



Samen op weg naar meer inclusief onderwijs

Coöperatieve vormen van lerarenondersteuning als hefboom voor het verhogen van de doelmatigheidsbeleving van leraren.

Elke Struyf, Karine Verschueren, & Aster Van Mieghem



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Beleidsamenvatting



SONO

STEUNPUNT
ONDERWIJS ONDERZOEK

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Vlaamse context



- 2009 België ratificeerde het VN-Verdrag inzake de Rechten van Personen met een Handicap → engagement om inclusief onderwijs te realiseren
- 2014 Het M-decreet werd uitgerold in Vlaanderen → segregatie in het huidige leerplichtonderwijs tegengaan
- 2019 De Vlaamse Regering wil M-decreet vervangen door een nieuw begeleidingsdecreet

Dit onderzoek

Doelmatigheidsbeleving
= Perceptie over eigen
handelingsbekwaamheid

Hoog =

- ↑ werkvreugde leraren
- ↑ resultaten leerlingen



ONDERZOEKSVRAGEN:

- (1) Hoe is het gesteld met de doelmatigheidsbeleving van leraren tegenover leerlingen met specifieke onderwijsbehoeften (SOB)?
- (2) Beïnvloedt ondersteuning deze doelmatigheidsbeleving?



DATAVERZAMELING:

- survey bij 692 leraren (291 basis en 401 secundair) afgenomen in januari-februari 2018
- brede variëteit aan scholen wat betreft: schoolnetwerk, ligging, schoolgrootte
- schaal omtrent doelmatigheid van Zee & Koomen (2016) gebruikt

Antwoord op vraag 1

Leerlingen met specifieke onderwijsbehoeften in het gewoon onderwijs

Leraren hebben een lagere doelmatigheidsbeleving ten aanzien van:

- ♦ leerlingen met SOB tegenover leerlingen zonder SOB
- ♦ leerlingen met SOB met meerdere diagnoses tegenover één diagnose
- ♦ leerlingen met SOB zonder diagnose tegenover één diagnose
- ♦ leerlingen met socio-emotionele en/of gedragsstoornissen tegenover leerlingen met een leerstoornis

Ten aanzien van leerlingen met SOB:

- ♦ hebben leraren secundair onderwijs een hogere doelmatigheidsbeleving dan leraren lager onderwijs
- ♦ is er geen verschil in doelmatigheidsbeleving tussen mannelijke en vrouwelijke leraren

Antwoord op vraag 2

Gemakkelijk raadpleegbare ondersteuning
= laagdrempelig en snel voorhanden
(informatie en advies, materiaal, emotionele ondersteuning)

hebben geen effect op de doelmatigheidsbeleving

Coöperatieve ondersteuning
= doelgerichte samenwerking staat voorop

verhogen de doelmatigheidsbeleving

Observatie en feedback	De leraar observeert een collega of vraagt een klasobservatie met feedback.
Supervisie / coaching	De leraar wordt gesuperviseerd of gecoacht door iemand met expertise (bv. een ondersteuner).
Co-teaching / teamteaching	Leraren werken samen op vlak van lesvoorbereiding, -uitvoering, en/of -evaluatie met gedeelde verantwoordelijkheid en gelijke status
Ondersteuning van deze leerling op de klasvloer	Een ondersteuner verstrekt (individuele) ondersteuning op de klasvloer, aanvullend op de ondersteuning van de leraar.
Ondersteuning van deze leerling buiten de klas	Een ondersteuner verstrekt (individuele) ondersteuning buiten de klas, aanvullend op de ondersteuning van de leraar.

Dit onderzoek werd uitgevoerd in opdracht van het Departement Onderwijs en Vorming, door Universiteit Antwerpen en KU Leuven.

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1. Introduction

International policy developments (e.g., United Nations, 2006) put inclusive education (IE) on the political agendas of many countries. Also Belgium ratified the UN Convention on the Rights of Persons with Disabilities in 2009, which entails that an IE system should be realised at all levels (Article 24). Consequently, recent legislation (implemented in 2015-2016) in Flanders, the Dutch speaking region of Belgium, intends to diminish the current segregated school system in favour of IE (Flemish Ministry of Education and Training, 2014). In keeping with this recent reform of the legislation, IE is defined as the commitment to include more students with special educational needs (SEN) in mainstream education (Ainscow, Booth, & Dyson, 2006) by improving and adapting classroom practices to the individual needs of the learners (de Boer, Pijl, & Minnaert, 2011).

Although the transformation towards IE is a global trend, it must be realised in the local context and within the already established education system (Vansteenkiste, Swart, Van Avermaet, & Struyf, 2020). In Flanders, practitioners have found it challenging to implement this new legislation and have tended to show resistance to it (Children's Rights Commissioner, 2016). After all, implementing a more IE system requires teachers to adjust their practices and adopt new tasks that come with the job of instructing SEN students (Pijl & Frissen, 2009). These practical concerns have undermined the implementation of IE (Burke & Sutherland, 2004), and have led to a growing research interest in measuring teachers' self-efficacy (TSE) in teaching SEN students in mainstream education (Sharma, Loreman, & Forlin, 2012). TSE can be defined as teachers' perceptions of their own teaching competence (Bownell & Pajares, 1999). Research has indicated the importance of high TSE for teaching SEN students in mainstream classes (e.g., Brownell & Pajares, 1999). Highly self-efficacious teachers make greater teaching effort, which leads to better student performance and provides a successful experience for teachers, thus further improving their levels of self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). A positive experience with SEN students is crucial for successfully establishing IE (Van Mieghem, Verschueren, Petry, & Struyf, 2018). However, what has been missing from the research is how TSE in relation to teaching SEN students relates to sources of teacher support. By providing insight into the sources of support that can positively shape TSE in relation to teaching SEN students and investing in these sources, resistance to implementing IE system may be countered. Therefore, this study has been undertaken to examine TSE regarding teaching SEN students and how these beliefs relate to the sources of support available for them when teaching such students.

1.1. Teachers self-efficacy regarding inclusive education

TSE refers to teachers' beliefs about their capability to "organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). TSE is, according to Bandura's triadic reciprocal model (1997), derived from rich reciprocal interactions of teachers with their immediate environment over an extended period of time. These interactions provide four sources that shape their self-efficacy: enactive mastery experience, vicarious experience, social persuasion, and emotional and physiological indexes.

Different scales have been used to explore TSE, with the Teachers Sense of Efficacy Scale (TSES) from Tschannen-Moran and Woolfolk Hoy (2001) being one of the most widely used. TSE is seen as a multidimensional construct (Sharma, Shaukat, & Furlonger, 2015). Accordingly, the TSES consists of three underlying dimensions: instructional strategies, classroom management, and student engagement (Tschannen-Moran & Woolfolk Hoy, 2001). Recently, Zee and Koomen (2015) adapted this TSES to measure the self-efficacy of teachers at the individual student level rather than with students in general. For example, 'How well can you implement alternative strategies in your classroom?' was changed into 'How well can you let this student apply alternative problem solving strategies?'. This approach takes into account that teachers develop specific self-efficacy beliefs in relation to each individual student, including each individual SEN student they teach. Going beyond a general appraisal of teaching SEN students, this student-specific approach allows to gain more insight into how self-efficacy beliefs may vary depending on the SEN of the students and into the concrete supports and obstacles teachers experience in dealing with specific SEN students. Furthermore, a fourth dimension, 'emotional support' was added, based on the Teaching through Interactions framework (for an overview, see Hamre et al., 2013). Several different aspects, such as a 'positive climate', 'teacher sensitivity', and 'regard for student perspectives' are assessed within this dimension (Hamre et al., 2013).

A number of researchers have suggested that TSE in relation to SEN students might be influenced by a number of factors (e.g., Schwab, 2019). Two types of factors are distinguished (1) teacher-related variables, and (2) student-related variables.

1.1.1. Teacher-related variables influencing teacher self-efficacy

The following teacher-related variables have been considered as predictors of TSE in prior research: teacher gender, years of teaching experience and grade level, as well as more

inclusion-related variables, such as, experience with SEN students in special or mainstream education and specific training in favour of SEN students (Baker, 2005; Kuyini, Desai, & Sharma, 2018; Tait & Mundia, 2013; Tsakiridou & Polyzopoulou, 2014).

Regarding the general teacher-related variables, Tait and Mundia (2013) found that female pre-service teachers generally had higher levels of self-efficacy than male pre-service teachers. No significant differences in self-efficacy of pre-service male or female were found regarding implementing inclusive practices. On the other hand, research by Tsakiridou and Polyzopoulou (2014), showed that Greek male in-service teachers had higher levels of self-efficacy than female in-service teachers regarding inclusive practices. Researchers also found a nonlinear relationship between levels of self-efficacy in general and years of experience. Specifically it increased until mid-career and declined afterwards (Klassen & Chiu, 2010). Regarding grade level, Baker (2005) found that pre-service primary school teachers had higher self-efficacy levels related to teaching SEN students than pre-service secondary school teachers.

For the teacher variables directly related to IE, a study by Malinen et al. (2013) found that experience teaching SEN students was the strongest predictor of TSE. This finding is in keeping with Bandura's theory (1997), from which it has been repeatedly proven that experience of mastery is shown to be the strongest source of self-efficacy. Regarding training, Tsakiridou and Polyzopoulou (2014) found higher self-efficacy in those teachers who attended training relating to SEN student compared to those who did not.

1.1.2. Student-related variables influencing teacher self-efficacy

A recent study by Schwab (2019) showed that 76% of the variance in student-specific TSE was situated at the student level, indicating the importance of considering also student-level variables, in addition to teacher-level variables, as predictors of TSE.

Schwab (2019) found that teachers have lower levels of self-efficacy about teaching SEN students in comparison to teaching their typically developing students. Furthermore, Schwab (2019) found that TSE related to the students' disabilities, more specifically hyperactivity and attention deficits predicted lower levels of self-efficacy. Also literature on the attitudes of teachers towards students with SEN revealed that teachers hold more negative attitudes towards students with behavioural problems or learning disabilities, compared to students with physical and sensory impairments (de Boer et al., 2011).

1.2. Sources of support for teaching students with special educational needs

The availability of sources of support at class and school level has repeatedly been associated with more positive attitudes (e.g., Avramidis & Norwich, 2002). Avramidis and Norwich (2002) divide sources of support for SEN students into three categories: (1) physical support (e.g., teaching materials, IT equipment, adjusted physical environment), (2) human support (e.g., learning support assistants), and (3) school environment (e.g., class size, planning time). Chiner and Cardona (2012) confirm that teachers who have more human support and material resources, comparable to physical support, are more positive towards IE than those who have less support and fewer resources. Avramidis and Kalyva (2007) point out that “teachers may not hold ‘negative attitudes’; rather they may not see solutions to problems they feel are outside their competence or control” (p. 385). Therefore, sources of support seem to be crucial for TSE in relation to SEN students.

1.3. The relation between teacher self-efficacy and sources of support

A review of teacher perceptions regarding the inclusion of SEN students by Scruggs and Mastropieri (1996), concluded that many teachers have concerns about IE and believe that supports are necessary to succeed. In other studies (e.g., Kuyini, Desai, & Sharma, 2018), these sources of support are described as concerns (e.g., concerns from teachers about a lack of, resources, funding and training to teach SEN students). If these support sources are not available, then they become concerns for teachers when teaching SEN students. Recent studies (e.g., Ahsan, Sharma, & Deppeler, 2012) found a link between self-efficacy and concerns about teaching students with SEN. Using a measure of general efficacy toward inclusive practices, Ahsan et al. (2012) found that pre-service teachers with higher levels of self-efficacy showed lower levels of concerns towards IE. Considering these findings, it is interesting to discover which sources of support affect TSE in relation to SEN students.

1.4. This study

In this study the aim is to examine TSE in relation to teaching SEN students, and how it is associated with the sources of support. In keeping with this, the following research questions are addressed:

- (1) What are teachers’ perceptions of their self-efficacy in relation to teaching students with and without SEN, and how do teacher- and student-related variables contribute to predicting teachers’ sense of self-efficacy?
 - a. Are there differences in teachers perceptions of their self-efficacy regarding students with and without SEN?

- b. Do teacher-related variables (gender, years of teaching experience, grade level, experience in special education, experience as a care teacher or (internal) student counsellor, and training (an additional degree in care)) predict TSE?
 - c. Do student-related variables (none, one or multiple diagnoses, and type of disability) predict teachers' perceptions of self-efficacy?
- (2) Is there a relationship between the types of sources of support and TSE regarding teaching different SEN students?
- a. What types of sources of support are associated with TSE regarding SEN students?
 - b. Do these relations differ when taking into account whether or not a student has no, one or multiple diagnoses?

2. Materials and methods

2.1. Participants and data collection procedures

Data for the current study was collected from January to February 2018, from 692 regular school teachers; 291 teachers from 59 primary schools and 401 teachers from 61 secondary schools in Flanders (Belgium). To ensure the sample was representative, the following variables were taken into account to select a variety of schools: school network¹, geographical spread, and school size. The participating schools were recruited via e-mail and telephone. After approval from the school leader a link to an online survey was sent to be distributed among the teacher team.

Additional background information on the respondents was requested at the end of the survey; at that point 82 respondents (11.9%) had dropped out. Most of the remaining 610 respondents were female (n=486; 79.7%). Their teaching experience ranged from three months to 40 years. Using Huberman's (1989) 'Professional life cycle of teachers' the teachers careers were divided into five categories: (1) 0-3 years' experience: n=49 (8%); (2) 4-6 years' experience: n=56 (9.2%); (3) 7-18 years' experience: n=274 (44.9%); (4) 19-30 years' experience: n=170 (24.6%); (5) 31-40 years' experience: n=61 (10%). Of the teachers, 76 (12.5%) reported having experience in special education and 101 (16.6%) mentioned they had experience as a care teacher or (internal) student counsellor. Additional training regarding SEN was reported by 51 teachers (8.4%).

Teachers also provided information on the students they described as with (n = 692) and without SEN (n = 692) (see Measures). Most of them were male (respectively, n=468, 67.6% and n=373, 53.9%). Their ages ranged from 2.5 to 21 years for students with SEN (M = 11.91

¹ In Flanders, students in primary and secondary education can enroll in grant-aided free schools, grant-aided official schools, or community schools. Each group of schools is called a school network.

years) and from 2.5 to 22 years for students without SEN ($M = 11.75$ years). Regarding the SEN students, teachers were asked whether they had a diagnosis (no diagnosis: $n=193$; one diagnosis: $n=257$; multiple diagnoses: $n=239$), and if so, what diagnosis (including, physical, visual, auditory, non-verbal learning or psychiatric disability, chronic illness, cognitive impairment, dyslexia, dyscalculia, autism spectrum disorder, attention deficit hyperactivity disorder (ADHD), attention deficit disorder (ADD), tic disorder, non-verbal learning disability, coordination developmental disorder (DCD) or dyspraxia, dysphasia, stuttering, and giftedness). Based on previous research (e.g., Schwab, 2019), we were interested in those students with one diagnosis of which this diagnosis is a learning disability ($n=47$; dyslexia, dyscalculia, and non-verbal learning disability), a cognitive impairment ($n=12$), a socio-emotional and/or behavioural disorder ($n=61$; e.g., ADHD, ADD, tic disorder), and an autism spectrum disorder ($n=68$).

2.2. Measures

2.2.1. Student-Specific Teacher Self-Efficacy Scale

To measure TSE in relation to students with and without SEN, they were asked to complete the Dutch version of the Student-Specific TSE Scale (Zee & Koomen, 2015). To shorten the questionnaire, four items per subscale were administered (see Table 1): (1) Instructional Strategies (IS), (2) Behaviour Management (BM), (3) Student Engagement (SE) and (4) Emotional Support (ES). Teachers were asked to complete the scale twice, first for the first student on their class list without SEN (i.e., a student who does not receive additional care) and second for the first student on their class list with SEN (i.e., a student for whom the additional care within the school is not sufficient). A six-point Likert-type scale (1 = ‘totally disagree’ to 6 = ‘totally agree’) was used. Subscale scores were calculated as the mean of the respective items. In addition, an overall self-efficacy score was calculated by averaging the subscale scores.

The scales showed a very good internal consistency in the present sample for the overall student-specific self-efficacy towards students with SEN ($\alpha = .95$), as well as for all the subscales (IS: $\alpha = .88$, BM: $\alpha = .96$, SE: $\alpha = .91$, ES: $\alpha = .86$) and for the overall student-specific self-efficacy towards students without SEN ($\alpha = .96$) and the subscales (IS: $\alpha = .90$, BM: $\alpha = .94$, SE: $\alpha = .94$, ES: $\alpha = .90$). These figures are similar to the internal consistency of the original instrument (IS: $\alpha = .98$, BM: $\alpha = .94$, SE: $\alpha = .90$, ES: $\alpha = .85$) (Zee, de Jong, & Koomen, 2016).

Table 1. Student-Specific TSES Items (Zee & Koomen, 2015).

Item	Student-Specific TSES	Dimension*
1	How well can you let this student apply alternative problem solving strategies?	IS
2	To what extent can you craft stimulating questions for this student?	IS
3	How well can you adjust your lessons to the proper level for this student?	IS
4	How well can you provide appropriate challenges for this student?	IS
5	How well can you control disruptive behavior in this student?	BM
6	How well can you get this student to follow classroom rules?	BM
7	How well can you calm this student when he/she is disruptive or noisy?	BM
8	How well can you prevent this student from negatively affecting the classroom atmosphere?	BM
9	To what extent can you help this student to value learning?	SE
10	To what extent can you motivate this student for his/her schoolwork?	SE
11	How well can you help this student to understand the learning content?	SE
12	How well can you help this student to think critically?	SE
13	How well can you provide a safe and secure environment for this student?	ES
14	How well can you timely provide support to this student?	ES
15	To what extent can you provide this student with the space to make his/her own choices?	ES
16	To what extent can you adjust learning tasks to this student's needs and interests?	ES

*IS = Instructional strategies; BM = Behavior management; SE = Student engagement; ES = Emotional support.

2.2.2. Sources of support

To analyse TSE in relation to SEN students and the sources of support used for these students, the teachers were asked to indicate to what degree they made use of certain sources of support for the described SEN student (see Table 2), using a four-point Likert-type scale (1 = ‘(almost) never’ to 4 = ‘very often’). In addition, they were asked to indicate how effective they considered these support sources to be using a four-point Likert-type scale (1 = ‘not effective’ to 4 = ‘very effective’). The sources of support surveyed were based on Avramidis and Norwich (2002) (i.e., physical and human support) and on availability within the Flemish education system.

Table 2. Surveyed sources of support.

1. Information and advice	The teacher receives information or advice about how something could be handled; e.g. brochure, website, lesson examples, exchange experiences.
2. Materials	The teacher receives materials; e.g. a game, supporting materials, learning materials.

3. Emotional support	The teacher can express their views about events, informal problems in talks.
4. Observation and feedback	The teacher observes a colleague or asks for a class observation with feedback.
5. Supervision/coaching	The teacher is supervised or coached by a counsellor ² or team of counsellors.
6. Intersession	The teacher exchanges (own) work experiences with colleagues, learning from each other, reflecting together, becoming aware of their own strengths and work points, etc.
7. Co-teaching/team teaching	Teachers cooperate for lesson preparation, implementation and/or evaluation with shared responsibility and equal status.
8. Support for this student in the classroom	A counsellor provides (individual) student support in the classroom, complementary to the teacher's support.
9. Support for this student outside the classroom	A counsellor provides (individual) student support outside the classroom.

Descriptive statistics for the sources of support variables are displayed in Table 3. Teachers made the most use of 'emotional support ($M = 3.05$)' and also perceived this source of support as the most effective ($M = 2.94$). 'Observation and feedback ($M = 1.68$)' was identified as the source they made least use of, and is also perceived as the least effective ($M = 2.26$).

In addition, an exploratory factor analysis was performed on the sources of support to explore multi-dimensionality (see Table 3). A two-factor solution was found based on the scree plot and the interpretability of the factors. These two factors together accounted for 46.2% of the variance (Factor 1 = 13.24% and Factor 2 = 32.98%). An oblimin rotation was used because teachers' use of support is assumed to be related across types of source. Three items loaded significantly and substantially (i.e., higher than .45) on Factor 1, as shown in Table 3 (see pattern matrix). These items relate to 'easily accessible sources' for teachers when teaching SEN students. Five items loaded significantly and substantially (i.e., higher than .45) on Factor 2. These items relate to more 'cooperative sources' of support for teaching students with SEN. Item 6 is omitted from further analysis because of similar loadings on both factors. Two subscales were constructed, one for Easily accessible sources and one for Cooperative sources, averaging the respective item scores.

² Counsellors are referred to as internal or external. Internal counsellors are employed by the school and coordinate and implement student guidance trajectories within the school in cooperation with teachers, the school leader, and parents. External counsellors are not employed by the school itself but are assigned to the school for a short or longer period to support students with more complex SEN and assist teachers and internal counsellors.

Table 3. Descriptive statistics for used and perceived effectiveness of support sources for SEN Students and explorative factor analysis of the used sources of support.

Item	Descriptive Statistics M (SD)		Factor			
	Used	Perceived Effectiveness	Structure Matrix		Pattern Matrix*	
			1	2	1	2
1. Information and advice	2.33 (.88)	2.28 (.83)	.77	.25	.78	-.04
2. Materials	2.41 (.97)	2.48 (.93)	.65	.26	.64	.03
3. Emotional support	3.04 (.90)	2.93 (.88)	.70	.20	.72	-.06
4. Observation and feedback	1.68 (.85)	2.26 (.97)	.43	.56	.26	.47
5. Supervision/ coaching	1.97 (.94)	2.45 (.97)	.33	.67	.10	.63
6. Intervision	2.36 (.91)	2.73 (.87)	.53	.51	.40	.36
7. Co-teaching/ team teaching	1.86 (.97)	2.47 (1.06)	.19	.65	-.05	.66
8. Support in the classroom	2.05 (.98)	2.60 (1.01)	.21	.78	-.09	.81
9. Support outside the classroom	2.10 (.99)	2.57 (1.02)	.16	.62	-.07	.65

2.3. Data analysis

All data analyses were conducted using SPSS software (IBM, 2016) version 24. A paired samples T-test was performed to compare teachers' student-specific self-efficacy in relation to teaching students with and without SEN. To examine the contribution of teacher-related variables in predicting TSE a series of multilevel models were fitted. The multilevel technique corrects for nested data structures (i.e., students nested in teachers) (Snijders & Bosker, 1999). To test the effects of the teacher-related variables on TSE scores, we started from a multilevel regression model including the independent variables listed above, plus the interaction terms between SEN and the teacher-related variables. These latter terms investigate whether the effect of a teacher-related variable on TSE is different for students with and without SEN. In the final model, only predictors that were significant were retained. To investigate the contribution of student-related variables in predicting teachers' student-specific self-efficacy beliefs towards SEN students, a set of one-way ANOVAs were carried out. (Multilevel modelling was not needed because each teacher rated only one SEN student.) Specifically, we examined how teachers' student-specific self-efficacy scores differed for students without a diagnosis, with one diagnosis, and with multiple diagnoses. In addition, a series of one-way ANOVAs was outlined to examine differences in student-specific self-efficacy towards SEN students with different specific disabilities (i.e., learning disability, cognitive impairment, socio-emotional and/or behavioural disorder, and autism spectrum disorder). Post hoc tests (p

<.05) were carried out using the Tukey test. To identify whether the use of support was predictive for teachers' student-specific self-efficacy levels in relation to SEN students, multiple regression analyses were performed using Easily accessible sources and Cooperative sources as predictors. In addition, multiple regression analyses were conducted separately for students without a diagnosis, with one diagnosis, and with multiple diagnoses, to explore differential predictive value of support sources for these student groups.

3. Results

3.1. Teachers' self-efficacy beliefs towards students with and without special educational needs

For the overall student-specific TSE levels, as well as for all dimensions, significant and large differences were found (see Table 4). Higher teachers' self-efficacy levels were reported for students without SEN.

Table 4. Means, standard deviations, and paired samples t-tests of teachers' ratings of student-specific self-efficacy towards students without and with SEN.

Dimensions of student-specific TSE	Descriptive statistics M (SD)		t-Value	<i>p</i>	Cohen's <i>d</i>
	Students without SEN (N=692)	Students with SEN (N=692)			
Instructional strategies	4.56 (1.09)	3.33 (1.20)	23.027	.000	1.07
Behaviour management	4.92 (1.08)	3.98 (1.60)	15.291	.000	0.69
Student engagement	4.56 (1.17)	3.40 (1.33)	19.799	.000	0.93
Emotional support	4.60 (1.05)	3.63 (1.16)	20.345	.000	0.88
Overall TSE	4.66 (.98)	3.59 (1.11)	23.265	.000	0.96

3.2. Relation between teacher variables and teachers' student-specific self-efficacy beliefs

To examine the contribution of teacher-related variables in predicting TSE levels in relation to students with and without SEN, a series of multilevel models were fitted (see Table 5). Regressing scores for TSE on teacher-related variables, we found, first, that female teachers showed higher scores for student-specific IS, SE, ES and overall self-efficacy. However, there was also a significant interaction effect between gender and the severity of SEN for overall self-efficacy and IS self-efficacy, indicating that for these outcomes, self-efficacy of female teachers was higher for students without SEN, but not for students with SEN. Second, with regard to grade levels, we found that primary teachers showed higher scores for student-specific SI, SE, ES and overall self-efficacy. However, significant

interaction effects were found for overall self-efficacy and all dimensions, indicating that primary school teachers, compared to secondary school teachers, generally showed higher self-efficacy regarding students without SEN, but lower self-efficacy regarding students with SEN. Third, teachers with experience in special education have higher levels of self-efficacy about instructing SEN students. Fourth, a negative association was found between experience as a care teacher or internal counsellor and student-specific IS and ES. When having experience as a care teacher or internal counsellor, lower levels of self-efficacy towards instructing and emotionally supporting these students was found. In addition, no significant effects related to years of teaching experience and training were found.

Table 5. Fixed Parameter Estimates for predictors of teachers' dimensions and overall student-specific self-efficacy.

Predictor	Student-Specific TSE for IS	Student-Specific TSE for BM	Student-Specific TSE for SE	Student-Specific TSE for ES	Student-Specific overall TSE
	<i>B</i> (S.E.)	<i>B</i> (S.E.)	<i>B</i> (S.E.)	<i>B</i> (S.E.)	<i>B</i> (S.E.)
<i>Student-level variable</i>					
SEN	-.64 (.14)***	-.75 (.10)***	-.81 (.09)***	-.79 (.08)***	-.57 (.13)***
<i>Teacher-level variables</i>					
Gender	.42 (.12)***		.23 (.09)*	.18 (.08)*	.36 (.11)**
Grade level	.23 (.10)*	.20 (.10)	.40 (.10)***	.24 (.08)**	.26 (.09)**
Experience in special education	.21 (.10)*				
Experience as a care teacher or (internal) counsellor	-.19 (.09)*			-.20 (.08)*	
SEN*Gender	-.39 (.17)*				-.34 (.15)*
SEN*Grade level	-.62 (.14)***	-.46 (.15)**	-.78 (.14)***	-.39 (.12)**	-.52 (.12)***

* $p < .05$; ** $p < .01$; *** $p < .001$.; Special educational needs (SEN): 0 = no SEN, 1 = SEN; Gender: 0 = male teachers, 1 = female teachers; Grade level: 0 = secondary education, 1 = primary education; Experience in special education: 0 = no experience, 1 = experience; experience as a care teacher or (internal) counsellor: 0 = no experience, 1 = experience; TSE = Teachers' self-efficacy; IS = Instructional strategies; BM = Behavior management; SE = Student engagement; ES = Emotional support.

3.3. Relation between teachers' self-efficacy beliefs and student variables

3.3.1. None, one or multiple diagnoses

A series of univariate analyses of variance were run to compare TSE regarding specific SEN students without a diagnosis, with one diagnosis, and with multiple diagnoses. The differences between these three groups were statistically significant for overall TSE, as well

as for all dimensions (see Table 6). Post-hoc Tukey tests revealed that teachers' student-specific self-efficacy levels are significantly higher in relation to students with one diagnosis compared to students with multiple diagnoses for overall self-efficacy as well as all dimensions. Also, significantly higher levels of overall self-efficacy and student-specific IS and SE were found for students with one diagnosis as compared with students with no diagnosis. Teachers' levels of self-efficacy regarding students with no diagnosis and multiple diagnoses was found to differ for student-specific BM and ES self-efficacy only, in favour of students with multiple diagnoses.

Table 6. Univariate analyses of variance of students with SEN without a diagnosis, with one diagnosis, and with multiple diagnoses among the dimensions of student-specific TSE.

Dimensions of student-specific TSE	Descriptive Statistics M (SD)			F-Value (3,688)	P	η^2
	No diagnosis (n=193)	One diagnosis (n=257)	Multiple diagnoses (n=239)			
Instructional strategies	3.09 (1.13) _a	3.67 (1.20) _b	3.17 (1.16) _a	12.014	.000	0.05
Behaviour management	4.03 (1.65) _a	4.31 (1.49) _a	3.60 (1.60) _b	9.306	.000	0.04
Student engagement	3.13 (1.17) _a	3.87 (1.31) _b	3.14 (1.33) _a	18.094	.000	0.07
Emotional support	3.67 (1.08) _a	3.87 (1.15) _a	3.35 (1.16) _b	9.854	.000	0.04
Overall teacher self-efficacy	3.48 (1.00) _a	3.93 (1.09) _b	3.31 (1.11) _a	15.570	.000	0.06

Note: Means sharing the same subscript do not differ significantly according to a post-hoc Tukey test.

3.3.2. Individual disabilities

Next, a series of univariate analyses of variance was performed to compare student-specific teachers' perceptions of self-efficacy regarding students with different disabilities (see Table 7). Significant differences were found for overall student-specific TSE ($F[1,148] = 2.87, p < .05, \eta^2 = .05$), and student-specific BM ($F[1,148] = 10.626, p < .001, \eta^2 = .15$). Post-hoc Tukey tests revealed that teachers reported significantly lower levels of overall self-efficacy and student-specific BM towards students with socio-emotional and/or behavioural disorders compared to students with learning disabilities. In addition, lower levels of TSE for student-specific BM were found for students with socio-emotional and/or behavioural disorders compared to students with an autism spectrum disorder.

Table 7. Univariate analyses of variance of students with a learning disability, students with a cognitive impairment, students with a socio-emotional and/or behavioral disorder, and students with an autism spectrum disorder among the dimensions of student-specific TSE.

Dimensions of student-specific TSE	Descriptive Statistics M (SD)				F-Value (1,184)	p	η^2
	Learning disability (n=47)	Cognitive impairment (n=12)	Socio-emotional and/or behavioral disorder (n=61)	Autism spectrum disorder (n=68)			
Instructional strategies	3.65 (1.20)	3.15 (1.04)	3.62 (1.19)	3.60 (1.14)	.676	.568	.01
Behaviour management	4.85 (1.16) _a	3.85 (1.40) _{ac}	3.44 (1.44) _{bc}	4.40 (1.40) _a	10.626	.000	.15
Student engagement	4.07 (1.25)	3.58 (1.25)	3.60 (1.29)	3.80 (1.26)	1.337	.264	.02
Emotional support	4.11 (1.09)	3.94 (1.08)	3.77 (1.03)	3.73 (1.13)	1.264	.288	.02
Overall TSE	4.17 (1.01) _a	3.63 (1.00) _{ac}	3.61 (1.06) _{bc}	3.89 (1.04) _{ac}	2.874	.038	.05

Note: Means sharing the same subscript do not differ significantly according to a post-hoc Tukey test.

3.4. Sources of support relating to teachers' beliefs in their self-efficacy regarding students with special educational needs

A set of multiple regression analyses (see Table 8) was conducted to investigate the relation between the two identified types of support sources: Easily accessible sources and Cooperative sources, and teachers' student-specific self-efficacy. For all outcomes except for IS and BM self-efficacy, significant variance was explained by the model with these two predictors. For overall student-specific self-efficacy, SE and ES self-efficacy, significant positive effects were found for Cooperative sources. More use of Cooperative sources of support predicted higher overall student-specific self-efficacy levels, and higher levels of self-efficacy regarding engaging students and giving emotional support in specific. No significant effects were found for Easily accessible sources of support.

3.5. Sources of support relating to teachers' beliefs in their self-efficacy regarding students with no, one or multiple diagnoses

To follow-up on the analyses, we examined whether the use of support had similar effects across groups of students with no diagnosis, one diagnosis, and multiple diagnoses. In these

separate analyses, no significant effect on teachers' student-specific self-efficacy was found for Easily accessible sources. With regard to Cooperative sources, significant effects were found for overall student-specific TSE ($B = .27, p [t] < .05, R^2 = .036$), as well as for SE ($B = .39, p [t] < .01, R^2 = .050$) and ES ($B = .39, p [t] < .01, R^2 = .076$) in the group of SEN students without a diagnosis ($n = 174$). In the group of students with one diagnosis ($n = 225$), two significant positive associations were found for IS ($B = .29, p [t] < .05, R^2 = .021$) and ES self-efficacy ($B = .36, p [t] < .01, R^2 = .038$). For students with multiple diagnoses ($n = 239$), no significant effects of Cooperative sources on TSE outcomes were found.

Table 8. Multiple regression analysis with Easily accessible sources and Cooperative sources as predictors for student-specific TSE beliefs towards regarding SEN students (n=605).

	Easily accessible sources				Cooperative sources				R ²
	B	S.E.	t	p	B	S.E.	t	p	
Instructional strategies	-.07	.08	-.829	.407	.20	.08	2.381	.018	.009
Behaviour management	-.05	.10	-.521	.603	.00	.11	.04	.968	.000
Student engagement	-.16	.09	-1.833	.067	.29	.09	3.169	.002	.017**
Emotional support	-.03	.07	-.445	.656	.31	.08	9.973	.000	.027***
Teachers' self-efficacy	-.08	.07	-1.092	.275	.20	.08	2.674	.008	.012*

* $p < .05$; ** $p < .01$.; *** $p < .001$

4. Discussion and conclusion

The aim of this study was to provide insights into teachers' self-efficacy (TSE) in relation to teaching students with and without special educational needs (SEN). Recent research has drawn attention to this subject and to the importance of assessing TSE at student-specific levels instead of generally (e.g., Love et al., 2019; Schwab, 2019; Zee & Koomen, 2015). This approach may prevent tapping generalized attitudes toward inclusion, yielding a more concrete and nuanced picture of perceived difficulties of teachers in their interactions with specific SEN students. To do this, we used the student-specific TSE scale developed by Zee and Koomen (2015). Specifically, this study had two main research objectives: (1) to find and compare teachers' student-specific self-efficacy regarding students with and without SEN, and examine the contribution of teacher-related and student-related variables in predicting TSE, and (2) to identify which sources of support are predictive for teachers' student-specific self-efficacy in relation to SEN students.

Regarding the first research objective, it was found that teachers have significantly lower levels of student-specific self-efficacy when teaching SEN students compared to students without SEN. This is in keeping with findings in the literature (e.g., Schwab, 2019), showing that even when examining experienced levels of self-efficacy toward a specific SEN student, teachers feel in general less efficacious teaching these students.

When looking at teacher-related variables that affect these levels of self-efficacy, remarkable results were found with regards to gender and grade level. Compared to male teachers, female teachers generally tend to have higher levels of self-efficacy for teaching students without SEN, but not for students with SEN. This finding differs with the finding of Tsakiridou and Polyzopoulou (2014), who found that Greek male in-service teachers had in general higher levels of self-efficacy than female in-service teachers regarding inclusive practices. At the grade level, we found that compared to secondary school teachers, primary school teachers have higher levels of self-efficacy towards students without SEN, but lower overall levels of self-efficacy towards SEN students, and for instructing, managing, engaging and emotionally supporting these students in particular. This is in contrast with the findings of Baker (2005) who found that pre-service primary teachers had higher levels of self-efficacy regarding SEN students compared to pre-service secondary school teachers. The implementation of IE implies a shared responsibility among all school team members (Theoharis & Causton, 2014). In the Flemish education system, primary school teachers are solely responsible for teaching the same group of students for an entire school year, whereas secondary school teachers teach multiple groups of students. Consequently, the load of teaching SEN students is shared in secondary schools. Therefore, we hypothesize that when the load is shared there is less impact on levels of self-efficacy. In addition, we found that teachers with experience of special education, have higher levels of self-efficacy regarding instructing SEN students. However, teachers with experience as a care teacher or internal counsellor showed lower levels of self-efficacy regarding instructing and emotionally supporting SEN students. Possibly, teachers with experience in special education may have had more successful experiences with SEN students than care teachers of internal counsellors within mainstream schools, because of the additional teacher support offered in special education. Furthermore, years teaching experience and training (an additional degree in care) did not make a difference in regards to teachers' student-specific self-efficacy. Possibly, having mastery experiences with SEN students is more crucial to TSE than their general training or teaching experience (Van Mieghem et al., 2018).

With regard to the student-related variables for students with SEN, we found that in general teachers have higher levels of student-specific self-efficacy when teaching students

with one diagnosis compared to students with multiple diagnoses. More specifically, teachers felt more competent to instruct, manage, engage, and emotionally support these students. These results are in keeping with the idea that more diagnoses, usually indicative of more severe SEN, result in lower levels of self-efficacy (e.g., Schwab, 2019). However, we also found teachers felt more efficacious in instructing and engaging students with one diagnosis, compared to SEN students without any diagnosis. These results may indicate that having a diagnosis can provide additional information or guidelines for teachers to work with these students. Further research is needed to interpret these results.

When looking at the range of disabilities, we found that, generally, teachers have lower levels of self-efficacy and more specifically regarding managing the behaviour of students with socio-emotional and/or behavioural disorders compared to students with learning disabilities. In addition, as they showed lower TSE regarding managing the behaviour of students with socio-emotional and/or behavioural disorders, compared to students with autism spectrum disorder. The study of Schwab (2019) also showed low levels of self-efficacy for mainstream teachers towards students with hyperactivity and attention deficits.

For the second research objective, we found that the more Cooperative sources of support were used (observation and feedback, supervision/coaching, co-teaching/team teaching, support in the classroom, and support outside the classroom) the higher the overall levels of student-specific self-efficacy, and the more efficacious teachers felt in engaging, and giving emotional support to SEN students. No predictive value for Easily accessible sources of support (information and advice, materials, and emotional support) on teachers' student-specific self-efficacy was found. These findings emphasize the importance of human support sources as described by Avramidis and Norwich (2002), but only those sources of support characterised by in-depth cooperation between two teachers or a teacher and an internal or external counsellor. In addition, we examined whether the use of Cooperative or Easily accessible sources had similar effects across groups of SEN students with no diagnosis, one diagnosis, and multiple diagnoses. As in the general sample, the use of Cooperative sources was found to improve TSE regarding students with one diagnosis and without a diagnosis. However, no significant effects of Cooperative sources on TSE were found for students with multiple diagnoses. We hypothesize that using Cooperative sources of support is not sufficient for students with such severe SEN.

Educators often show resistance to the implementation of a more IE system. Often, teachers do not feel competent to teach SEN students (e.g., de Boer et al., 2011). This study

points out the importance of sources of support, and particularly of Cooperative sources, in improving levels of TSE. We assume that making these forms of support more available to teachers will make them more competent to deal with students with SEN and will, therefore, reduce resistance to a more IE system. However, Cooperative sources of support may not be sufficient for all students (e.g., students with multiple diagnoses) or all teachers. Further research on boundary conditions of Cooperative sources of support is needed.

Finally, some strengths and limitations of this study need to be acknowledged. One strength is that a student-specific scale was used to measure TSE levels. This approach allowed to gain more insight into how self-efficacy beliefs vary depending on the SEN of the students and into the experiences of teachers dealing with specific SEN students. Further, a large sample of teachers participated in the study, rating students with a wide diversity of SENs in terms of type and number of diagnoses. One of the limitations is that teachers were asked to complete the survey for two (randomly selected) students only, one with and one without SEN. Future research may increase numbers of students with SEN to be able to separate variance at the student and teacher level and look deeper into teacher- and student-level predictors. In addition, the conclusion of this research encourages more extensive research that focuses on explaining why Cooperative sources of support have an impact on TSE, whereas the Easily accessible sources do not.

This study investigated how teacher-related variables, student-related variables, and sources of teacher support were associated with teachers' self-efficacy levels in relation to specific students with SEN. The main finding is that while teachers generally feel less efficacious in teaching students with SEN, the use of Cooperative sources of support, such as team teaching, observation and feedback, supervision, and student support within and outside the classroom, improves their level of self-efficacy. We assume that making these forms of support more available to teachers will make them more competent in dealing with students with SEN and will, therefore, also reduce resistance to a more inclusive education system.

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