had more than four years' experience. This last group was omitted from further analysis because in terms of experience they differed too much from the rest of the sample. All teacher education programmes included a traineeship starting immediately at the beginning of the programme. Per week, student teachers spent two to three days at a school, where they were engaged in observations, teaching and other assignments. Per student teacher teacher one class participated in the study (with on average 22.6 students per class; 2,506 students in total). Of these classes, 34% were the first two years of secondary education; the other 66% were higher-level classes. The majority (94%) were classes from the higher levels of secondary education; only 6% were classes in pre-vocational secondary education. Since all student teachers taught at least

two classes, they were asked to select a class for the student questionnaire that was their least favourite in terms of interaction. This was motivated by the finding that data on teacher-class interaction differentiated more between teachers when gathered in least favourite instead of favourite classes (de Jong, van Tartwijk, Verloop, Veldman, & Wubbels, 2012).

Student teachers filled in a questionnaire with background questions, questions about personality, and questions with regard to self-efficacy. The student and teacher questionnaires were administered after student teachers had independently taught that particular class for at least two months.

INSTRUMENTS

Discipline strategies. To measure discipline strategies we used a Dutch version of the questionnaire developed by Lewis (2001). Since some students might find it difficult to use a seven-point Likert response scale, the response scale was set to five points (‘never’ to ‘always’). Examples of items are: "Rewards individual students who behave properly" (Sensitive); "Imposes consequences on students who misbehave (e.g., move their seats, detention)" (Directive); and "Deliberately embarrasses students who misbehave." (Aggressive).

A factor analysis (Principal Component Analysis with Varimax rotation) on the 24 items produced three factors that explained 75% of the variance (see Table 3.1). As found by Roache and Lewis (2011), punishment did not belong in either the sensitive or the coercive discipline cluster. The factors sensitive, directive and aggressive discipline show great similarities with Lewis’s factors: all reward items belonged to sensitive discipline; all punishment items belonged to directive discipline; and all aggressive items belonged to the third, aggressive discipline, factor. Table 3.1 also depicts means, standard deviations and reliabilities (Cronbach’s alpha) for the three scales (in the bottom rows of table 3.1). Data were aggregated into one composite class score per dimension. The intraclass correlations (ICC) were .20 for sensitive discipline, .30 for directive, and .27 for aggressive discipline strategies.

Table 3.1. Discipline strategies: rotated component matrix with means, standard deviations and reliabilities for each component

	Component		
	1	2	3
Imposes consequences on students who misbehave (e.g., move their seats, detention).	.83		
Increases the level of consequence if students will not do as they are told (e.g., move seats, detention).	.87		
Increases the level of consequence if a misbehaving student argues.	.85		
Increases the level of consequence if a misbehaving student stops when told, but then does it again.	.89		
Lets students know that the way they are behaving is not how the class expects them to.	.80		
Discusses students' behaviour with them to allow them to figure out a better way to behave in the future.	.73		
Describes what students are doing wrong, and expects them to stop.	.77		
Reminds misbehaving students about the class rules.	.74		
Rewards individual students who behave properly.		.86	
Praises the class for good behaviour.		.80	
Praises individual students for good behaviour.		.83	
Rewards the class when students behave well.		.89	
Organizes the class to work out the rules for good behaviour.		.68	
Makes students leave the room until they decide to behave properly.			.65
Yells angrily at students who misbehave.			.66
Deliberately embarrasses students who misbehave.			.88
Keeps the class in because some students misbehave.			.72

Makes sarcastic comments to students who misbehave.			.84
Mean	2.85	2.72	1.75
(SD)	(.44)	(.40)	(.40)
Reliability (Cronbach's Alpha α)	.95	.90	.83

Note. Only items with loadings > .50 are represented

Component 1 = Directive; Component 2 = Sensitive; Component 3 = Aggressive discipline

Teacher-class relationship. The student perceptions of the teacher-class relationship were measured with the Questionnaire on Teacher Interaction (QTI, Créton & Wubbels, 1984) and reported in terms of control and affiliation. Examples of QTI items are "This teacher can take a joke" or "This teacher's standards are very high." Reliability and validity of the QTI have been shown in several studies (den Brok, Brekelmans, & Wubbels, 2006; Wubbels et al., 2006), and in a cross-national validity study both proved to be satisfactory (den Brok, Fischer, Brekelmans, Rickards, Wubbels, Levy, & Waldrip, 2003). For our study, a shortened version (50 items, 8 scales) was used. The items were answered on a five-point Likert scale *(*'never' to 'always'*)*. The reliability (Cronbach's α) of the dimensions at the student level were .87 (Control) and .94 (Affiliation). Means and SD's for control and affiliation at the student level were M = 0.7, SD = 0.55 (range = -2.09 to 1.44) and M = 0.59, SD = 0.70 (range = -2.33 to 2.26), respectively.[3] The two dimensions were correlated with r =.33 (p<.01) at the student level.

The class means for student teachers in this sample, represented in Table 3.2, were comparable to the class means of student teachers in a large-scale longitudinal study of Brekelmans et al. (2005), which indicates that our sample is sufficiently representative for the target population of student teachers.

[3] In scales based on circumplex models such as the QTI, each item represents two dimensions (Tracey, 1994); here they are called the control and affiliation dimensions. To reflect the position of an item within the circumplex model weights are applied to the items for each dimension separately (i.e., theoretical factor loadings; for a comprehensive discussion of the model used here see den Brok, Brekelmans, & Wubbels, 2006). As a result, theoretically possible scores of Control and Affiliation dimensions range between -2.6 to +2.6.

Table 3.2. Means and standard deviations for age, personality traits, discipline strategies, self-efficacy, and the teacher-class relationship

		September (N=56)	January (N=57)	Total (N=113)
		Mean (SD)	Mean (SD)	Mean (SD)
Age		28.18 (6.66)	31.79 (8.80)	30.00 (7.99)
Personality traits	Extraversion	4.82 (1.17)	4.80 (1.17)	4.81 (1.16)
	Friendliness	5.86 (0.53)	5.80 (0.51)	5.83 (0.52)
Discipline strategies	Sensitive	2.73 (0.41)	2.71 (0.40)	2.72 (0.40)
	Directive	2.85 (0.43)	2.84 (0.45)	2.85 (0.44)
	Aggressive	1.72 (0.40)	1.77 (0.41)	1.75 (0.40)
Self-efficacy	Student engagement	3.21 (0.53)	3.30 (0.50)	3.25 (0.51)
	Instructional strategies	3.50 (0.51)	3.43 (0.57)	3.47 (0.54)
	Classroom management	3.33 (0.52)	3.59 (0.62)	3.46 (0.59)*
Teacher-class relationship	Control	0.04 (0.42)	0.06 (0.38)	0.05 (0.40)
	Affiliation	0.67 (0.55)	0.51 (0.50)	0.59 (0.53)**

* sig. at $p < .05$; ** sig. at $p < .01$.

Teacher extraversion and friendliness. Teacher extraversion and friendliness were measured using the relevant items of a Dutch version of the *Big Five* questionnaire (six items per subscale; Branje, van Lieshout, & Gerris, 2007). Participants indicated on a seven-point Likert scale ('totally disagree' to 'totally agree') to what extent personality properties were applicable to them. Sample items are "Communicative" (Extraversion) and "Helpful" (Friendliness). Reliabilities were .89 for extraversion *(M* = 4.81, *SD* = 1.16) and .85 for friendliness *(M* = 5.83, *SD* = .52). The mean scores are comparable

to the scores Mainhard et al. (2008) found for their sample of Dutch teachers in secondary education.

Teacher self-efficacy. To measure self-efficacy the short version of the Teachers' Sense of Efficacy Scale (TSES, Tschannen-Moran & Woolfolk-Hoy, 2001) was translated using a forward-backward translation method. The questionnaire consists of twelve items with a five-point Likert scale (rated 'nothing' to 'a great deal'). The scale has three underlying subscales, each with four items: self-efficacy in classroom management (e.g., " How much can you do to control disruptive behaviour in the classroom?"); self-efficacy in student engagement (e.g., "How much can you do to motivate students who show low interest in schoolwork? "); and self-efficacy in instructional strategies (e.g., "To what extent can you craft good questions for your students?").A factor analysis (Principal Component Analysis with Varimax rotation) on the twelve items produced three factors that explained 56% of the variance, with about an equal distribution of variance per factor. The distribution of items largely corresponded to the original TSES (with loadings ranging from .62 to .83 and maximum cross-loadings of .30).

Two items from the student engagement scale produced rather high cross loadings with one of the two other factors: the item "How much can you do to motivate students who show little interest in school?" loaded .56 on the classroom management factor, and only .39 on the student engagement factor; the item "How much can you assist families in helping their children do well in school?" loaded .56 on the instructional strategies factor and .50 on the student engagement factor. The remaining two items (item 3 and item 4) showed loadings of .75 and .76 on the student engagement factor, and maximum cross loadings less than .30. We therefore decided to use the original classroom management factor (M = 3.46, SD = 0.59; Cronbach's alpha = .82) and the instructional strategies factor *(*M = 3.47, SD = 0.54; Cronbach's alpha = .63) in the further analysis. The mean of items 3 and 4 was calculated in order to tap student teachers' efficacy for student engagement *(*r = .47; M = 3.25, SD = 0.51).

3.5 Data analysis

Our participants were student teachers who started the teacher education programme in either September or January. We therefore checked for possible effects of the commencement of the traineeship. On average, student teachers in the January group were 3.6 years older than student teachers in the September group (t (113) = -2.49, p< .05). For self-efficacy in classroom management, too, a statistically significant difference was found between the two groups (t(113) = -2.49; p< .05; d = 0.46): the mean for the January group was 3.59, for the September group 3.32. Since classes in secondary education start in September, student teachers who start their traineeship in January (half way through the school year) stepped into a setting where teacher and class have already established a definite classroom climate. If we can assume that for their traineeships student teachers are placed in well-run classes, this will make them feel confident that they can handle this class as well. Since other context factors like class size or educational level were the same for both groups, this seems to be a reasonable explanation for the difference in mean scores.

Multilevel regression analyses were tested by means of MLwiN (Rasbash, Charlton, Browne, Healy, & Cameron,2005) using the Iterative Generalized Least Squares algorithm. In MLwiN multivariate models can be specified by including an additional level (Level 0) representing the different dependent variables (here control and affiliation) nested within individual students (Level 1; see Snijders & Bosker, 1999). Hence, control and affiliation can simultaneously be examined as two aspects of the teacher-class relationship. It is also possible to examine whether both measures are similarly affected by the independent variables. Student teachers were represented at Level 2. For fixed factors, model improvement was tested by means of a Wald-test (with p<.05). For random factors, model improvement was assessed by comparing the fit (deviance) of nested models. Differences between these statistics follow a Chi-square distribution with degrees of freedom determined by the difference in parameters (Snijders & Bosker, 1999). Prior to testing our hypotheses, we estimated the variance components of control and affiliation at each level by means of so-called intercept-only regression models (Snijders & Bosker, 1999).

3.6 Results

Table 3.2 summarises the means and standard deviations for age, personality traits, self-efficacy, discipline strategies and the teacher-class relationship for the September and January groups. The distribution of men and women, experience and subject was similar for both groups.

The results of the multivariate variance component model of control and affiliation are presented in Table 3.3 (see Model 1). The average control and affiliation scores of the student teachers in this sample were 0.07 and 0.59 respectively (see intercept, Model 1). The intraclass correlations (ICC) for control and affiliation were both about .50. This means that roughly half of the variance in teacher control and affiliation as perceived by students is due to the teacher. The correlation between control and affiliation at teacher level is estimated at .44 in this model; at student level the correlation is .24. As a next step 'start' (0=September, 1=January) and gender (0=male, 1=female) were entered. No significant effects were found for control, but both covariates were significantly associated with the students' perception of student teachers' affiliation. On average female student teachers were perceived to convey less affiliation in class than male student teachers (B = -.19, p<.01), and those student teachers who started in January were perceived to convey less affiliation in class than those who started in September (B = -0.16, p<0.01; see Table 3.3, Model 2).

As a third step, extraversion, friendliness, the three types of self-efficacy and the three discipline strategies were added (all predictors were grand mean centred; see Table 3.3, Model 3). Only discipline strategies proved to be significantly related to the teacher-class relationship. Sensitive and directive strategies contributed to student teacher teacher control (B = 0.24, p<.01, β = .11 (small effect) and B = 0.56, p<.01, β = .46 (medium sized effect), respectively), and aggressive strategies were negatively associated with control (B = -0.37, p<.01, β = .27). Using aggressive discipline strategies in class was also negatively related to perceived affiliation (B = -0.67, p<.01, β = .38); using sensitive strategies was related to higher perceived levels of affiliation (B = 0.73, p<.01, β = .43). In this model, besides discipline strategies, it was only the

effect of teacher gender that was still significantly related to affiliation (B = -0.16, p<.01): none of the other variables (e.g., start traineeship, self-efficacy) were related to the teacher-class relationship.

In order to test whether the effect of the three different discipline strategies on the teacher-class relationship was different for male and female student teachers, we added interactions between teacher gender and discipline strategies as a next step (see Table 3.3, Model 4). As may be expected from the results so far, none of these interactions were statistically significant for perceived teacher control. However, there were rather pronounced effects for the gender*directive and gender*aggressive interactions. Adding these interaction terms showed that the effect of using directive strategies was different for female student teachers and male teachers ($B_{gender*directive}$ = 0.48; p<.01, β = .31). A male student teacher teacher with a typical low directive discipline score (bottom 2.5%) has, according tothe predictions of this model, an affiliation score of .94 (having medium scores on all other variables in the model). For a male teacher with a typical high score (top 2,5%) on directive discipline, the prediction for affiliation is lower: .44. For female student teachers, this effect is reversed. The affiliation prediction for a female with a typical low score on directive discipline is .37, whereas the affiliation prediction for a female with a typical high score is .72.

In general, the use of aggressive strategies was detrimental to affiliation as perceived by students, and this negative effect was stronger for female than for male student teachers (B = -0.57; p<.01, β = .33).

Compared to Model 1 (the 'empty' model), the total of the added variables explained 45% of the variance in control scores between student teachers and 77% of the variance in affiliation.

In Model 5 we tested to what degree the effects found were generalizable over the various student teachers and classrooms (i.e., random slopes were investigated). Only the effect of aggressive discipline on control differed significantly between student teachers (RIGLS estimation, $\Delta\chi^2(3)=16.70$, p<.01). Although statistically significant, the random slope of the effect of aggressive discipline explained only marginal amounts of variance between student teachers.

Table 3.3. Multivariate multilevel models for teacher control and affiliation

	Model 1		Model 2	
	Control	Affiliation	Control	Affiliation
	B (SE)	B (SE)	B (SE)	B (SE)
	Fixed effects			
Intercept	0.07 (.04)	0.59 (.05)	0.06(.06)	0.79(.05)
Gender			-0.02 (.02)	-0.19 (.09)**
Start			0.03 (.08)	-0.16 (.09)**
Extraversion				
Friendliness				
SE student engagement				
SE instructional strategies				
SE classroom management				
Sensitive discipline				
Directive discipline				
Aggressive discipline				
Gender*Sensitive				
Gender*Directive				
Gender*Aggressive				
	Random effects			
Between-teacher effects				
Variance	0.15 (.02)	0.25 (.03)	0.15 (.02)	0.23 (.03)
Aggressive				
r infl*affiliation	.44**		.46**	
r agg*affiliation				
Between student effects				
Variance	0.15 (.01)	0.24 (.01)	0.15 (.01)	0.24 (.01)
Correlation infl*affiliation	.24**		.23**	
$\Delta\chi^2(2)$ (deviance)			-77.23	

* p< .05; ** p < .01.

Table 3.3. Multivariate multilevel models for teacher control and affiliation

	Model 3		Model 4	
	Control	Affiliation	Control	Affiliation
	B (SE)	B (SE)	B (SE)	B (SE)
	Fixed effects			
Intercept	0.05 (.06)	0.69 (.05)	0.05 (.06)	0.69 (.05)
Gender	-0.05 (.07)	-0.16 (.05)**	-0.06 (.06)	-0.15 (.05)**
Start	0.05 (.06)	-0.07 (.05)	0.06 (.06)	-0.08 (.05)
Extraversion	0.02 (.03)	-0.01 (.03)	0.03 (.03)	-0.01 (.02)
Friendliness	-0.08 (.07)	0.05 (.05)	-0.08 (.06)	0.04 (.05)
SE student engagement	-0.02 (.07)	0.07 (.06)	-0.05 (.06)	0.05 (.05)
SE instructional strategies	-0.05 (.06)	-0.02 (.06)	0.05 (.06)	-0.02 (.05)
SE classroom management	0.03 (.06)	-0.08 (.05)	0.01 (.06)	-0.07 (.05)
Sensitive discipline	0.24 (.09)**	0.73 (.08)**	0.34 (.14)**	0.85 (.11)**
Directive discipline	0.56 (.09)**	0.04 (.08)	0.58 (.15)**	-0.28 (.12)**
Aggressive discipline	-0.37 (.10)**	-0.67 (.09)**	-0.36 (.19)*	-0.25 (.015)*
Gender*Sensitive			-0.19 (.17)	-0.17 (.14)
Gender*Directive			-0.03 (.19)	0.48 (.16)**
Gender*Aggressive			-0.04 (.22)	-0.57 (.18)**
	Random effects			
Between-teacher effects				
Variance	.08 (.01)	.06 (.01)	0.8 (.01)	0.5 (.01)
Aggressive				
r infl*affiliation	.32**		.30**	
r agg*affiliation				
Between student effects				
Variance	.16 (.01)	.23 (.01)	.16 (.01)	.23 (.01)
Correlation infl*affiliation	.22**		.22**	
$\Delta\chi^2(2)$ (deviance)	-692.68		-3.94	

* p< .05; ** p < .01.

Table 3.3. Multivariate multilevel models for teacher control and affiliation

	Model 5	
	Control	Affiliation
	B (SE)	B (SE)
	Fixed effects	
Intercept	0.05 (.06)	0.69 (.05)
Gender	-0.06 (.07)	-0.15 (.05)**
Start	0.05 (.06)	-0.08 (.05)
Extraversion	0.04 (.03)	-0.01 (.02)
Friendliness	-0.04 (.06)	0.04 (.05)
SE student engagement	-0.01 (.06)	0.05 (.05)
SE instructional strategies	-0.04 (.06)	-0.02 (.05)
SE classroom management	0.01 (.06)	0.01 (.06)
Sensitive discipline	0.33 (.12)**	0.85 (.11)**
Directive discipline	0.48 (.13)**	-0.27 (.12)**
Aggressive discipline	-0.33 (.17)*	-0.26 (.015)*
Gender*Sensitive	-0.07 (.16)	-0.18 (.14)
Gender*Directive	0.07 (.16)	0.47 (.15)**
Gender*Aggressive	-0.02 (.20)	-0.57 (.18)**
	Random effects	
Between-teacher effects		
Variance	0.8 (.01)	0.5 (.01)
Aggressive	< 0.1	
r infl*affiliation	.30**	
r agg*affiliation		-.68 (n.s.)
Between student effects		
Variance	.16 (.01)	.23 (.01)
Correlation infl*affiliation	.22**	
$\Delta\chi^2(2)$ (deviance)	-16.7	

* p< .05; ** p < .01.

3.7 Discussion

In this chapter we report on the relations between personality traits, self-efficacy, discipline strategies, and the teacher-class relationship of student teachers working in secondary education in the Netherlands. With regard to the first research question on associations between friendliness, extraversion and the teacher-class relationship in terms of control and affiliation, none of the expected relationships were found. It might be that in the context of the classroom personality plays a different role than in a general social context as was found in the studies of Asendorpf and Wilpers (1998) and Jensen-Campbell and Graziano (2001). However, for the educational context Cano-Garcia et al. (2005) and Kokkinos (2007) report that extraversion and friendliness are related to more positive relationships with students, something that could not be confirmed in our study. This might be caused by the fact that we studied the relationship itself, whereas Cano-Garcia et al. (2005) and Kokkinos (2007) used derivatives of the relationship like appreciation of the relationship. Besides the difference in concepts, there is also a difference in samples: student teachers (our study) versus in-service teachers. It is possible that for in-service teachers personal and professional identities are more congruent, whereas for student teachers (since their professional identity is still developing) the link with their personality is less prominent. Note also that we asked the student teachers to select their least favourite class: Brekelmans (1989) found small but significant differences for in-service teachers between their best and their worst classes: in their best class teachers were perceived more emotionally close than in their worst. For beginning teachers, differences between how they are perceived by their students in different classes are even more prominent than for experienced teachers (Levy, Créton, & Wubbels, 1993). Taking this into account we should conclude that in the favourite classes more friendly or extravert student teachers may indeed be perceived as higher on affiliation. However, results still indicate that in least favourite classes friendliness and extraversion of the student teacher do not play a role in how students perceive the relationship with their teacher. This finding is probably good news to teacher training programmes. After all, given the relative stability

of personality traits, a direct connection with the teacher-class relationship would offer few opportunities for intervention.

With regard to the second research question: the hypothesised relations between self-efficacy in classroom management, self-efficacy in student engagement and the teacher-class relationship in terms of control and affiliation could not be confirmed. The only expectation that was confirmed was that self-efficacy in instructional strategies was not related to control or affiliation. It is difficult to find an explanation in the existing literature, because self-efficacy is usually measured as a whole, without the various subscales used in our study. An explanation might be that self-efficacy does not refer to actual competence but to the teacher's perception of it (Klassen, Tze, Betts & Gordon, 2011; Woolfolk Hoy & Spero, 2005), so that increasing experience may cause changes in the student teacher's perception of this competence. With self-efficacy still in flux, effects on the teacher-class relationship or teacher behaviour are less easy to find.

Finally, we found that the way (sensitive, directive, aggressive) in which student teachers disciplined their students had a significant effect on the teacher-class relationship as perceived by students. As predicted, sensitive discipline had a positive effect on both affiliation and control. Mainhard et al. (2011) also found the relationship between sensitive discipline and affiliation, but they could not substantiate the relation with control. It is however important to know that this particular form of discipline is associated with a high quality teacher-class relationship on both dimensions (Brekelmans et al., 2005; Ertesvåg, 2011; Walker, 2009; Wentzel, 2002; Woolfolk Hoy & Weinstein, 2006): according to students, teachers who use this strategy are in control and friendly as well. The fact that sensitive discipline strategies were also significantly related to control shows that these are not a disguised form of *laissez-faire*. By reinforcing positive behaviour and involving students in decision-making the teacher is proactively present, which was reflected in the level of control of the teacher.

Our hypothesis regarding the negative relation between aggressive discipline and affiliation was also confirmed: not surprisingly, students perceived the teacher as less warm when they were subjected to aggressive

discipline. In previous research negative effects of this specific discipline strategy on student motivation, attitudes and misbehaviour have also been found (Lewis et al., 2005; Romi et al., 2011). Mainhard et al. (2011) found the same effects for in-service teachers and reported that this kind of teacher behaviour not only immediately disrupted the relation between teacher and class, but also was related to less affiliation in class a week later. Student teachers who are not familiar with issues like this, might not know how to 'repair' the relationship, and besides, since they are in their traineeship they might not even have sufficient time to do so. Therefore, it seems even more important to teach student teachers about the different discipline strategies and the effects of these strategies on the relationship with their students.

Mainhard et al. (2011) could not confirm the hypothesis based on French and Raven (1959) and Schrodt et al. (2008), that aggressive behaviour would have a positive effect on control of the teacher. In our study actually the opposite effect was found: in the perception of the students, aggressive discipline from the teacher had negative effects on the teacher's level of control. To explain this result, the work of Romi et al. (2011) proves helpful. They found that when it comes to aggressive behaviour, students' beliefs about how justified the teacher's reaction was to student misbehaviour was only minimally related to the level of distraction and negativity towards the teacher (Romi et al., 2011). Apparently, this kind of behaviour causes students to feel negative about the teacher no matter how justified they thought the reaction was. As Romi et al. (2011) point out, aggressive teacher behaviour is seen as offensive and unacceptable even when students agree that it was necessary that the teacher enforced discipline. They also discuss that the impact of aggressive discipline strategies on students varies depending on country (i.e. Australia, China and Israel). This may be due to the fact that beliefs about teacher roles (Lortie, 1975; Pajares, 1992) are culturally determined. Hofstede and Hofstede (2005) defined four cultural dimensions, of which power distance is particularly important in this discussion. Low power distance in the educational context manifests itself in more equality between teachers and students, and more dialogue and discussion, whereas in cultures with high power distance the teacher is seen as an unchallenged authority who is the primary communicator.

Our study was conducted in the Netherlands, of which the culture is defined as having a relatively low power distance. It is possible that the negative effect of aggressive discipline on control and affiliation as perceived by students is even more prominent because of the surrounding cultural context that favours power equality.

Interestingly, the negative effect of aggressive discipline on the perceived level of affiliation was even stronger for female than for male teachers. Carli (1999) found that men generally have higher levels of expert and legitimate power, whereas women have higher levels referent power (for these sources of power see French and Raven, 1959). According to Carli (1999) these differences in power lead to differences in social control: women generally have more difficulty exerting control than males. We did not take sources of power into account, but our results did not show any differences in levels of control between male and female student teachers. Apparently it is not social control as such, but the control tactics (i.e., discipline strategies) that are gender sensitive. Barbuto, Fritz, Matkin and Marx (2007) report a number of studies in which participants were found to be more persuaded by direct and aggressive control strategies applied by men than by women, and that men received higher performance ratings as a result of these kinds of control tactics than women using the same control tactics. As far as we know, for the educational context this result cannot be explained by previous findings.

As expected, directive discipline strategies had a positive effect on the perceived level of control of the teacher. This effect was equally apparent for male and female student teachers. At first sight, it seemed that directive discipline was not related to affiliation. However, taken the gender-effect into account, the matter turned out to be more complicated: for male student teachers the use of directive discipline strategies had a detrimental effect on affiliation as perceived by their students, whereas for female teachers the use of directive discipline strategies had in fact a beneficial effect on the level of affiliation as perceived by their students. Here again, the ambiguity of the directive strategies comes into play. It might be that in the eyes of students female teachers have ‘nicer’ ways to make use of directive strategies than male teachers. Thus, according to students, when it comes to directive discipline it is

the tone that makes the music, and women perhaps hit a different, warmer tone than men.

The merit of this study is that it provides insight in what is beneficial to a positive teacher-class relationship. In order to conduct the current study, the Lewis (2001) discipline strategy questionnaire was, in accordance with Roache and Lewis (2011), analysed differently by defining three instead of two clusters. These three discipline clusters (sensitive – directive – aggressive) allowed a precise investigation of the connection with the teacher-class relationship and revealed interesting results. First of all, where in previous studies it turned out to be difficult to develop an instrument that relates well to both dimensions of the teacher-class relationship, with the discipline strategy questionnaire associations with affiliation as well as control were found. Next to that, it was found that to students it matters who disciplines directive or aggressive: men and women were judged differently. This raises questions about what other factors come into play here, such as student's gender, general appreciation of the teacher, or male/female stereotypes.

The new cluster of directive strategies proved to be very interesting, and results might even provide some answers as to why it is ambivalent in its effects on students (Roache & Lewis, 2011). The gender effect on the relation between directive discipline and affiliation might be one of the reasons why effects of directive discipline on students is undecided: it depends on who imposes the consequences. Having said this, it is worthwhile to look into the specific differences between male and female teachers in their way of using directive discipline. When it comes to maintaining a warm, close relationship with students, apparently female student teachers have found a better way or better timing to apply directive strategies. It would be interesting to learn more about what this way of using directive discipline entails.

To sum up, what according to students is crucial to the relationship is not whether but how the teacher imposes discipline. This is an important addition to the findings of Woolfolk Hoy and Weinstein (2006) and Noblit (1993), who demonstrated students' views on discipline, but not how these are connected to their view on the teacher-class relationship. We fully agree with Balli (2011) that it is important to teach student teachers how to accomplish the two

seemingly dichotomous goals in the classroom. Establishing structure through rules and procedures, and building a positive classroom environment are not mutually exclusive ends and must both be discussed in the same context.

LIMITATIONS

In this research possible mediating relationships, such as between personality, self-efficacy, discipline strategies and the teacher-class relationship were not explored. We followed the Baron and Kenny steps (1986) to indicate the appropriateness of testing models like this (for an implementation of the Baron and Kenny steps see for instance Stephan, Caudroit, Boiché & Sarrazin, 2010). In our case there were no models in which all the necessary direct effects could be established, so that a mediational analysis was not appropriate.

Degree of control and affiliation, and use of sensitive discipline strategies were not significantly different for the student teachers who started the teacher education programme in September than for those starting in January. However, student teachers who started in January had a higher self-efficacy in classroom management than their September counterparts. Those who started their traineeship in January encountered a situation in which the social system of the class had already been established. Assuming that student teachers are usually placed in well-run classrooms, this may have led them to have an increased sense of self-efficacy in classroom management. In this case, there were not any other significant differences between the two groups. However, in order to make sure context factors are standardized as much as possible, in future research commencement of the traineeship must be taken into consideration.

The participants were asked to select their least favourite class because in previous research, during the process of development of an instrument to capture teachers' interpersonal expectations (de Jong et al., 2012), it was found these expectations were more differentiated between teachers for least favourite than for favourite classes. However, selecting a particular class has a danger to get biased results. Brekelmans (1989) found small but significant differences for in-service teachers between their best and their worst classes: in their best class teachers were perceived as more emotionally close than in their worst

class. For beginning teachers, differences between profiles in different classes are even more prominent than for experienced teachers (Levy et al., 1993). In future research it might be interesting to take both a favourite and a least favourite class into account.

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