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## Bullying of students who receive special education services for learning and behaviour difficulties in Norway

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### ABSTRACT

In Norway 5.8% of students report being bullied as much as three or more times a month [UDIR. 2021a. Student Survey 2020 [Elevundersøkelsen 2020]. <https://www.udir.no/tall-og-forskning/finn-forskning/rapporter/elevundersokelsen-2020-nasjonale-tall-formobbing-og-arbeidsro/>]. The present study investigates the likelihood of students being bullied based on their special education status (i.e. receiving special educational services or not), and the type of learning or behaviour difficulties that are more likely to attract bullying. Data were collected about students aged nine to 15 (N = 2756) from 29 schools across two municipalities in Norway. Using conservative methodological approaches to control for possible covariate bias, our results reveal that the students receiving special education services were not more likely to be bullied than their peers not receiving such services. When focusing on the type of learning and behaviour difficulties students had, we found that students with behaviour and general learning difficulties were most likely to be bullied, while students with specific learning difficulties or hearing/vision difficulties were not more likely to be bullied as compared with their peers. Our findings indicate that there may be other factors impacting students' likelihood of being bullied, outside of their special education status. These findings offer an important contribution to the field of special education and bullying.

### ARTICLE HISTORY

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### KEYWORDS

Bullying; special education; learning and behaviour difficulties; peer-victimisation

## Introduction

Although bullying does not have a universal definition, similarities can be found between different sources. In its annual investigation into students' learning and satisfaction in schools, the Norwegian Directorate for Education (UDIR) defines bullying as repeated negative actions from others towards a student who may have difficulty defending themselves (UDIR 2021a). The United Nations Educational, Scientific and Cultural Organisation (UNESCO) defines bullying as repeated intentional and aggressive behaviour, involving a real or perceived power imbalance, where the victim feels 'vulnerable and powerless to defend themselves' (2017, 15). It includes both physical and psychological

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behaviours in its definition of bullying and sees bullying as a worldwide problem in schools (UNESCO 2017).

Bullying is often linked to negative short- and long-term effects on psychological adjustment (Vlachou et al. 2011). It has been associated with reduced well-being (McMahon et al. 2010), behaviour problems (Sourander et al. 2007), increased depression and low self-esteem (Hawker and Boulton 2000), as well as general difficulties in school (Glew et al. 2005; Juvonen, Wang, and Espinoza 2011; Strøm et al. 2013). In addition, research has shown that the possible negative effects of being bullied often continue well into adulthood (Brunstein et al. 2019; Copeland et al. 2013; Kontak et al. 2019). Although these studies do not specifically focus on students with learning difficulties or disabilities, these outcomes are particularly detrimental for those targeted because of such difficulties (Russell et al. 2012).

Across the world, one in three students experience bullying (UNESCO 2019). In its global status report on school violence and bullying, UNESCO (2017) indicates that vulnerable children (e.g. children with learning difficulties, those from low socio-economic backgrounds, cultural minorities or those with disabilities) are often at greater risk of being bullied. Research also indicates that receiving special educational services (SE) has an effect on the likelihood of students being bullied (for review, see Rose, Monda-Amaya, and Espelage 2011). Various studies have investigated these topics but relatively few have examined SE and bullying using conservative methods of controlling for selection bias – for example, using fixed-effects models and propensity score analysis methods instead of only relying on controlling for background variables.

The present study builds on Øksendal and colleagues' (2019) recommendation to examine a diverse range of learning and behaviour difficulties (LBD), as well as expanding on their research by focusing on SE status. We, therefore, investigate the likelihood of being bullied in school, based on whether students receive SE or not, and related to the type of LBD students present.

## Special education in Norway

In Norway, all students who do not suitably benefit from ordinary education are entitled to SE. Receiving SE is not dependent on personal characteristics, whether students have learning difficulties, show behavioural disorders, are disabled, have psychological dysfunctions or their living situation (Haug 2014). The reason for requiring SE is also irrelevant to the decision (Haug 2014). Around 18% of education resources are spent on SE (UDIR 2016), where the goal is to provide all students with the same opportunities (Norwegian Education Act 1998; UDIR 2018). A central aspect of SE is that students requiring SE are educated in the same class as their peers wherever possible. This means that, as far as possible, all students are present in the same classroom, but those receiving SE work in accordance with different learning goals to those of their peers as per an individual education plan (IEP). To determine if a student should receive SE, several steps are taken (UDIR 2014). Initially, the school and head teacher are responsible for referring a student for an expert assessment if they believe a student does not adequately benefit from ordinary education. A decision is then made during the expert assessment regarding the need for SE, and the nature of the instruction the student should receive

(Education Act 1998, section 5-3). The school leader then decides if the results of the assessment warrant the proposed actions.

When a decision for SE is made, the student is entitled to an IEP (Education Act, 1998, Section 5-5). The IEP must contain specific goals and clearly specify how the education will be carried out (Education Act, 1998). An IEP may involve an assistant monitoring and assisting students, or students may be given specially adapted equipment to use in the classroom. In other words, SE is supposed to be adapted to best suit the student's needs. The SE service provided to students is adjusted to their needs together with the school, the students themselves and their parents. In addition, the school should prepare an annual report including a written overview of the IEP and an assessment of the student's learning outcomes (Education Act, 1998).

SE services offered to students have not changed significantly since 1998, yet, in recent years, the number of primary and secondary school students receiving SE has risen from 5.4% in 2004 to 7.7% in 2020 (Statistics Norway 2021). Since 2013/14, the proportion of students receiving SE in ordinary classrooms as opposed to leaving the classroom has increased significantly (UDIR 2021b). In 2013/14, 28% of students receiving SE did so in their ordinary classroom while in 2020/21, this number has risen to 48% (UDIR 2021b). Students receiving SE in Norway often display a range of difficulties, varying from difficulties with reading, writing or arithmetic, to behaviour problems such as attention deficit hyperactivity disorder (ADHD) (Ogden 2014). Students most frequently referred for an expert assessment are those with emotional and behavioural difficulties (Haug 2014). While 91% of students receiving SE are enrolled in ordinary classrooms, the remaining 9% are enrolled in classrooms specifically for SE (UDIR 2021b). These are typically students with extraordinary needs, those with multiple LBDs, mobility problems, or those with extensive behaviour difficulties (Wendelborg, Kittelsaa, and Caspersen 2017).

Although the physical inclusion (i.e. being present in the same classroom) of students with special educational needs in mainstream schools is heavily encouraged in Norway (Haug 2020), this does not automatically guarantee feelings of belonging and well-being. What is more, as Haug (2014) points out, although inclusion is a central theme in the Norwegian National Curriculum, the meaning and implementation of the concept are not always clear. Despite how inclusion is understood, it should involve meaningful social participation, where friendships are made (Humphrey and Symes 2010; Pijl, Frostad, and Flem 2008). Lund, Helgeland, and Kovac (2017) present the idea that denying experiences of belonging, feelings of importance within a community, and preventing the possibility of participation also be identified as bullying. Building on these ideas, we see a need to investigate experiences of bullying among students receiving SE to understand their feelings of inclusion – which we believe includes feeling accepted and valued, positive peer relations, as well as physical inclusion.

## **Previous research on SE status and categories of LBDs in relation to experiences of being bullied**

### ***SE status and bullying***

Previous research, undertaken primarily in the US and UK, has indicated that students receiving SE have an increased risk of being bullied (for review, see Rose, Monda-

Amaya, and Espelage 2011). Rose et al.'s (2009) large-scale study of middle and high school students, for example, found that students enrolled in SE were bullied more frequently than their general education peers. Farmer et al. (2012), investigating bullying and school adjustment, also found strong associations between students receiving SE and being bullied. Although previous studies have found that students receiving SE are bullied more frequently, few investigate whether it is the fact that the student is receiving SE or other factors that contribute to the increased likelihood of being bullied. In addition, only a small number of studies have used more rigorous methods to handle selection bias (e.g. using propensity score and fixed-effects regression) when analysing the effects of SE. Studies that have used such methods focus primarily on learning and satisfaction in relation to SE and not bullying per se (see, for example, Dempsey, Valentine, and Colyvas 2016; Kvande et al. 2019; Lekhal 2018). The demand for more rigorous methods of examining bullying in relation to SE therefore indicates a need for the present study.

### *Categories of LBDs and bullying*

Although previous research points to the fact that students receiving SE are more frequently bullied than their peers, the reason for this may well be related to the type of LBD the student displays and not the fact they are receiving SE. Blake et al. (2012) suggest that students with disabilities (of any kind) are up to 1.5 times more likely to be bullied compared to their typically developing (TD) peers. To our knowledge, there are at present only a selection of studies that have looked at specific LBDs in relation to bullying. Swearer et al. (2012), for example, focused on eight categories of LBDs and the frequency of being bullied. These researchers found that students with behavioural disorders reported the highest frequency of being bullied compared with their TD peers, as well as those with a specific learning disability, speech/language impairment, other health impaired, gifted, mild mental handicap, multiple verifications, and hearing impairment. They also found that students with observable disabilities (i.e. language and/or hearing impairments, or mild intellectual disabilities) reported being bullied more often than students without any difficulties.

Bear et al. (2015) found that students with specific learning disabilities were 1.3 times more likely to be bullied than their TD peers. Rose et al. (2015) made similar findings, in addition to observing that students with intellectual disabilities, and emotional and behavioural disorders also reported higher levels of being bullied than their TD peers. Twyman et al. (2010), in their investigation of 8–17-year-olds' experiences of bullying, found that participants experiencing learning disabilities, autism spectrum disorders, or ADHD scored significantly higher than their TD peers on the Reynolds' Bully-Victimisation Scale. In addition, they discovered that students experiencing behavioural or mental health difficulties had increased mean victimisation scores compared to TD peers.

Despite the fact that previous studies have addressed bullying in relation to LBDs, there is still a need to further address various types of LBDs in the same sample (Øksendal et al. 2019). It seems that students receiving SE are at a high risk of being bullied but the frequency of bullying, based on different LBDs, varies. Clearly, more definitive data are needed in this area before any solid conclusions can be reached. We propose that rather than only relying on controlling for background variables, this

should be done using conservative methods, such as including covariates, using fixed-effects models and propensity score adjustment to account for possible selection effects, using broad categories of LBDs. Norway is an appropriate context to undertake this research, where SE is primarily offered in mainstream schools.

## The present study

This study aimed to gain a better understanding of which students were at a higher risk of being bullied in school. More specifically, our first research question was: Do students receiving SE in Norwegian mainstream schools have a greater likelihood of being bullied than their peers? Our second research question was: Does the likelihood of being bullied depend on the type of LBD a student presents (i.e. hearing/vision difficulties, behaviour difficulties, specific or general learning difficulties)? All analyses were done with conservative methods of controlling for selection bias.

## Methods

### Participants

Data for this study were collected as part of The Function of Special Education (SPEED) project, a national research project focusing on SE in Norway, funded by the Norwegian Research Council. In 2013 (time 1 [T1]), all students between the age of nine and 15, in grades 5, 6, 8 and 9 in all schools in two municipalities in Norway, were invited to participate in the study. The aim was to include approximately 200 students receiving SE in the sample. It was, therefore, necessary to collect data from around 3000 students and thus, two municipalities. The choice of municipalities was made based on their location in relation to the university colleges running the study. The municipalities, located in different parts of Norway, comprise different cultures and industries. Data was collected in small, medium and large schools as well as schools located in smaller towns, medium-sized towns and larger cities. No noticeable differences between the two municipalities and the national sample in relation to gender, parental background and the number of students receiving SE services were found (Topphol, Haug, and Nordahl 2017).

School management was contacted via e-mail as well as face to face. A formal agreement on participation was signed prior to school management informing the participating schools. Information meetings were held for principals and parent representatives in 2012 and 2013. In total, 29 schools participated.

Students were invited to participate through information letters with a supplementary parent consent form. Consent declaration included the students' participation and approval for teachers to answer questions about them. The project was approved by the Norwegian Centre for Research Data (NSD).

Of the students invited, 2834 (95.4% response rate) agreed to participate at T1. These students were more or less evenly distributed between the four grade levels (from grades 5, 6, 8 and 9: 733, 741, 683, 677 students, respectively). Data from questionnaires about student development, learning environment and family background were collected from the students, their teachers and parents. The same respondents repeated all measures one year later at time two (T2).

## Measures

### Bullying

At T2, all students were asked about the degree to which they had been bullied by other students through the following statement: *I am often bullied by other students*. Response options were: 'YES', 'yes', 'no', 'NO'. This question was formulated based on a question students receive in UDIR's student satisfaction survey, which is distributed to all students annually from the fifth grade. Within UDIR's survey, students are provided with the following definition of bullying: repeated negative actions from a group or single person, towards a student who may have difficulty defending themselves. Bullying can be name calling, teasing, excluding someone, talking behind their back, hitting, or pushing (translated from UDIR 2021a). Since it may be assumed that this definition is relatively well-known among students as they are provided with it every year, while filling in our questionnaire, students were not provided with this, or any other definition of bullying. Based on student answers to our question about bullying, we defined dichotomous variables for being bullied or not. Students who answered 'YES' or 'yes' were coded 1, and students who answered 'no' or 'NO' were coded 0. In other words, a variable was created to distinguish students who had been bullied from those who had not.

### SE status

At T1, each student's main teacher was asked whether the student received SE. Response options were: 'Yes', 'No' or 'Don't Know'. A dummy variable was created in which 'Yes' was coded 1 and 'No' was coded 0. When teachers responded: 'Don't Know', we coded it as missing data.

### Learning and behaviour difficulties

Measures related to LBDs involved direct questions about each student's difficulties, or lack thereof, and, in the case of behavioural difficulties, a scale to measure symptoms of externalising behaviour. This scale is described below under the subheading behavioural difficulties. Teachers were asked about individual students' difficulties by indicating which difficulty applied to the student. Teachers were given the following instructions: *Tick whether the student has one of the following problems or difficulties. If the student has more than one problem, tick what you think is the primary problem.* The choices were as follows: Hearing difficulties, Vision difficulties, ADHD, Behaviour problems excluding ADHD but including loneliness or anxiety, Specific learning difficulties in mathematics, Norwegian and other subjects, General learning difficulties, Other difficulties, No difficulties.

In the present study, based on what teachers answered about students' LBDs, we chose to merge certain categories because some LBD categories contained relatively few students. There were, for example, only 10 students with hearing difficulties and 20 with vision difficulties making individual analysis of these two groups challenging. Although these are two very different difficulties, the decision to combine them was based on the fact that they are more alike than, for example, externalising problems. In addition, some of the categories were not pure. For example, teachers could tick the category 'Behaviour problems excluding ADHD but including loneliness or anxiety', which included both internalising and externalising behaviours. This made it hard to establish the type of

difficulties a student actually had. We, therefore, chose to exclude this teacher-selected category. Below we explain in more detail how each category was defined and how the LBD was assessed.

Hearing and vision difficulties included students identified by their teachers as having either hearing or vision difficulties. When the teacher ticked that a student had either hearing or vision difficulties, they were included in this category. Thus, students with this problem (e.g. hearing or vision difficulties) were coded 1, and students without such a problem were coded 0.

Behaviour difficulties were categorised using two sources: The teacher's judgement of a student's difficulties and the student's self-report. Students identified by their teacher as having ADHD were categorised as having behaviour difficulties. Students' self-report about their own behaviour at T1 was also used to measure behaviour difficulties. Students' scores on an externalising symptom scale were used here. This scale gauged symptoms of externalising behaviour problems using eight questions. These questions were based on previous research by Ogden (1995) and Sørli and Nordahl (1998). The questions included: 'I argue with other students at school', 'I physically fight other students at school', 'I answer back when the teacher irritates or reprimands me', 'I get angry quickly when I am at school', and 'I have threatened or tormented other students'. The response categories were: 1 = never/rarely, 2 = sometimes, 3 = often, and 4 = very often. Based on these questions, a sum score was calculated. The reliability of the scale was satisfactory (Cronbach's  $\alpha = .70$ ). Based on the calculated sum scores, we defined one *dichotomous variable for having behaviour difficulties*. Students with a score of two standard deviations lower than the average were coded as having a problem, whereas the rest of the students were characterised as developing normally. In other words, there were two possible ways to be placed into the category of behaviour difficulties: Either the teacher ticked that the student had ADHD, or the student was two standard deviations below the average on their self-report on externalising behaviour symptom scale. Students placed in this category were coded 1, and students without such a problem were coded 0.

Specific learning difficulties were measured by teachers indicating the corresponding difficulty for each student. Students whose teacher indicated they had a learning difficulty or difficulties with either mathematics, Norwegian or another subject, but were not 'behind' ability-wise, were characterised as having a specific learning difficulty. Thus, students with a problem (specific learning difficulty) were coded 1, and students without such a problem were coded 0.

General learning difficulties were measured by teachers indicating various difficulties the student experienced. This category consisted of students with problems in many subjects and who were 'behind' ability-wise, as well as in mental development. Thus, students with a problem (general learning difficulties) were coded 1, and students without such a problem were coded 0.

### **Confounding variables**

Theory, as well as empirical research, has previously identified certain background characteristics that increase the likelihood of a student receiving SE (for a review, see, for example, Morgan et al. [2010] and McCoy et al. [2012]). Our selection of confounding variables builds on this. Prior research has also found low socio-economic status and parental education to be linked to bullying (Jansen et al. 2012). In addition, boys are more



often involved in bullying behaviour than girls (Cook et al. 2010; Farmer et al. 2012; Nordhagen et al. 2005). Based on this, the following variables were included as control variables in all analyses: student's gender, mother and father's education, minority background and student's age.

Since it is recommended that several covariates be included when predicting a propensity score (e.g. Shadish, Cook, and Campbell 2002), a large number of supplementary covariates functioning as predictors of receiving SE were included in the analyses predicting the propensity score for receiving SE.

Questionnaires completed at T1 by students, teachers and parents were used to collect data on covariates and supplementary variables were used to predict the propensity score for receiving SE. These variables were based on existing scales and theory. An expert group, consisting of education researchers and practitioners, was responsible for the selection and adaptation of these scales (for a more comprehensive account of the methods, see Toppol et al. [2017]). Table 1 offers further information on all variables, the informant group, internal consistency (Cronbach's  $\alpha$ ) and the sources on which the scales were based.

## Analyses

For our first research question, the relationship between SE status and the likelihood of being bullied by peers was examined using a multinomial logistic regression analysis. Our analyses were controlled for selection bias by using a conservative methodological approach: covariates, fixed-effects model and propensity score adjustment with an overall result that raises the probability of finding causal relationships. This was undertaken due to concerns that the selection processes, rather than SE status, could influence the relationship between SE and bullying, and in light of the recent plea for more conservative statistical approaches when handling possible selection bias in SE studies using observational data (Dempsey, Valentine, and Colyvas 2016; Kvande et al. 2019; Morgan et al. 2010).

### *Do students receiving SE in Norwegian mainstream schools have a greater likelihood of being bullied than their peers?*

To begin with, the relationship between SE status and the likelihood of students being bullied by peers was examined without incorporating any confounders (i.e. background characteristics).

For our second step, in addition to incorporating relevant confounders, we included a *fixed-effect model* and *propensity score matching* (Rosenbaum and Rubin 1984).

**Fixed-effect model:** Since students from the same school are exposed to the same school environment, and their families are likely to come from the same or similar socio-economic level of society, they are more likely to be similar to each other as compared with students from other schools. Students from the same school may, therefore, have a more comparable probability of being bullied as compared with each other rather than with students at other schools. To control for the unobservable differences between schools, we conducted analyses by studying the relationship within each school (within-group variation) rather than between different schools

**Table 1.** Summary of means, range, standard deviations, and % of complete data coverage (N = 2756).

Main variable	M(SD)%	Range	% covered	Items/ alpha	Source
SE status	8.5		91.8		
Bullied	3.7		12.9		
Type of LBDs					
Hearing and vision difficulties	1.1		13.1		
Behaviour difficulties	4.5				
Specific learning difficulties	8.7				
General learning difficulties	2.3				
<i>Cofounding variables</i>					
Boys	47.3		94.1		
Mother's education					
Lower secondary school	2.3		55.9		
Upper secondary school	16				
Higher education 1–3 years	15.5				
Higher education over 3 years	22.1				
Father's education					
Lower secondary school	2.4		51.8		
Upper secondary school	17.2				
Higher education 1–3 years	14.6				
Higher education over 3 years	17.5				
Minority background					
Norwegian background	83.8		83.8		
Non-western background	4.1				
Western background	1.2				
<i>Supplementary variables for propensity matching of SE</i>					
Relation to the teacher	45.8 (7.6)	14–56	95.0	14/.88	Eccles and Midgley (1989); Eccles et al. (1993); Moos and Trickett (1974); Ogden (1995); Sørli and Nordahl (1998); Nordahl (2000, 2005)
Self-control	28.3 (6.5)	9–36	87.2	9/.95	Gresham and Elliott (1990, 2008); Ogden (1995)
Empathy	10.6 (2.9)	4–16	86.8	4/.86	
Assertiveness	22.7 (5.4)	8–32	87.9	8/.91	
Adaptation to school norms	28.3 (6.1)	9–36	89.6	9/.95	
Motivation and work ethic	11.4 (2.7)	3–12	88.0	3/.95	Skaalvik (1993)
Students' academic achievement (Average of Norwegian, mathematics and English)	11.9 (3.2)	3–18	86.0	3/.89	Gresham and Elliott (1990)
Attitude towards and support for education	15.2 (1.3)	4–16	56.3	4/.73	Sørli and Nordahl (1998); Epstein (2009)
Parents' involvement in homework	10.2 (1.6)	3–12	56.3	3/.75	
Contact with the school	23.6 (4.2)	8–32	56.2	8/.86	
Dialogue and involvement in child's education	21.8 (4.4)	9–36	56.4	9/.80	
Influence and collaboration with the school	15.2 (2.4)	5–20	55.7	5/.68	
Relation to other parents in the class	17.3 (4.0)	7–28	56.2	7/.88	

(between-group variation). Our estimates thus reflect the average estimate for each school.

**Propensity score matching:** When making causal inferences from observational data, whereby a subgroup of those observed experience some kind of 'treatment' (e.g. SE) without random assignment, propensity score matching is a good choice (Hill and Reiter 2006). Using logistic regression, with SE as the dependent variable, and the variables (defined in Table 1) as predictors, this method estimates the probability of each student receiving SE. The results of this analysis assign a probability of 0–100% of receiving SE to each student. This probability index was then used as a covariate to adjust the

results when the final analysis was completed. The results are therefore reported on the assumption that probability remained constant for all students.

### ***Does the likelihood of being bullied depend on the type of LBD a student has?***

For our second research question, we estimated the association between being bullied and different types of LBDs. As with our first research question, we examined this relationship using a multinomial logistic regression analysis. Analyses related to this research question were examined by including covariates as well as fixed-effect model.

### ***Missing data***

Because of attrition, not answering parts of the questionnaires, or because other participants (i.e. teachers or parents) did not answer questions about a student, there were missing data for some participants. While missing data for students and teachers was less than 14% for all items at T1, that from parents was more substantial, varying around 44% (for an overview of all variables, see [Table 1](#)). As a result of missing data, we used multiple imputations (MI), a best practice recommendation for handling moderate to large amounts of missing data (Schafer and Graham 2002). MI replaces each missing data point with a set of ( $m > 1$ ) plausible values, thus creating complete datasets ( $m$ ). Using MI, we constructed 10 complete datasets based on the covariates indicated in [Table 1](#). This gave us a full dataset for 2834 students that combined observed and imputed values.

## **Results**

### ***Descriptive analyses***

[Table 1](#) presents the descriptive statistics. The percentage of students receiving SE was 8.5% and there were more boys than girls (11.4% boys, 5.0% girls). A total of 3.7% of the students said they were bullied by peers. There were, however, group differences. In total, 10.7% of students receiving SE were bullied by peers, while only 2.5% of students who were not receiving SE were bullied. Similarly, boys were more often bullied by peers compared with girls (boys = 4.5% and girls = 3.2%). As can be seen in [Table 1](#), most factors had high or adequate internal consistency.

### ***Results from multinomial logistic regression analysis of the relationship between SE status and the likelihood of being bullied***

Our first analyses were multinomial logistic regression analyses to examine how SE status is related to the likelihood of students being bullied by their peers. SE was entered as an independent variable and being bullied was included as a dependent variable. Analyses were done in two steps, improving on the measured covariate approach used in the majority of previous studies.

The first column in [Table 2](#) shows the results of a simple comparison (unadjusted model) of students with and without SE. The results of our non-adjusted analyses showed a significant relationship with an odds ratio (OR) of 4.47, indicating that

students receiving SE were at a higher risk of being bullied than students not receiving SE.

When more conservative methodological approaches were applied, however, the results changed. In the adjusted model, where covariate adjustment, fixed-effects model and propensity score adjustment were used, the relationships were reduced to a non-significant association.

### **Results from multinomial logistic regression analysis of the likelihood of being bullied based on the type of LBD**

For our second research question, we estimated the likelihood of being bullied based on the type of LBD a student presented. Results shown in [Table 3](#) reveal that only two of the four types of LBDs were related to an increased likelihood of being bullied. Students with *behaviour difficulties* (OR of 5.51) were over five times more likely to be bullied, whereas students with *general learning difficulties* (OR of 3.53) were over three times more likely to be bullied. Students with *specific learning difficulties* or *hearing and vision difficulties* were not more likely to be bullied as compared with TD students.

## **Discussion**

This study addressed two research questions. The first investigated whether receiving SE increased the likelihood of a student being bullied, using conservative methodological approaches to control for possible covariate bias. Our initial results were consistent with previous findings (e.g. Bear et al. 2015; Blake et al. 2012; Farmer et al. 2012; Rose et al. 2015; Twyman et al. 2010), whereby students receiving SE were overrepresented in bullying situations compared with TD students. However, possible bias effects needed to be properly controlled for in order to validate these findings. When conservative methodological approaches were used to control for possible covariate bias, the major finding was that students receiving SE were not significantly more likely to be bullied. Yet, before including covariates, we found a relatively increased likelihood that these same students receiving SE were bullied. Our results support the few studies (e.g. Morgan et al. 2010; Sullivan and Field 2013; Dempsey, Valentine, and Colyvas 2016; Keslair, Maurin, and McNally 2012) that have addressed potential selection effects when the effects of SE are investigated.

In general, previous studies have found that students receiving SE are more prone to producing poorer school results or, in our case, being bullied. However, when conservative methods of control are used, this finding vanishes. This indicates that the increased likelihood of being bullied is not due to SE per se, but perhaps additional underlying

**Table 2.** Prediction of bullying based on SE status.

Predictor	Unadjusted model OR (95% CI)	Adjusted model OR (95% CI)
No SE (reference group)		
SE	4.47*** (2.79–7.20)	0.91 (0.40–2.10)

Note: Estimated odds ratios for being bullied based on receiving SE or not. Adjusted models: control for selection bias by using covariates, fixed-effects model, and propensity score adjustment.

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

**Table 3.** Prediction of being bullied based on the type of LBD.

Predictor (type of LBD)	Behaviour difficulties OR (95% CI)	Specific learning difficulties OR (95% CI)	General learning difficulties OR (95% CI)	Hearing and vision difficulties OR (95% CI)
Likelihood of being Bullied	5.51*** (2.89–10.50)	0.78 (0.34–1.77)	3.53** (1.39–8.94)	0.96 (0.12–7.71)

Note: Estimated odds ratios for being bullied based on the type of LBD. All analyses are controlled for selection bias by controlling for background variables; gender, mother's and father's education, minority background, and student's age, in addition to the fixed-effects model.

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

factors. These findings may indicate that peers of students receiving SE may not be as preoccupied with where SE takes place as initially assumed, but rather the type of LBD their peers have. This alone calls for greater attention to be paid to types of LBDs in bullying situations and underlying reasons for bullying.

Our second research question attempted to expand on whether it is possible that characteristics other than receiving SE result in students being bullied more or less frequently. We, therefore, attempted to find out whether or not the type of LBD could predict the likelihood of being bullied. More specifically, we examined whether the following types of LBDs predicted the likelihood of being bullied: Behaviour difficulties, Specific learning difficulties, General learning difficulties, Hearing and vision difficulties.

Our results revealed that students with behaviour difficulties and general learning difficulties were more likely to be bullied, whereas students with specific learning difficulties or hearing and vision difficulties did not have a greater likelihood of being bullied as compared with their peers. These findings support what Swearer et al. (2012) found, in that students with behavioural disorders reported the highest frequency of victimisation as compared with TD students, as well as other LBDs. This is an interesting finding within the Norwegian context, where this group of students are also the most frequently referred for assessment for SE (Haug 2014).

Possible explanations for these findings could be that behaviour and general learning difficulties are those most 'visible'. In other words, other students can see these difficulties, making them easier to target than, for example, hearing/vision difficulties or specific learning difficulties that are more 'hidden'. Another possible explanation is that these groups may struggle in social situations due to them misinterpreting behaviour or social cues (Schroeder et al. 2014). These students may not understand how to approach peers, which in turn could elicit negative responses, including victimisation (Øksendal et al. 2019).

Together, these findings point to the importance of creating positive peer relations as part of inclusion efforts. It seems that TD students are not necessarily preoccupied with whether or not their peers are receiving SE, but rather their reason for receiving SE and perhaps behaviours they present, making them stand out. This shows that physical inclusion may not be enough to create a sense of belonging for all students.

### Limitations

Despite its strengths, it is important to consider the shortcomings of this research. To begin with, even though the term bullying is not unfamiliar to students of this age group since they are exposed to it annually (UDIR 2021a), our decision not to include

it in our questionnaire means that we do not know for certain that all students defined bullying in the same way. This study also only measures the effect of SE over the course of one school year. It, therefore, does not provide information about the possible long-term effects of SE. What is more, no information was gathered on how long students had been receiving SE or how often they were bullied. Students receiving SE over a longer period may develop differently to students receiving SE for only one year, for example. Replicating this study and following students over a longer period will help to create a more complete overview of the situation. Another way to have gained a more in-depth overview and add substance to our statistical findings would have been to capture more of the student voice. This would include hearing more from those who are bullied, but also those who bully.

Another limitation is the somewhat low recruitment of parents (57%) for this study which may have resulted in selection bias. In particular, disadvantaged families may be underrepresented. However, best practice recommendations for handling longitudinal studies with missing participant data values were followed (Widaman 2006). In addition, the impact of such bias may be reduced in Norway, where high-quality social services provided by the government exist – minimising variation among families.

Finally, despite using a range of statistical approaches, as well as more conservative methods to control for potential selection bias, it is not possible to be completely sure that individual heterogeneity and reverse causality problems were removed. We, therefore, encourage future research to replicate estimates using different samples and methods. We also encourage the inclusion of a larger range of LBDs than those we chose to cover, including for example, internalising behaviour difficulties, and autism, as well as hearing and vision difficulties in their own categories as well as others. Producing results based on individual LBDs would also be beneficial to understand how SE may affect students with particular LBDs – This requires a larger sample, ideally a population study, to generate reliable findings. In addition, the group with hearing/vision difficulties was small (about 30 students), which could have led to our findings of a non-significant relationship.

## Conclusion

Despite its limitations, this study provides important findings. Namely, new insights into the need for more rigorous methods of looking at the effects of SE and types of difficulties. When using conservative methodological approaches to control for possible covariate bias, our results did not indicate that students receiving SE were more likely to be bullied than their TD peers. This may indicate that there are important factors to consider when conducting research on SE.

Our results point to significant findings about how students are included in Norwegian classrooms. Although the physical inclusion of students is imperative, their sense of belonging is just as important. Our findings suggest that there is a need for greater focus on those who may be physically included by being present in the classroom but excluded in social situations. One possible explanation for our findings could be that TD students are not preoccupied with how or where their peers receive their education, but instead perhaps how they behave and their social functioning.

The results of the present study invite investigation into how schools can focus more on inclusion and be more open-minded to differences. This may include incorporating inclusion as a theme throughout the school year, or assigning ‘friend groups’, in which students are encouraged to rotate who they spend break times with so that each student has the opportunity to socialise with all students in their class. These groups could also be encouraged to meet outside of school, for example, by visiting each other at home or finding a shared activity. In this case, close collaboration between home and school will be necessary. Our findings invite further studies to address factors that may explain why students receiving SE are bullied more often when less conservative methods of analysis are used, to better understand this group. The fact that we found students with behaviour and general learning difficulties to be more likely to be bullied also indicates that there are specifically vulnerable groups, and this needs to be examined further. Our findings encourage teachers, leaders, researchers and policy makers to focus on why some students are more exposed to bullying than others and how these students can be better included.

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