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What's in a diagnosis: The effect of externalizing and internalizing students' behaviour on pre-service teachers' classroom management and interaction strategies

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Background. All over the word, classrooms are getting more and more diverse and teachers are required to effectively manage these classes even when students have special education needs (SEN).

Aims. The study aimed to investigate classroom management strategies and interpersonal teacher behaviour in relation to students internalizing and externalizing behaviour, whereby we varied the diagnosis of special educational needs.

Sample. Two hundred and fifty-four German pre-service teachers (143 female) with a mean age of 26.04 years participated in the study.

Method. Using an experimental between-subjects design, a fictitious student was described as exhibiting either internalizing or externalizing behaviour. Additionally, we varied whether the student was diagnosed as having SEN or not. The participants were asked to indicate which strategies they would apply and how they would interact with students.

Results. Results showed that teacher interaction in response to both students with internalizing and externalizing behaviour approached ideal interpersonal teacher behaviour (i.e. high level of cooperativeness with certain level of dominance), whereas pre-service teachers applied all classroom management strategies to minimize effects of student behaviour on learning time. Although pre-service teachers adapted their responses based on type of behaviour, they only made allowances for internalizing behaviour while their response to externalizing behaviour did not vary much as a function of a SEN diagnosis.

Conclusions. Together, these findings highlight the importance of providing pre-service teachers with the pedagogical knowledge concerning effective classroom management and flexible use of strategies in response to diverse student needs in inclusive classrooms.

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Education systems in many countries are striving to become more inclusive in order to reduce inequalities related to different student characteristics. The drive towards inclusion is facilitated by the ratification of the Convention on the Rights of Persons with Disabilities (UN-CRPD; United Nations, 2006), which stipulates that equal educational opportunities should be available to all students, regardless of their socio-economic status, gender, ethnicity, or special educational needs (SEN). As such, the UN-CRPD recognizes the right of all students to be included in general education systems and to receive the individual support they may require.

Teachers play a pivotal role in creating inclusive environments. Increased diversification of classroom compositions may however pose significant challenges for teachers. This is signified by reports that teachers express a need for more training to address the diverse needs of all students (de Boer, Pijl, & Minnaert, 2011), and a reluctance to include students with (SEN) in their mainstream classrooms (Blanton, Pugach, & Florian, 2011). To this extent, teachers' competence has been identified as a key factor for the successful implementation of inclusive practice (Pit-ten Cate, Markova, Krischler, & Krolak-Schwerdt, 2018).

Although teachers' general and profession-specific competence may be the main predictors of student outcome, classroom management and teacher–student interactions are also considered vital for student learning (Jennings & Greenberg, 2009; Korpershoek, Harms, De Boer, van Kuijk, & Doolard, 2016). Jennings and Greenberg (2009) propose that teachers' social and emotional competence relates to effective classroom management and that the teachers' understanding of factors contributing to students' internalizing or externalizing behaviour may determine their management of such behaviours. This understanding is linked to teachers' beliefs and expectations (Bibou-Nakou, Kiosseoglou, & Stogiannidou, 2000), which may be related to stereotypes and can be activated by a diagnosis or label indicating SEN (Hornstra, Denessen, Bakker, van den Bergh, & Voeten, 2010).

Theoretical background

Classroom management

Student heterogeneity requires teachers to create learning environments in which all students can thrive (Polirstok, 2015). Classroom management involves all strategies conducted to establish order in the classroom (Doyle, 2006) and to maximize on-task time for all students (Ophardt & Thiel, 2013). In the literature, preventive and intervening strategies are discussed, which in combination contribute to effective classroom management (Little & Akin-Little, 2008). Learner-centred approaches (Elias & Schwab, 2006) involve that the teacher establishes together with her/his students a clear and short set of classroom rules (Evertson & Poole, 2008; Evertson & Weinstein, 2006). This set of rules is ideally established at the beginning of the school year, and it has proved valuable when the students know the consequences of rule breaking and when teachers consistently administer these consequences (Malone & Tietjens, 2000). Another preventive strategy is time management and involves the planning of materials and of transitions as well as handling all activities in the classroom in time (Doyle, 2006). Even though pre-service teachers are taught and advised to plan their lessons into the finest detail (Nguyen, 2016), many activities are unscripted and teachers are required to deviate from their plan and to improvise the lessons activities (Doyle, 2006). Such adaptive teaching shows a flexible handling not only of the lesson plan due to the students' needs

(Allen, Matthews, & Parsons, 2013) but also a flexible use of classroom management strategies (Neuenschwander, 2006). Classroom management also includes structuring lessons with care and providing enough space to repeat and summarize the subject matter (Brühwiler & Blatchford, 2011). In addition, classroom management involves the creation of positive teacher–student relationships (Jennings & Greenberg, 2009). Indeed, positive teacher–student relationships have been shown to impact both students' academic outcomes and subjective well-being (den Brok, Brekelmans, & Wubbels, 2004; Marzano & Marzano, 2003).

Interpersonal teacher behaviour

Interpersonal teacher behaviour determines not only how teachers behave in the classroom but also the nature of the relationship to their students (Brok, Tartwijk, Wubbels, & Veldman, 2010). Interpersonal teacher behaviour is described in the Model for Interpersonal Teacher Behaviour (MITB; Wubbels, Brekelmans, den Brok, & van Tartwijk, 2006). The MITB is based on the work conducted by Leary (1957), who differentiated human behaviours into two basic dimensions: influence and proximity. In the MITB, the dimension influence is represented by the axis dominance–submission, whereas the dimension proximity is reflected in the axis cooperation–opposition (Wubbels et al., 2006). Teachers exhibiting a high level of dominance show monitoring behaviours. The lessons have a clear structure, are achievement- and task-related, and the teacher gives clear instructions to the students (Wubbels et al., 2006). Cooperative teacher behaviour is supporting and empathic (Wubbels et al., 2006). The two dimensions of the MITB can result in an ideal teacher behaviour combination of authoritative and tolerant (Wubbels & Brekelmans, 2005). This behaviour is relatively high on proximity and to some degree influencing and related to students' achievement and motivation (den Brok et al., 2004; Goh & Fraser, 2000; Misbah, Gulikers, Maulana, & Mulder, 2015).

Problems in the student–teacher relationship may arise when students show challenging behaviours such as externalizing behaviours (Baker, Grant, & Morlock, 2008; Sanchez-Fowler, Banks, Anhalt, Der, & Kalis, 2008). Teachers show less proximity (Gunter, Shores, Jack, Rasmussen, & Flowers, 1995), exhibit lower rates of positive interpersonal behaviours (Sutherland, Wehby, & Copeland, 2000), rely less on positive techniques such as praise (Shores, Gunter, & Jack, 1993), and display more negative teacher behaviour (Jack et al., 1996) with increasing externalizing student behaviour. In contrast, teachers dedicate more supportive behavioural strategies for students with internalizing behavioural problems (Glock & Kleen, 2017). More specifically, in support of students with internalizing problem behaviours, teachers show more control (dominance) and more affiliation (proximity) behaviours as compared to their reactions to students with externalizing behavioural problems (Roorda, Koomen, Spilt, Thijs, & Oort, 2013). Hence, teachers' behaviours seem to change depending on the type of the exhibited behaviour.

Student behaviour and teachers' stereotypical beliefs and expectations

Connected with students' behaviours, teachers´ stereotypes—defined as generalized knowledge about the attributes and the behaviours that members of a particular social group share (Hamilton & Trolier, 1986)—might play a crucial role. Stereotypes develop via the experience with the members of a particular social group (Taylor & Crocker, 1981) or can be learned from others (Stangor & Ford, 1992). Pre-service teachers have several

opportunities to learn about different student types and, in turn, to develop stereotypical knowledge about students who have differential SEN, for example, based on experiences with classmates (Rentzsch, Schütz, & Schörder-Abé, 2011). Hence, just like other people (Krischler, Pit-ten Cate, & Krolak-Schwerdt, 2018; Rohmer & Louvet, 2009), pre-service teachers might develop stereotypes and expectations about students with SEN (Pit-ten Cate & Glock, 2018). A diagnosis 'student with SEN' can therefore activate pre-service teachers' stereotypical knowledge and stereotypical expectations (Hornstra et al., 2010). As the diagnosis SEN identifies students who will need differential treatment and additional resources (Buttner, Pijl, Bijstra, & Van den Bosch, 2015; Krischler et al., 2018), arising challenges may relate to differential achievement judgments and instructional plans that pre-service teachers associate with characteristics of inclusive classrooms (Holder & Kessels, 2019). Inclusive practice involves more complex classroom management (Polirstok, 2015), and teachers often feel ill-prepared to implement inclusive practices in regular classrooms (Blanton et al., 2011; Pit-ten Cate & Krischler, 2018). However, when students receive the diagnosis SEN, other children and adults are more tolerant in accepting undesirable behaviour (Mukuria & Bakken, 2010) and teachers tend to be more lenient (Cara, 2013) and often apply different standards (Georgiou, Christou, Stavrinides, & Panaoura, 2002) and classroom management strategies (Andreou & Rapti, 2010; Georgiou et al., 2002; Glock & Kleen, 2017).

Research question and hypotheses

Given the theoretical frameworks outlined above, it seems plausible to assume differences in classroom management and interpersonal teacher behaviour depending on students' behavioural profiles. More specifically, we expected stricter classroom management and more negative interpersonal teacher behaviour in response to externalizing as compared to internalizing student behaviour. Classroom management also depends on teachers' causal attribution for students' behavioural problems; thus, we expected a SEN diagnosis would positively alter classroom management as well as interpersonal behaviour.

Method

Participants and design

Two hundred and fifty-four German pre-service teachers participated in the study. Pre-service teachers (143 female) were recruited in their Bachelor (n = 48) and Master courses (n = 197). Nine participants did not provide any demographic information. The pre-service teachers were on average 26.05 years (SD = 3.74) old. Seventy-five prepared for teaching in primary school, the remaining prepared for teaching in secondary schools. The study had a 2 (SEN Diagnosis: yes vs. no) × 2 (behaviour: internalized vs. externalized) between-subjects design.

Materials

Student behaviour description

The student with externalizing behaviour was described as oppositional and hyperactive, very loud, and impulsive. The internalizing behaviour in the other student vignette was reflected by very shy and withdrawn behaviour. These descriptions were developed and successfully used in previous research (Glock & Kleen, 2017). To investigate the influence

of a SEN diagnosis on teachers' responses, in one version of the vignettes, we added a sentence informing the participants that the student was diagnosed as having SEN. This procedure resulted in four different student behaviour descriptions: (1) externalizing behaviour without SEN diagnosis; (2) externalizing behaviour with SEN diagnosis; (3) internalizing behaviour without SEN diagnosis; and (4) internalizing behaviour with SEN diagnosis.

Classroom management

To assess different dimensions of classroom management behaviour, we employed a questionnaire developed by Neuenschwander et al. (2003). Parts of this questionnaire have been shown to differentiate between teachers preferring different classroom management strategies (Neuenschwander, 2006) and might therefore be used to investigate differences in classroom management strategies between teachers in response to different student behaviours. We used four dimensions: Handling student misbehaviour (eight items: e.g. 'I consistently monitor whether the students adhere to the class rules'); Achievement-related classroom management (six items: e.g. 'I pay attention to begin and to stop the lessons in time'); Teachers' flexible and situation-specific handling of their classes (five items: e.g. 'It is easy for me to deviate from my plans if the situation requires this'); and Structuring (four items: e.g. 'During my lessons, I often work with summaries and structures'). Cronbach's alpha coefficients of internal consistency based on our data ranged from $\alpha = .66$–$.78$. All items were scored on a 5-point Likert scale ranging from 1 (*do not agree at all*) to 5 (*do totally agree*).

Interpersonal teacher behaviour

We employed the short version of the Questionnaire on Teacher Interaction (Fisher, Fraser, & Cresswell, 1995; Wubbels & Brekelmans, 2005). This questionnaire considers eight dimensions of teacher behaviour, each assessed by six items, scored on a 5-point Likert scale ranging from 1 (*do not agree at all*) to 5 (*do totally agree*). The eight dimensions include: Leadership (e.g. 'I can explain things clearly'); Understanding (e.g. 'I trust my students'); Friendly behaviour (e.g. 'I have a sense of humour'); Accommodating behaviour (e.g. 'Students can influence me'); Uncertainty (e.g. 'I am hesitant'); Dissatisfaction (e.g. 'I think that students cheat'); Reprimanding (e.g. 'I get angry quickly'); and Enforcing behaviours (e.g. 'I am strict'). Corresponding to the MITB (e.g. Wubbels et al., 2006), we calculated the means for the four different domains. Dominance was computed by averaging the scores for leadership and enforcing behaviours ($\alpha = .61$), cooperation reflects the average of scores for friendly and understanding behaviour ($\alpha = .79$), submission was calculated by averaging the scores for uncertain and accommodating behaviours ($\alpha = .76$), and opposition was computed using the scores for dissatisfied and reprimanding behaviours ($\alpha = .81$).

Demographic questionnaire

We compiled a questionnaire assessing pre-service teachers' age and gender. We also asked them to indicate whether they were studying towards a bachelor's or master's degree.

Procedure

We compiled four versions of the questionnaire varying the student behaviour descriptions as described above. Participants were randomly assigned to the different experimental conditions and presented with only one student description, approaching an equal distribution of participants over the four conditions. The pre-service teachers were recruited in the first session of their courses. After giving informed consent, each participant read the student description and completed the classroom management questionnaire and the German version of the QTI with the specific student in mind. Finally, the pre-service teachers completed the demographic questionnaire, were thanked and debriefed.

Data analyses

As outlined in the materials section, we calculated the means across the items for each dimension of the classroom management questionnaire and the QTI, to ensure the means reflect the Likert scale, which in turn facilitates interpretation of the results, especially as (sub)scales consist of different numbers of items. In order to analyse the data according to our hypotheses, we conducted) between subject MANOVAs with the factors SEN diagnosis (yes vs. no) and the kind of behaviour (externalizing vs. internalizing behaviours). For significant effects, we computed ANOVAs and simple effect tests to further investigate these findings.

Results

Classroom management

We submitted the means for the four different dimensions of classroom management to a 2 (SEN diagnosis: yes vs. no) × 2 (behaviour: externalizing vs. internalizing) between-subjects MANOVA. The MANOVA revealed a significant main effect of SEN diagnosis, $F(4, 247) = 3.60$, Wilks' $\Lambda = .93$, $p = .001$, $\eta_p^2 = .07$, indicating classroom management dimensions varied in relation to the absence or presence of a SEN diagnosis. The main effect of behaviour was significant, $F(4, 247) = 2.62$, Wilks' $\Lambda = .96$, $p = .04$, $\eta_p^2 = .04$, indicating pre-service teachers applied different classroom management strategies in response to the type of student behaviour. These findings were qualified by a significant interaction, $F(4, 247) = 7.14$, Wilks' $\Lambda = .90, p < .001, \eta_p^2 = .10$. We computed ANOVAs for the four different dimensions of the classroom management questionnaire (see Table 1 for the results).

For the dimension 'handling student misbehaviour', the main effect of SEN diagnosis indicated that the pre-service teachers reported less strict handling of student misbehaviour when they received information the student had been diagnosed having SEN than when they received no such information (see Table 2 for all *M*s and *SD*s).

The main effect of behaviour showed that pre-service teachers indicated a stricter handling of student misbehaviour for the externalizing than for the internalizing behaviour. The significant interaction reflected that pre-service teachers did not report differences in handling of externalizing student misbehaviour in relation to a SEN diagnosis, $t(126) = 1.15$, $p = .25$, $d = 0.21$, whereas they reported stricter handling of student internalizing misbehaviour for the student without a SEN diagnosis compared to the student with such diagnosis, $t(124) = 6.68, p < .001, d = 1.19$. For the student with a SEN diagnosis, the pre-service teachers reported to be stricter in handling student

Table 1. Results of the ANOVAs on the different dimensions of classroom management

Classroom management dimension	Effects	Results of the ANOVA
Handling student misbehaviour	SEN diagnosis	$F(1,250) = 11.04, p = .001, \eta_p^2 = .04$
	Behaviour	$F(1,250) = 9.73, p = .002, \eta_p^2 = .04$
	SEN diagnosis × Behaviour	$F(1,250) = 26.04, p < .001, \eta_p^2 = .09$
Achievement-related classroom management	SEN diagnosis	$F(1,250) = 7.49, p = .007, \eta_p^2 = .03$
	Behaviour	$F(1,250) = 2.44, p = .12, \eta_p^2 = .01$
	SEN diagnosis × Behaviour	$F(1,250) = 16.41, p < .001, \eta_p^2 = .06$
Flexibility in classroom management	SEN diagnosis	$F(1,250) = 12.41, p = .001, \eta_p^2 = .05$
	Behaviour	$F(1,250) = 4.47, p = .04, \eta_p^2 = .02$
	SEN diagnosis × Behaviour	$F(1,250) = 4.54, p = .001, \eta_p^2 = .04$
Structuring	SEN diagnosis	$F(1,250) = 2.11, p = .15, \eta_p^2 = .01$
	Behaviour	$F(1,250) = 1.65, p = .20, \eta_p^2 = .01$
	SEN diagnosis × Behaviour	$F(1,250) = 7.84, p = .006, \eta_p^2 = .03$

Table 2. Means and standard deviations in parentheses as a function of SEN label and behaviour on the four dimensions of classroom management

Classroom management dimension	Label	Externalizing behaviour *M* (*SD*)	Internalizing behaviour *M* (*SD*)	Total *M* (*SD*)
Handling student misbehaviour	Yes	3.68 (0.64)	3.04 (0.55)	3.36 (0.68)
	No	3.54 (0.71)	3.69 (0.54)	3.62 (0.63)
	Total	3.61 (0.68)	3.37 (0.64)	
Achievement-related management	Yes	3.39 (0.61)	2.94 (0.63)	3.17 (0.66)
	No	3.28 (0.69)	3.48 (0.62)	3.38 (0.66)
	Total	3.34 (0.65)	3.21 (0.68)	
Flexibility	Yes	3.68 (0.70)	3.23 (0.56)	3.46 (0.67)
	No	3.70 (0.77)	3.79 (0.57)	3.75 (0.67)
	Total	3.69 (0.73)	3.51 (0.63)	
Structuring	Yes	3.83 (0.79)	3.45 (0.71)	3.64 (0.77)
	No	3.70 (0.77)	3.84 (0.66)	3.77 (0.72)
	Total	3.76 (0.78)	3.64 (0.71)	

misbehaviour in response to externalizing compared to internalizing student behaviour, $t(126) = 5.98, p < .001, d = 1.07$. Such a difference was not found for the student without the SEN diagnosis, $t(124) = 1.37, p = .17, d = 0.24$.

The ANOVA conducted for the dimension 'achievement-related classroom management' yielded a significant main effect of SEN diagnosis, which showed that the pre-service teachers would endorse achievement-related classroom management more for students without a SEN diagnosis than for students with a SEN diagnosis. The significant interaction indicated that this difference based on SEN diagnosis only applied to students with internalizing behaviour $t(124) = 4.88, p < .001, d = 0.86$, and not for students with externalizing behaviour, $t(126) = 0.92, p = .36, d = 0.17$. When the pre-service teachers received information about a SEN diagnosis, they indicated higher achievement-related

classroom management for the externalizing than for the internalizing student, $t(126) = 4.10$, $p < .001$, $d = 0.73$. When the participants did not receive such information, no difference was found, $t(124) = 1.71$, $p = .09$, $d = 0.30$.

Regarding flexibility in classroom management, the main effect of SEN diagnosis showed that the pre-service teachers reported more flexible classroom management for the student without SEN diagnosis than for the student with SEN diagnosis. The main effect for behaviour indicated a more flexible classroom management for the student with externalizing than for the student with internalizing behaviour. The significant interaction showed that for the student with SEN diagnosis, pre-service teachers indicated more flexible classroom management in response to externalizing than internalizing behaviour, $t(126) = 3.93$, $p < .001$, $d = 0.71$, whereas for the student without SEN diagnosis, no difference in relation to the type of student behaviour was found, $t(124) = 0.78$, $p = .44$, $d = 0.13$. For the internalizing behaviour, participants reported higher flexibility in classroom management for the student without than for the student with SEN diagnosis, $t(124) = 5.52$, $p < .001$, $d = 0.99$. For the externalizing student behaviour, this difference was not found, $t(126) = 0.17$, $p = .86$, $d = 0.03$.

Regarding structuring, the ANOVA revealed a significant interaction. For the student with SEN diagnosis, participants reported higher structure in classroom management for students with externalizing than for students with internalizing behaviour, $t(126) = 2.83$, $p = .005$, $d = 0.51$. For the student without diagnosis, this difference between internalizing and externalizing behaviour was not found, $t(124) = 1.09$, $p = .28$, $d = 0.20$. Regarding the internalizing behaviour, the participants reported higher structuring for the student without diagnosis than for the student with diagnosis, $t(124) = 3.20$, $p = .002$, $d = 0.58$. For the externalizing behaviour, this difference was not found, $t(126) = 0.90$, $p = .37$, $d = 0.17$.

Interpersonal teacher behaviour

The means of the four dimensions of the QTI were submitted to a 2 (SEN diagnosis: yes vs. no) × 2 (behaviour: externalizing vs. internalizing) between-subjects MANOVA. The main effect of SEN diagnosis, $F(4, 247) = 26.84$, Wilks' $\Lambda = .70$, $p < .001$, $\eta_p^2 = .30$, and of behaviour, $F(4, 247) = 170.96$, Wilks' $\Lambda = .27$, $p < .001$, $\eta_p^2 = .73$, was significant, as was the interaction, $F(4, 247) = 27.32$, Wilks' $\Lambda = .69$, $p < .001$, $\eta_p^2 = .31$. We conducted separate ANOVAs for the different teacher interaction behaviours (see Table 3 for the results).

Regarding dominance, the significant main effect of SEN diagnosis showed that the pre-service teachers more strongly endorsed dominant behaviour when they thought the student had a SEN diagnosis compared to the student without a SEN diagnosis (see Table 4 for all *M*s and *SD*s).

The significant main effect of behaviour indicated more dominant behaviour in response to externalizing than internalizing behaviour. The interaction showed for both the student with and without SEN diagnosis that participants endorsed more dominant behaviour for the externalizing than for the internalizing student behaviour, $t(126) = 8.18$, $p < .001$, $d = 1.43$ and $t(124) = 13.11$, $p < .001$, $d = 2.36$, respectively. The pre-service teachers reported higher dominance for the student with than for the student without diagnosis regarding the student with internalizing behaviour, $t(124) = 6.52$, $p < .001$, $d = 1.13$, whereas no difference in dominance was found for the student with externalizing behaviour, $t(126) = 1.45$, $p = .15$, $d = 0.24$.

Table 3. Results of the ANOVAs on the different dimensions of teacher interaction

Teacher Interaction	Effects	Results of the ANOVA
Dominance	SEN diagnosis	$F(1, 250) = 34.58, p < .001, \eta_p^2 = .12$
	Behaviour	$F(1, 250) = 230.01, p < .001, \eta_p^2 = .48$
	SEN diagnosis × Behaviour	$F(1, 250) = 15.78, p < .001, \eta_p^2 = .06$
Cooperation	SEN diagnosis	$F(1, 250) = 15.83, p < .001, \eta_p^2 = .06$
	Behaviour	$F(1, 250) = 339.51, p < .001, \eta_p^2 = .58$
	SEN diagnosis × Behaviour	$F(1, 250) = 4.44, p = .04, \eta_p^2 = .02$
Submission	SEN diagnosis	$F(1, 250) = 46.48, p < .001, \eta_p^2 = .16$
	Behaviour	$F(1, 250) = 119.72, p < .001, \eta_p^2 = .32$
	SEN diagnosis × Behaviour	$F(1, 250) = 67.66, p < .001, \eta_p^2 = .22$
Opposition	SEN diagnosis	$F(1,250) = 26.44, p < .001, \eta_p^2 = .10$
	Behaviour	$F(1,250) = 56.94, p < .001, \eta_p^2 = .19$
	SEN diagnosis × Behaviour	$F(1,250) = 42.39, p < .001, \eta_p^2 = .14$

Table 4. Means and standard deviations in parentheses as a function of SEN label and behaviour on the four dimensions of teacher interaction

Teacher interaction dimension	Label	Externalizing behaviour *M* (*SD*)	Internalizing behaviour *M* (*SD*)	Total *M* (*SD*)
Dominance	Yes	3.43 (0.34)	2.86 (0.45)	3.15 (0.49)
	No	3.34 (0.42)	2.35 (0.42)	2.84 (0.65)
	Total	3.39 (0.38)	2.60 (0.50)	
Cooperation	Yes	4.29 (0.33)	3.33 (0.52)	3.82 (0.65)
	No	4.18 (0.49)	2.98 (0.51)	3.58 (0.79)
	Total	4.24 (0.42)	3.16 (0.54)	
Submission	Yes	2.67 (0.41)	2.51 (0.58)	2.59 (0.51)
	No	2.75 (0.47)	1.63 (0.38)	2.19 (0.71)
	Total	2.71 (0.44)	2.07 (0.66)	
Opposition	Yes	1.98 (0.48)	1.91 (0.54)	1.95 (0.51)
	No	2.07 (0.49)	1.12 (0.63)	1.60 (0.74)
	Total	2.03 (0.49)	1.52 (0.71)	

The ANOVA on cooperation yielded a significant main effect of SEN diagnosis, which indicated more cooperative behaviour for the student with than for the student without diagnosis. The main effect of behaviour showed higher cooperation with the student with externalizing than with internalizing behaviour. The significant interaction showed for both the student with and without SEN diagnosis, higher cooperation for the student with externalizing than with internalizing behaviour, $t(126) = 12.55, p < .001, d = 2.20$ and $t(124) = 13.48, p < .001, d = 2.40$, respectively. For internalizing student behaviour, participants indicated higher cooperation with the student with SEN diagnosis compared to the student without diagnosis, $t(124) = 3.90, p < .001, d = 0.68$, while this difference was not found for the externalizing student behaviour, $t(126) = 1.49, p = .14, d = 0.26$.

Regarding the ANOVA for submission, the significant main effect of SEN diagnosis indicated more submissive teacher behaviour for the student with diagnosis compared to the student without diagnosis. The significant main effect of behaviour showed more

submission for the student with externalizing than for the student with internalizing behaviour. The significant interaction showed for the student without SEN diagnosis more submissive behaviour for the student with externalizing than for the student with internalizing behaviour, $t(124) = 14.74$, $p < .001$, $d = 2.62$. For the student with diagnosis however, no difference in submission based on the type of student behaviour was found, $t(126) = 1.79$, $p = .08$, $d = 0.32$. Participants reported more submission for the student with SEN diagnosis than for the student without diagnosis, but only for the internalizing, $t(124) = 10.06$, $p < .001$, $d = 1.79$, and not for the externalizing behaviour, $t(126) = 1.06$, $p = .29$, $d = 0.18$.

Finally, the ANOVA for opposition yielded a significant main effect of SEN diagnosis showing more oppositional behaviour for the student with diagnosis compared to the student without diagnosis. The significant main effect of behaviour indicated more oppositional behaviour in response to the student with externalizing than the student with internalizing behaviour. The main effects were qualified by a significant interaction. The pre-service teachers reported more oppositional behaviour in response to the student with externalizing than with internalizing behaviour, when the student had no SEN diagnosis, $t(124) = 9.43$, $p < .001$, $d = 1.68$. In contrast, for students with a SEN diagnosis, oppositional ratings did not vary in relation to the type of student behaviour, $t(126) = 0.78$, $p = .44$, $d = 0.14$. For the student with internalizing behaviours, the pre-service teachers reported more oppositional behaviour for the student with diagnosis as compared to the student without diagnosis, $t(124) = 7.52$, $p < .001$, $d = 1.35$. This difference was not found for the student with externalizing behaviour, $t(126) = 1.08$, $p = .28$, $d = 0.19$.

Discussion

The results showed that pre-service teachers vary their classroom management strategies and interpersonal behaviours based on type of student behaviour and the presence of a SEN diagnosis. Variations between domains of teacher interaction indicate that pre-service teachers generally prefer authoritative interpersonal behaviour patterns characterized by cooperation and a certain level of dominance. This teacher interaction pattern has been found appropriate in relation to student outcome (Wubbels & Brekelmans, 2005). Regarding classroom management, pre-service teachers apply more control and flexibility in response to students with externalizing than to students with internalizing behaviour, most profound for students with a SEN diagnosis. This finding confirms previous research showing that teachers often react by stricter management in response to externalizing behaviour (Glock & Kleen, 2017; Polirstok, 2015; Thijs, Koomen, & van der Leij, 2008) whereas they may support students with internalizing behaviour (Glock & Kleen, 2017; Thijs et al., 2008). In general, strict classroom management may be of benefit to students with externalizing behaviour problems, as they might need clear behaviour expectations (Stormont, Lewis, & Beckner, 2005) and consistent monitoring. In line with the literature (Cara, 2013), pre-service teachers would follow relatively more lenient and lax classroom management strategies in response to internalizing student behaviour. Even though pre-service teachers still have some time until they enter the schools and are fully responsible for managing classes, their actual responses and strategies are nevertheless of interest. Their indicated behaviour may reflect how they were taught in their teaching programme. Courses concerning classroom management may have conferred certain strategies that can be applied to deal with certain student behaviours. Studying their

classroom management skills may therefore facilitate the evaluation and possible adaptation of teacher training programmes, which in turn may lead to a better preparation of future teachers. This is important, as research has indicated that classroom management is perceived as one of the main challenges of the teaching profession, both in pre-service teachers (Bromfield, 2006) and in-service teachers (Evertson & Weinstein, 2006). When entering the teaching profession, teachers may not feel efficacious in flexibly using a range of different classroom management strategies and rely on specific knowledge and skills that they acquired in their training and they have observed during their internships. Over time, they might gain more expertise in classroom management although each class has its own history with a teacher, which might determine the interaction during the rest of the school year (see Wubbels, 2011, for an overview).

Our results further indicate that teachers generally apply fewer management strategies for students with a SEN diagnosis, especially for students with internalizing behaviour problems. A similar pattern emerged for teacher interactions. Pre-service teachers indicated they would interact more with students with externalizing behaviour than students with internalizing behaviour as reflected by higher ratings in all domains. Teacher interaction also varied as a function of diagnosis, with more interactions in all domains for students with a SEN diagnosis. Again, this result was mainly due to variations in teacher interactions for students with internalizing behaviour. These results indicate that pre-service teachers mainly adapt their behaviour based on the diagnosis of internalizing behaviour problems, whereas management strategies and teacher interaction in response to students with externalizing behaviour were independent of the SEN diagnosis. These results could partly reflect the way in which the different types of behavioural problems manifest themselves in a classroom. Externalizing behaviour may be perceived as disrupting routines and hence may incur a teacher's reaction regardless of a diagnosis. In contrast, internalizing behaviour may go unnoticed (Polirstok, 2015) or could activate more control and affiliation from teachers (Roorda et al., 2013).

Often students who show internalizing behaviour may not be targeted with preventive classroom strategies and hence may not be supported adequately (Stormont, Herman, & Reinke, 2015). However, both internalizing and externalizing behaviours have been associated with poorer educational outcomes and reduced well-being among students (Breslau et al., 2009; Jamnik & DiLalla, 2019; Narusyte, Ropponen, Alexanderson, & Svedberg, 2017; Sanchez-Fowler et al., 2008). Therefore, it is important that teachers not only respond to disruptive student behaviour, but also help students with internalizing problems. Both students with internalizing and externalizing behaviour are supported by creating a positive classroom environment, in which there are clear rules, routines, and procedures (Conroy, Hendrickson, & Hester, 2004; Evertson & Weinstein, 2006). Positive reinforcement of successful adherence to the required routine or procedure and corrective feedback might also foster these students' self-esteem and motivate them to participate in the classroom activities (Conroy et al., 2004; Stormont et al., 2015). In addition, students with internalizing behaviour can be supported by teaching them adaptive coping skills allowing them to change their mood and behaviour (Stormont et al., 2015).

The general pattern of limited differentiation in management strategies and teacher interaction in relation to a diagnosis of externalizing behaviour problems may reflect a lack of knowledge on how to optimize learning situations for students with different needs (Kunter et al., 2013). Pre-service teachers primarily respond to the externalizing behaviour by exerting more control and by applying strategies to minimize disruptions. Differentiated knowledge on the effects of students characteristics and instructional

interactions may first develop with actual teaching experience, and allows experienced teachers to more adequately interpret teaching situations and to apply strategies accordingly (Sabers, Cushing, & Berliner, 1991). At the same time, this lack of differentiation in response to specific students' needs may results in less effective classroom management for students with diagnosed externalizing behaviour problems in inclusive classrooms taught by novice teachers.

Limitations

We need to consider some limitations. First, we asked pre-service teachers to participate in the study. Particularly regarding classroom management, there are profound differences between experienced and pre-service teachers. Pre-service teachers often feel the need to appear authoritarian (Wubbels et al., 2006), and they are less likely to consider mild classroom intervention strategies (Glock & Kleen, 2019). This might be the result of pre-service teachers' lacking beliefs in the effectiveness of positive classroom management strategies (Reupert & Woodcock, 2010). Hence, it would be interesting to replicate the study with in-service teachers in order to compare their reactions with those of pre-service teachers.

Second, we did not assess the self-efficacy beliefs in classroom management. Teachers' self-efficacy beliefs have been shown to relate to the successful inclusion of students with different SEN in regular classrooms (Brownell & Pajares, 1999) as well as to lower rates of student misbehaviour in class (Ashton & Webb, 1986). Therefore, future research may include self-efficacy as it may impact teachers' beliefs concerning their ability and hence willingness to flexibly respond to differentiating needs of students in diverse situations (Tschannen-Moran, Hoy, & Hoy, 1998).

We only described relatively abstract behaviours and not how the student behaves in particular classroom situations in which teachers usually would react. Although vignette studies have been shown to provide ecological valid results (Krolak-Schwerdt, Hörstermann, Glock, & Böhmer, 2018), responses of pre-service teachers may vary depending on actual student behaviour within a specific classroom setting. For example, in response to externalizing student behaviour, which is overt aggressive, teachers might strongly react. Research has shown that teachers do not ignore such behaviours and respond in an authoritarian way (Burger, Strohmeier, Spröber, Bauman, & Rigby, 2015). In contrast, teachers often do not perceive daydreaming or being shy as problem behaviour to which they should react (Glock, 2016). Hence, observing the responses of pre-service teachers to actual behaviour might be fruitful in future research. Moreover, future research may ask participants about the types of SEN they associated with the student behaviours. The way teachers attribute student behaviours can have profound consequences for their teaching behaviour and motivation (Reyna, 2008). Research has shown that when teachers believe that the behaviour is not under the student's control, they might react with pity, while beliefs that students are in control lead to anger (Reyna, 2000, 2008). Thus, studies may assess teachers´ attributions and knowledge about different disabilities, to detect more fine-grained differences in the responses to externalizing and internalizing student behaviours.

Conclusion

This study shows to what extent pre-service teachers may change their classroom management strategies and interpersonal behaviour in response to student behaviour and

the identification of SEN. The exertion of control and strategies aimed to limit disruptive behaviours demonstrates pre-service teachers are less willing to make allowances for externalizing behaviour and may be indicative of a lack of knowledge on how to adapt teaching strategies to accommodate students with different needs. Although teacher education programmes are increasingly focusing on inclusive practices, pre-service teachers may need time and actual teaching experience to develop differentiated knowledge, which would allow them to flexibly use different strategies in response to the specific demands in various contexts.

Conflict of interest

All authors declare no conflict of interest.

Author contributions

Sabine Glock, Ph.D. (Conceptualization; Data curation; Formal analysis; Methodology; Supervision; Writing – original draft) Ineke M. Pit-ten Cate (Conceptualization; Formal analysis; Writing – original draft; Writing – review & editing).

Data availability statement

Data available on request from the authors.

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