Cover Page

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Title: Student teachers' practical knowledge, discipline strategies, and the teacher-class relationship
Issue Date: 2013-04-11

Chapter 6

6.
General discussion and conclusion

> *"I felt very much I had to act then and there. Which I found very difficult to do, I did not really want to because I thought, why, we're having a good time together and why can't it stay like that without me having to play the bogeyman. Because I really felt that if I intervened and so on, they would hate me for that."*
>
> (Debora, a 24 year old student teacher)

Student teachers are not yet fully skilled teachers, and building and maintaining a positive classroom climate are amongst their major concerns (Fuller & Brown, 1975; Ghaith & Shaaban, 1999; Liston, Whitcomb, & Borko, 2006; Veenman, 1984). In this thesis, the teacher-class relationship and student teachers' discipline strategies are conceived as elements of the classroom climate. As is illustrated by the quote above, student teachers experience a tension between a good interpersonal relationship with students and the need to discipline (McLaughlin, 1991; Weinstein, 1998; Woolfolk Hoy & Weinstein, 2006). Therefore, in this thesis, we explored student teachers' characteristics, in particular their practical knowledge in relation to their discipline strategies and the teacher-class relationship. Besides that, the connection between the two components of classroom climate, namely the teacher-class relationship and discipline strategies, was investigated.

Teachers' practical knowledge is defined as all the knowledge at the disposal of the teacher and underlying his or her actions (Carter, 1990). In our case, we investigated components of teachers' practical knowledge that are relevant to the teacher-class relationship and discipline strategies (i.e., self-image, anticipated student responses, self-efficacy and pupil control orientation). The teacher-class relationship was conceptualised as student

perceptions of the teacher in terms of control (i.c., the degree to which the teacher is perceived as being in charge) and affiliation (i.c., the emotional distance between teacher and class); or in terms of interpersonal profiles (i.c., behavioural patterns of the teacher). Three main discipline strategies were distinguished: sensitive, directive and aggressive.

In the first section of this chapter we will summarise the main findings and conclusions that follow from the studies in this thesis. Then, these findings will be integrated and their implications for practice will be discussed. In the final section, we will discuss the strengths, limitations and future directions.

6.1 Summary of research findings and conclusions

The aim of this thesis was to gain more understanding of the classroom climate as it is established by student teachers. With the teacher-class relationship and discipline strategies as important contributors to the classroom climate, the general question of this thesis was how student teachers' characteristics, in particular their practical knowledge, are connected to discipline strategies and the teacher-class relationship. This general question was divided into four sub questions and discussed in the following chapters of this thesis:

Chapter 2. What do teachers' expectations of teacher-class interaction look like?

Chapter 3. How are student teachers' personality traits, self-efficacy and discipline strategies related to the teacher-class relationship?

Chapter 4. How are components of student teachers' practical knowledge related to their discipline strategies?

Chapter 5. Are student teachers' interpersonal profiles and the accuracy of their self-images at the end of the internship different from the beginning? If so, how are they different and how is the accuracy of self-images related to the quality of the teacher-class relationship?

In the study described in the **second chapter** of this thesis we applied relational schema theory to teachers' expectations on teacher-class interaction. These interpersonal expectations are regarded as specific components of teachers' practical knowledge about classroom climate.Lortie's (1975) 'apprenticeship of observation' refers to the fact that student teachers' socialization into teaching starts when they are students. It was hypothesised that through the process of socialization, experiences with recurring teacher-class interactions, such as classroom discussions or correcting disruptive student behaviour, have been internalised in relational schemas of both teachers and students (Locke, 2005). However, to this date teachers' internalised experiences with recurring teacher-class interactions are largely unexplored, certainly in terms of interpersonal expectations. That is why, in the first study, we tried to gain insight in teachers' interpersonal expectations. An instrument was developed to capture teachers' interpersonal expectations in the classroom. Interpersonal expectations were

operationalised as if-then expectations with a prescribed situation starting with "If I.." and an anticipated response of the students ("then they…"). Common interaction sequences follow the so called complementarity principle (Carson, 1969; Tracey, 2004): dominant behaviours invite submissive responses and vice versa, whereas friendly behaviour evokes friendly responses, and hostile behaviour calls for hostile reactions.

Teachers (N = 46) were asked to respond to so called vignettes in which a specific classroom situation with teacher behaviour was described. They were requested to respond by describing anticipated student responses. The general answer to the research question was that interpersonal expectations of teachers are mostly complementary and comparable to what was found in previous research with people in non-hierarchical relationships (Hill & Safran, 1994), with the exception that teachers expected more submissive student behaviour in response to hostile teacher behaviour. Earlier, researchers (Markey, Funder, & Ozer, 2003; Moskowitz, Ringo Ho, & Turcotte-Tremblay, 2007) found that complementarity can be strengthened or weakened, depending on the specific relationship (hierarchical or non-hierarchical) and the context in which partners are interacting with one another (work or non-work settings). The interpersonal expectations that we measured seemed to be generally applicable to teachers, in the sense that they did not differentiate very much between different levels of experience of teachers. The only significant difference between teachers was that female teachers expected friendlier student responses than male teachers.

In the **third chapter** the connection between student teachers' personality traits, self-efficacy, discipline strategies and the teacher-class relationship was investigated. Over 100 student teachers of three teacher education institutes responded to questionnaires, and students of one of their classes answered student questionnaires. Student teachers' friendliness and extraversion (Goldberg, 1990), and self-efficacy in classroom management, instructional strategies and student engagement (Tschannen-Moran & Hoy, 2001) were investigated with self-reports. Of each student teacher, students of one of their classes responded to questionnaires on the teacher-class relationship and discipline strategies (on average 22.6 students per class; 2,506 students in total).

To be able to look into the association between the teacher-class relationship and discipline strategies (Lewis, 2001), three clusters of discipline strategies were distinguished: sensitive (e.g., rewarding positive student behaviour), directive (e.g., punishing) and aggressive discipline strategies (e.g., yelling in anger, sarcasm). This three factor structure in discipline strategies is a result by itself, with which detailed questions could be answered. Multivariate multilevel regression analyses were conducted with students at level 1 and teachers at level 2.

Effects of friendliness, extraversion, and self-efficacy were all suppressed by the effects of discipline strategies on the teacher-class relationship. Just as Mainhard, Brekelmans and Wubbels (2011a) found for in-service teachers, sensitive discipline strategies proved to be positively related to the teacher-class relationship in terms of affiliation, and aggressive discipline strategies were negatively related to the teacher-class relationship in terms affiliation. Furthermore, it was found that sensitive strategies were positively related to the teacher-class relationship in terms of control, whereas aggressive strategies were negatively related to control. Directive discipline strategies had a positive relation with control, but the relation between directive discipline strategies and affiliation was effected by gender: it was negatively related for men, and positively for women. There was also a gender-effect of aggressive discipline on affiliation (more negative for women than for men).

Considering the importance of discipline strategies in connection to the teacher-class relationship, in **chapter four** it was investigated how self-images, anticipated student responses and pupil control orientation contributed separately to the three discipline strategies. Questionnaires of 104 student teachers and students of one of their classes were analysed with multiple stepwise regression analysis. We found that all student teachers' beliefs correlated significantly with at least one of the discipline strategies, with the exception of anticipated student responses in terms of affiliation. In other words, with regard to teachers' discipline strategies, anticipated student responses in terms of control, self-images in terms of control and affiliation and pupil control orientation were relevant, but anticipated student responses in terms of affiliation were not. Not surprisingly, pupil control orientation

explained variance on aggressive as well as sensitive discipline strategies. The more submissive student responses the teacher anticipates, the more he or she makes use of sensitive discipline strategies. For both sensitive and directive strategies the self-image of the student teacher was important, especially whether they believed they were perceived as being in control. The more student teachers believed to be perceived as hostile, the more use they made of aggressive discipline strategies.

Finally, in **chapter five** the interpersonal profiles and self-images of 35 student teachers were reported. The typology of interpersonal profiles developed by Brekelmans and colleagues (Brekelmans, 1989; Brekelmans, Levy, & Rodriguez, 1993), is a typology of the behavioural patterns of teachers as perceived by students. These profiles are named directive; authoritative; tolerant-authoritative; tolerant; uncertain-tolerant; uncertain-aggressive; repressive and drudging. Some profiles are considered more preferable than others, since they are positively related to student outcomes (Ertesvåg, 2011; Walker, 2009; Wentzel, 2002). These are profiles in which dominant and warm interpersonal teacher behaviour are combined (i.e., authoritative, directive and tolerant-authoritative).

Students of one class and student teachers themselves answered questionnaires at the beginning and end of the internship. It was found that 47% started with a preferable profile and 35% of student teachers had a preferable profile at the end of the internship. This is comparable to what Brekelmans, Wubbels, & van Tartwijk (2005) reported: in their sample 31% of student teachers had a preferable profile at the end of the internship. The level of accuracy is defined as the difference between self-images and student perception. In terms of accuracy of self-images, in the beginning of the internship, student teachers were likely to underestimate their level of control and affiliation, whereas at the end of the internship, the majority were overestimating themselves.

Interpersonal profiles of student teachers were related to accuracy of self-images: student teachers with preferable profiles at the end of the internship had more accurate self-images at the end of the internship (on both control as affiliation) compared to student teachers with less preferable profiles. Two

third of student teachers had a higher accuracy on control, affiliation, or on both dimensions at the end of the internship, as compared to their accuracy at the beginning of the internship. Improving the accuracy of self-images was less likely for student teachers who were overestimating themselves in the beginning of the internship.

6.2 General discussion of the main findings

The aim of this thesis was to gain more understanding of the classroom climate as it is established by student teachers. Since from both students' and teachers' perspective the teacher-class relationship and classroom discipline are fundamental for the experience of the classroom climate (Pianta, 2006) we investigated how the teacher-class relationship and classroom discipline (i.e., discipline strategies) are connected. Besides that, we wanted to explore student teachers' characteristics, in particular their practical knowledge, in connection to discipline strategies and the teacher-class relationship.

Taken the research findings together, the general picture is that of all concepts in connection to the teacher-class relationship, discipline strategies showed the strongest and most meaningful relation. Previous studies have investigated the connection between students' perceptions of coercive and supportive teacher behaviour and the teacher-class relationship, with a sample that consisted of in-service teachers (Mainhard, et al., 2011a). Mainhard et al. (2011a) could not find significant relations between coercive and/or supportive teacher behaviour and the teacher-class relationship in terms of control. This thesis adds to the body of knowledge concerning teacher behaviour and the teacher-class relationship of *student* teachers. A merit of this thesis is the distinction between sensitive, directive, and aggressive discipline strategies, and that it demonstrated the precise relation between these discipline strategies and the teacher-class relationship in terms of affiliation and also control. Nonetheless, based on this thesis we cannot draw any conclusions about the causality of the relations. For instance, it was found that aggressive discipline strategies were negatively related to the teacher-class relationship in terms of control and affiliation. It might be that student teachers who frequently use

aggressive discipline strategies are as a result perceived as less friendly and in control. On the other hand, it is equally possible that this is the other way around: if the teacher-class relationship is all ready sub optimal, this might cause the student teachers to make more use of aggressive discipline strategies.

The complexity and immediacy of classroom situations, in particular disorderly situations, call for immediate reactions and sometimes intuitive decisions which are based on teachers' implicit beliefs (Calderhead, 1987; Kaplan, 1992). In these particular situations the impact of teachers' practical knowledge on their use of discipline strategies might be substantial, although yet largely unknown. Several researchers have looked into teachers' beliefs about classroom discipline (Balli, 2011; Weinstein, 1998; Woolfolk Hoy & Weinstein, 2006), however without connecting it to actual teacher behaviour. Kaplan (1992) and Riley (2009) investigated how specific components of personal knowledge (i.e., teacher's own punishment histories and attachment history respectively), were related to punishment and teachers' aggressive behaviour. Besides punishment and aggressive behaviour, we know that teachers also employ other discipline strategies, namely sensitive and directive strategies. In that sense the finding that student teachers' use of these three discipline strategies was indeed related to their practical knowledge (i.e., self-images, anticipated student responses and pupil control orientation) is a new finding, adding to the body of knowledge on the reciprocity between teachers' practical knowledge and teacher behaviour (Verloop, van Driel, & Meijer, 2011).

As was found in this thesis, student teachers' practical knowledge was related to their discipline strategies (teacher behaviour), and discipline strategies were connected to the teacher-class relationship. The connection between practical knowledge and the teacher-class relationship was not strong enough to remain significant when also discipline strategies were taken into account. This might be because the connection between practical knowledge and the teacher-class relationship is mediated by teachers' behaviour, whereas the connection between teachers' behaviour (discipline strategies) and the teacher-class relationship is a direct relation.

We would like to pay extra attention to the interaction principle of complementarity since it is rather new in educational research. We found that teachers' interpersonal expectations of the teacher-class interaction were complementary. Also, student teachers' interpersonal expectations were related to their behaviour, as was illustrated by the finding that student teachers, who anticipated more dominant student responses, were less likely to use sensitive discipline strategies. The finding that teachers expected rather submissive student responses in hostile teacher behaviour vignettes might be an effect of the nature of the hierarchical teacher-class relationship. In non-hierarchical relationships the anticipated response in hostile situations is neutral in terms of control (Markey & Kurtz, 2006; Moskowitz, et al., 2007).

Student teachers' self-image seemed not only related to their discipline strategies, but it also appeared to be of relevance with respect to their interpersonal profiles at the beginning and end of the internship. In the beginning of the internship, student teachers were likely to underestimate their level of control and affiliation, whereas at the end of the internship, the majority was overestimating themselves. These two ways of not accurately estimating oneself (Wubbels, Brekelmans, den Brok, & van Tartwijk, 2006) apparently occur at different moments in the internship, and it may be that the specific timing of the inaccuracy has different effects on the learning process of the student teacher. We found that student teachers with too flattering self-images at the beginning of the internship, were unlikely to have preferable interpersonal profiles at the end of the year, and it was less likely that their self-images were more accurate at the end of the internship. This suggests that overestimating oneself in the beginning of the internship might hinder student teachers' development: unaware of their actual behaviour they might not acknowledge the need to change. For instance, student teachers who believe to have more control in the classroom than they have according to students might not see the necessity to change their behaviour.

In general, it was found that not so many student teachers have a preferable interpersonal profile at the end of their internship. As was already found for in-service teachers (Mainhard, Brekelmans, den Brok, & Wubbels, 2011b), student teachers alike should not be too optimistic about improving the

quality of the teacher-class relationship once they started the internship with a less preferable profile: it is appears to be extremely difficult to change from there to a better profile. Moreover we found that of student teachers who started with preferable profiles but ended with less preferable profiles, in all cases this was caused because their perceived levels of control declined.

6.3 Implications

Some implications of the findings of this thesis for teachers and teacher educators might be drawn: there is a straight connection between the teacher-class relationship and discipline strategies, and some strategies are plainly counterproductive.

Teachers should be aware that each of the discipline strategies has specific associations with the teacher-class relationship. This awareness could entail the following knowledge: aggressive discipline strategies are unmistakably negatively connected to the teacher-class relationship. At the same time, it is equally important that teachers know that punishment is for one a universal given in the classroom when misbehaviour occurs. Secondly, students do not necessarily feel that the relationship is undermined when the teacher imposes consequences like that. To the range of discipline strategies available to the teacher also belong the sensitive discipline strategies. Sensitive discipline strategies are not as much in the spotlight as aggressive discipline strategies, at least not when we look at the amount of scholarly articles dedicated explicitly to aggressive strategies (Lewis & Riley, 2009; Riley, et al., 2010; Romi, et al., 2011). The unequal distribution of attention seems to be unjustified, at least in terms of the connection to the teacher-class relationship. The positive correlation between sensitive discipline strategies and the teacher-class relationship is just as noteworthy as the negative connection between aggressive discipline strategies and the teacher-class relationship.

We would recommend teacher education institutes to teach student teachers how to use sensitive strategies as much as possible, directive discipline strategies when it is necessary and how to avoid aggressive discipline strategies. Since teaching is an isolated profession, typically taking place in the

presence of no other adults, we think feedback is an essential first step in the learning process of the student teacher (Joyce & Showers, 1983). Student questionnaires such as the discipline strategy questionnaire could very well be used as a way of providing feedback, so that student teachers obtain a correct view of how he or she is performing with students. To teach student teachers to use sensitive and directive strategies, they must be provided with feedback and sufficient time to practice with these strategies. It is one thing to know what would be the best approach, yet another thing to be aware of one's own performance with regard to that approach. The next step, the actual act of transferring new behaviours into effective classroom practice is fairly difficult, even for experienced teachers. According to Joyce and Showers (1983), what is needed to overcome this, is continuous practice, feedback and the companionship of coaches.

Based on our results and on previous research (Mainhard, et al., 2011b), we might say that student perceptions of the classroom climate appear to be rather stable, and as a result once a teacher started the school year in a particular way, it is difficult to change. Student teachers usually have not had much opportunity to practice, and as a result transferring new behaviours in effective classroom practice might be very difficult. Therefore, we recommend to provide ample time to practice at the teacher education institute with for instance role-plays. This will provide them with the necessary practice, feedback and companionship of coaches. At the institute the teacher educator serves as an important facilitator of the learning process of the student teacher. Fellow student teachers can be seen as peer coaches, who have been found to be very supportive in the learning process of teachers (Joyce & Showers, 1996). In the words of Mary, a 23 year old student teacher:

> *" What really helped me was the contact with fellow student teachers, that I noticed, when I was going through a rough time, that they experienced the same. At some point I thought "I work so hard and what am I doing it for anyway", and at those moments I appreciated it to receive feedback."*

At the teacher education institute, student teachers can practice with peers, and they do not have to be afraid to mess up a lesson, or impair the relationship with their students. This makes it easier to practice, especially with new behaviour.

The basic advice to student teachers would be to build a good teacher-class relationship in the beginning of their internship by showing leadership in class and being warm and friendly to students. Unfortunately, as we know (Brekelmans, et al., 2005) only 30% of the total group of student teachers get to this point, and since the ones who started off not so well with their students are very unlikely to improve (Mainhard, et al., 2011b), we would recommend teacher education programmes to let their student teachers practice as much as possible at the teacher education institute and change classes halfway the internship, especially once they started off on the wrong foot.

An interesting concept for teacher education programmes is complementarity: there is plentiful evidence that complementarity guides moment to moment interactions (Carson, 1969; Dryer & Horowitz, 1997; Markey, et al., 2003; Tracey, 2004), and this might be used in teacher education programmes to teach student teachers to opt for alternative interactions with their students. For instance, when students keep on complaining about a test that was too difficult (student behaviour that might be rated as low on control and low on affiliation), at some point the teacher might react annoyed, telling them to stop nagging (high control and low affiliation). This would be a complementary teacher response, but chances are that students on their behalf respond complementary as well… On the other hand, a teacher who approaches the students by saying, “I heard you are a bit displeased about the last test. We’ll do something about it this lesson, just take a look here.“ probably evokes a complementary reaction that is low control and somewhat cooperative. In this example the teacher responds not complementary to the student’s behaviour, and in doing so prevents that the interaction sequence turns into a negative spiral of hostile-hostile and high control-low control behaviour and responses. If student teachers could have enough time to practice with this interaction principle and the accompanying behaviours, they might be better able to stop unproductive interaction sequences with their students.

When it comes to classroom discipline, knowledge about which strategies are effective and which are not may add to beginning teachers' sense of preparedness when faced with discipline issues. Besides formal knowledge about discipline strategies and their differential effect on student and the teacher-class relationship, teacher educators could also help student teachers explore their knowledge and beliefs about teacher-class interaction and classroom discipline. Just like for instance Kaplan (1992) and Balli (2011), we too recommend that teacher education programmes provide plentiful opportunities for student teachers to learn about their beliefs. Also they should be helped to explore the relations between beliefs about teaching, pupil control orientation, student behaviour, self-as-a-teacher and their subsequent teaching practice. This way, student teachers may be able to make more informed choices about classroom discipline and in particular discipline strategies instead of, as Riley, et al. (2010) put it, 'working blind', without a coherent theory of classroom discipline. Insights of this thesis might be helpful to teacher education.

6.4 Strength, limitations and future directions

In this thesis we made use of a number of questionnaires to measure components of practical knowledge, discipline strategies and the teacher-class relationship. Some of these questionnaires had to be translated to the Dutch teaching context, such as the pupil control orientation and the discipline strategies questionnaire. In case of the interpersonal schema questionnaire more adjustments had to be made to make it suitable to the educational context. Some questionnaires were analysed slightly different than in previous research, such as the self-efficacy questionnaire where we explicitly aimed to investigate the three components of self-efficacy. An important merit of this thesis is the discipline strategies questionnaire where we distinguished three components. In terms of psychometric qualities, all questionnaires proved to be reliable, and in terms of construct validity they were also valid. Further analyses might be conducted to improve the quality of the questionnaires. For instance, the newly developed should be tested with larger and different samples. The subscale of

self-efficacy in student engagement was not as good as the other two subscales (self-efficacy in classroom management and in instructional strategies). This was due to the fact that some of the items that originally belonged to the subscale of self-efficacy now had high cross loadings and were therefore excluded. Ideally, the self-efficacy in student engagement scale consists of just as many items as the other two sub scales. For that reason, in future research, it might be attempted to develop new and suitable items for this subscale.

Another suggestion for future research is related to the cultural context of the respondents. In the present study, components of practical knowledge of Dutch student teachers were investigated. Some of these components of practical knowledge were operationalised in terms of control or affiliation,both strongly related to the cultural dimensions of immediacy, collectivism and power distance (van Oord & den Brok, 2004; Hofstede & Hofstede, 2005). These dimensions influence teachers' perceptions, for instance through values and norms, and as a result teachers' practical knowledge is likely to be different across cultures. Future research should compare the differences in practical knowledge between teachers in several cultural settings.

The development of a questionnaire to capture teachers' interpersonal expectations was a more difficult enterprise than we anticipated. The open-ended version (chapter 2) did not differentiate very much between teachers. An issue with the instrument was that participants could not identify themselves with the teacher behaviour described in the submissive vignettes. We tried to solve this in the version with fixed answer categories (chapter 4). However, still a relatively small number of questions were related to submissive teacher situations. Moreover, relations with outcome variables were rather modest. Maybe, for the sake of larger sample sizes, the instrument was made too general, ignoring the essentials of the teacher in his or her classroom. Researchers in social cognition usually study thought processes like interpersonal expectations in laboratory settings or they use fMRI-scanning (Moskowitz, 2005). These are suitable methods to study interpersonal expectations in a general context. However, we strongly doubt that the complexity of teachers' thought processes in a classroom with twenty to thirty students can be captured with fMRI-scanning or laboratory sessions. The issue

of ecological validity imposes specific challenges to educational research. As it concerns future research in teachers' interpersonal expectations, especially in relation to their behaviour, we think it is best to opt for a qualitative approach, with for instance video vignettes, narratives and interviews (e.g., Verloop, 1989; Yinger, 1986). For instance, to gather data about teachers' predictions of student reactions, teachers can be asked to predict students' reactions to teacher behaviour visible on video-vignettes. Or, to be able to compare interpersonal teacher behaviour with the relational schemas that are guiding these behaviours, data might be gathered by videotaping lessons and conducting a post lesson stimulated recall interview with the teacher immediately or close after the lesson. Claessens, van Tartwijk, Verloop and den Brok (2010) actually made a start with this more qualitative approach to capture relational schemas in relation to teachers' behaviour.

Another issue is that student perceptions of the teacher-class relationship and teachers' discipline strategies were aggregated at the class level. Whether individual or collective student perceptions are employed in research actually depends on the research questions. Individual students' interpersonal perceptions of a teacher may be more indicative for the personal ideas of this student and the specific relationship of this student with the teacher (cf. Kenny, 2004). For that reason, in studies where the research interest is about obtaining a detailed picture of interpersonal processes in the classroom, individual student perceptions might better be used. Conversely, as an indicator of the teacher as a person and his or her behaviour towards the students as a group, the collective or consensual part of students' interpersonal perceptions might be more appropriate. Some researchers (den Brok, Brekelmans, & Wubbels, 2006; Lüdtke, Robitzsch, Trautwein, & Kunter, 2009) point out that it might even be better to use classroom aggregated scores in the study of classroom environments, as we did. It follows that the selection of participating classes is of crucial importance. Here, only student teachers' least favourite classes were selected, but this holds the danger of 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, Créton, & Wubbels, 1993). So, in future research it might be advisable to take both a favourite and a least favourite class into account.

Based on the results that were obtained in this thesis, we cannot draw conclusions on the causality of the relations. For example, it remains unclear whether more accurate self-images influence more preferable teacher behaviour, or that more preferable teacher behaviour has a positive effect on teachers' self-images. The same applies to the relations between discipline strategies and the teacher-class relationship: based on this study we know that they are connected, and whether it concerns positive or negative relations. But it leaves scholars in the field of education and classroom management the challenge to find out in future research what the direction of these relations are.

Meanwhile, the challenge for teacher educators is to develop routines to stimulate teacher and student teacher to reflect on their practical knowledge, and to teach them to avoid unproductive interactions in order to be able to create a positive classroom climate in their classrooms. Some insights from the present study might be helpful for the development of that part of teacher education programmes that focuses on how to build and maintain a positive classroom climate.

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