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How disability type, gender, and home language influence students' placement in inclusive or separate class settings

Sabrina Temel ^{a,b}, Barbara Gasteiger-Klicpera ^{a,b} and Mario Steiner ^c

^aDepartment of Education Research and Teacher Education, University of Graz, Graz, Austria; ^bResearch Center for Inclusive Education, Graz, Austria; ^cInstitute for Advanced Studies, Vienna, Austria

ABSTRACT

Although educating students with and without disabilities in one classroom is not proof of an inclusive school system, it is at least a significant first step towards inclusive education and improved student participation. This study focuses on the allocation of inclusive or separate class settings for students with various types of disabilities. It also evaluates to what extent gender and home language are connected to type of schooling. A survey of all students with special educational needs (SEN) in Austria ($N = 26,102$) was conducted, of which for some analyses a partial sample ($n = 20,120$) was used. Types of disabilities covered were: (1) students with behavioural difficulties, (2) students with behavioural difficulties and intellectual disability, (3) students with autism spectrum disorder and (4) students with autism spectrum disorder and intellectual disability. Results indicated that all four groups are more frequently enrolled in separate class settings. Furthermore, female students with autism spectrum disorder and students with autism spectrum disorder speaking a different home language than the language of instruction show a lower likelihood of attending an inclusive class setting. The results indicate that decisions regarding student class allocation are somewhat arbitrary and thus need to be closely questioned.

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Special educational needs; disability; inclusive education; separation; gender; home language

Introduction

In Europe, the Salamanca Statement set the start for the development of inclusive education thirty years ago (United Nations Educational, Scientific and Cultural Organisation 1994). In 2006, the Convention on The Rights of Persons with Disabilities of the United Nations (UN-CRPD) subsequently strengthened efforts towards student inclusion (United Nations 2006). Inclusion entails the elimination of barriers, and the implementation of methods, structures and strategies designed to ensure that all students enjoy an equitable and participatory learning experience, one that matches their needs and preferences (United Nations 2016). Although placing students with and without disabilities

CONTACT Sabrina Temel  sabrina.temel@uni-graz.at  Department of Education Research and Teacher Education, University of Graz, Merangasse 70/II, Graz 8010, Austria

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together in one classroom is no guarantee of an inclusive school system, it is an important initial step to increase inclusion.

The traditions behind the development of a common school learning environment vary from country to country. Some countries have shifted to educating the vast majority of special needs students in general schools (e.g. Italy, Portugal, Sweden, Norway, Finland) while other countries remain relative laggards in this respect (e.g. Germany, Austria) and continue to place a focus on special schools (Moehlen et al. 2025; European Agency for Special Needs and Inclusive Education 2024; Sekretariat der Ständigen Konferenz der Kultusminister der Länder 2024; Sundqvist and Hannås 2021; Alves, Pinto, and Pinto 2020; Buchner and Proyer 2020; Ianes, Demo, and Dell'Anna 2020). Looking at the situation in non-EU countries, it becomes evident that, e.g. in Kosovo legal and pedagogical documents emphasize inclusive education. Also, Serbia as well as Bosnia and Herzegovina have taken legislative steps toward promoting inclusive education (UNICEF Srbija 2022; Horizontal facility for Western Balkans and Turkey 2020; Zabeli, Perolli-Shehu, and Gjelij 2020). Nevertheless, the implementation of inclusive learning remains challenging as teachers frequently do not receive adequate training in inclusive education and access to professional support, which significantly influence teachers' competence and confidence in handling inclusive class settings (Osmani and Stanjokovska-Trajkovska 2024).

In the following paper we distinguish between inclusive class settings, where most students do not have assigned a disability or SEN, and separate class settings, where all students have disabilities or SEN. Although a dual school system still exists in Austria, an increasing effort has been made over the past 30 years to improve school integration and student inclusion. Currently, various forms of inclusive education exist in parallel in the Austrian school system. On the one hand, special schools exist separately from general schools. On the other hand, separate class settings can be found within general schools, while inclusive class settings also exist within special schools. Some special schools in Austria have evolved to Inclusive School Centres, where both small classes for students with special needs and inclusive classes are taught. Students can be taught according to different curricula, that means that in one course (e.g. mathematics) they can follow the special education curriculum and in the other (e.g. sports) the regular curriculum in parallel. Various forms of internal differentiation are implemented in one classroom (Bildungsdirektion Wien 2023; Bundesministerium für Bildung, Wissenschaft und Forschung 2021). In Austria the compulsory school system is divided into primary school (year 1–4), (academic) secondary school (year 5–8) and a further 9th obligatory school year (e. g. polytechnic school). Special schools (year 1–9) also exist besides. Overall, 4.8% of all compulsory school students in Austria were classified as having special needs in the year 2022/23, and around a third of these (37.8%) attended separate class settings (Statistik Austria 2023a). It thus appears that many Austrian students were denied equal participation in an inclusive education system (Art. 24 UN CRPD). Data from European country comparisons show that the integration rate in Austria is approximately in the mid-range. This also applies to the proportion of students with SEN. Despite the variations in reporting standards and regulations, the definitions of disability types are relatively consistent across the countries (Gebhardt and Heimlich 2018).

The relevant Austrian guidelines for the assignment of special needs and the implementation of measures for students with special educational needs (SEN) are

specified in the nationwide Circular No. 7/2019 of the Austrian Federal Ministry of Education, Science and Research. A ‘special educational need’ is said to exist when a child, due to some disability, is unable to follow lessons in the general school setting without special educational support. Disability is defined as a physical, intellectual or mental functional impairment or an impairment of the sensory function, which has lasted for at least six months. There must thus be a causal link between a diagnosed disability and the student’s failure at school. This requires professional assessment by teachers, head teachers, psychologists, educational advisors and diversity managers. The special needs designation is only applied after all general educational options have been ruled out, e.g. preschool attendance or grade repetition. Assessing special needs entails clarification of three key points: (1) identification of the disability (2) definition of the curriculum according to which a student is taught and (3) determination of the school’s location (Bundesministerium für Bildung, Wissenschaft und Forschung 2019).

The Austrian Federal Ministry of Education, Science and Research (Bundesministerium für Bildung, Wissenschaft und Forschung, 2024) specifies ten main kinds of special educational support. Students with behavioural difficulties (BD) are typically educated within the Austrian Curriculum of the special educational school (special school for children with educational difficulties) (2020). Within this legal document, the category ‘special educational need with focus on behaviour’ applies to students with social-emotional disadvantages and/or special educational and teaching needs. Further examination then helps distinguish between internalising (e. g. depression, post-traumatic stress disorder (PTSD), anxiety disorder) and externalising (e. g. attention deficit hyperactivity disorder (ADHD), social behaviour disorder) behavioural difficulties (Roos and Strumann 2022). Autism spectrum disorder (ASD) is diagnosed as a special category, although there is a high comorbidity with BD (Waddington et al. 2018; Joelsson et al. 2016) and intellectual disability (ID) (Seidel 2010; Zeidan et al. 2022; Maenner et al. 2023).

Despite rather clear national regulations, whether students with SEN are placed in inclusive or separate class settings in Austria, the possibility of inclusive schooling in the Austrian federal states varies from 47.3% in Vienna to 83.8% in Styria (Statistik Austria 2023a). It is thus important to identify which factors, in addition to the type of disability, contribute to a student being given the opportunity of inclusive schooling. We can assume that these factors are, besides the type of disability itself, child gender and socio-economic status, as reflected, for example, in parental education and the family’s first language.

Regarding gender, the overrepresentation of male students in SEN classifications is already well known (Daniel and Wang 2023; Arms, Bickett, and Graf 2008; Coutinho and Oswald 2005; Oswald et al. 2003). In Austria the proportion of boys with SEN (64.10%) compared to girls (35.9%) is considerably higher (Mayrhofer et al. 2019), despite the roughly equal gender ratio prevailing among students of compulsory school age (Statistik Austria 2023b). This may be related to the fact that gender differences vary across disability types. Male overrepresentation is particularly prominent during the school years (Daniel and Wang 2023). Males are more likely to show behavioural problems and hyperactivity, while females tend to experience emotional symptoms (Deighton et al. 2019). The prevalence of ASD is higher for males compared to females with a ratio of about 4:1 but drops to 1.95:1 when associated with moderate to severe ID (Daniel and Wang 2023; Talantseva et al. 2023; Zeidan et al. 2022; Elsabbagh et al. 2012; Fombonne 2005;). Despite the overall overrepresentation of boys with SEN, in Austria

the proportion of students with SEN attending general schools differs only slightly regarding gender (61% female; 59% male) (Wimmer and Oberwimmer 2021).

Home language becomes particularly relevant when it differs from the language of instruction. In Austria, insufficient German language skills do not constitute adequate justification for special educational needs status (Bundesministerium für Bildung, Wissenschaft und Forschung 2019). However, this is not implemented this way in practice. Only at the end of the school entry phase (2nd grade), the probability of SEN classification for German speaking children is similar to that for children speaking other languages. In subsequent years, the percentage of students with SEN increases among students with non-German home language (Mayrhofer et al. 2019). However, the percentages of students with SEN enrolled in general schools does slightly differ by home language (58% German speakers; 62% non-German speakers) (Wimmer and Oberwimmer 2021).

While shifting from separation to inclusion is difficult, two paths towards a more inclusive school system seem particularly important, i.e. either one based on a common government policy calling for radical and enforced implementation, as in Portugal (Alves, Pinto, and Pinto 2020), or one based on a relatively slow step-by-step process as is currently being implemented in the UK (Ainscow 2024). Clearly, the potential for, and barriers to, a shift toward greater SEN student inclusion need to be investigated, particularly in those countries where progress continues to be rather slow, such as in Germany or Austria.

Aims and research questions

The present study analyses the relationship between disability type and students' placement in inclusive or separate class settings and examines the connection with gender and home language of students with SEN. The research questions and hypotheses are as follows:

1. Which class setting (inclusive or separate) are students with special educational needs with various types of disabilities (BD, ASD, ID) assigned to?
 - 1.a : We assume that students with behavioural difficulties, autism spectrum disorder and intellectual disability are more likely to be educated in separate class settings compared to students with other types of disabilities.
2. To what extent are gender and home language connected to students' placement in inclusive or separate class settings?
 - 2.a : We assume that male students with behavioural difficulties, autism spectrum disorder and intellectual disability are more likely to be educated in separate class settings compared to girls with these types of disabilities.
 - 2.b : We assume that home language (German/non-German) of students with SEN with various types of disabilities (BD, ASD, ID) has a significant influence on the likelihood of attending either inclusive or separate class settings.

The aim of the present study is thus to determine how various types of disabilities influence whether a student is placed in inclusive or separate class settings and to analyse whether gender (male/female) and/or home language (German/non-German) of students with various types of disabilities influence the likelihood of attending an inclusive or separate class setting.

Method

Design and study sample

The present study was part of the project ‘Evaluation of the identification process of special educational needs (SEN) in Austria’ (Gasteiger-Klicpera et al. 2023) carried out from 2022 to 2023 on behalf of the Austrian Federal Ministry of Education, Science and Research. It represents the first comprehensive evaluation of all students with SEN in Austria, including detailed characteristics for each student. The study followed a quantitative, descriptive research design of primary data collection, aiming to systematically collect, previously undocumented data. A standardized questionnaire – developed and administered in Excel – was used for data collection. In the survey key data such as the region of education, the year of enrolment in school, socio-demographic data (e.g. year of birth, gender, home language – German or non-German), type of disability (e.g. visual/hearing impairment, learning disability, ASD) and information on school progress (e.g. school level/type, class) for each student was collected. Since in Austria we find many different types of separate or inclusive settings, e.g. separate class settings within general schools and inclusive class settings within special schools, this was taken into account. Accordingly, there were four response options regarding the class setting: (1) inclusive class setting in a special school, (2) inclusive class setting in another school, (3) separate class setting in a special school, (4) separate class setting in a another school. Prior to this study, there was no comprehensive data available regarding the relationship between different types of disabilities and the assignment of students to inclusive or separate class settings in Austria. The responses were provided by the diversity managers, part of the school administration and responsible for students with SEN in Austria. The survey was conducted from January to March 2023.

The study sample comprised all students with SEN in Austria (as of October 1st, 2022) in general compulsory education (primary schools, secondary schools, academic secondary schools, polytechnic schools, special schools) which typically serves students aged 6 to 15. Some of the students in this survey are older because grade repetition is frequent due to SEN. In the original data collection, the German term “Umgangssprache” was used. We translated this term as “home language”, referring to the language most frequently spoken within the family and in daily life.

In total, the sample included 26,102 students with SEN (female = 9,468, non-German = 11,328). Although this represented 12.6% ($N = 2,199$) fewer students with SEN than those shown in the school statistics (Statistik Austria 2023a), the difference remains within the usual variations found in statistical surveys. The difference is slightly higher for female than for male students with SEN and slightly higher for students with SEN and a non-German home language (Pessl and Steiner 2023).

The average age was 12.8 years ($SD = 2.51$; Min = 6; Max = 20). For some of the analyses in this study we used the sample ($n = 20,120$) of those students for whom information regarding the attendance of an inclusive or separate class setting was available. One federal state of Austria (Vienna, $n = 5,375$) could not provide this information. This group therefore had to be excluded from the analysis completely. In other federal states the relevant data was missing for a small minority (e.g. for 331 students out of 5,048 in Upper Austria, for 134 out of 1,409 in Carinthia, and for 54 out of 1,210 in

Tyrol) (Pessl and Steiner 2023). Since the study involved the analysis of anonymous data from the school administration, ethical approval was not necessary.

We focused on four types of disabilities and combinations of disabilities: students with behavioural difficulties, students with behavioural difficulties and intellectual disability, students with autism spectrum disorder, and students with autism spectrum disorder and intellectual disability (Table 1).

It is also necessary to note that in Vienna, only the most significant disability type per student was reported in the survey, whereas other federal states may have reported more than one disability per student. For more details regarding sociodemographic data and types of disabilities please refer to the project report (Pessl and Steiner 2023).

To ensure the reliability and validity of the study, several measures were taken: (1) a standardised questionnaire with clear wording and explanations was created to reduce variation and ambiguity, (2) the questionnaire was discussed with the entire research consortium consisting of more than 20 researchers and revised several times, (3) the questionnaire was pre-tested by selected diversity managers and school quality managers to eliminate misunderstandings, (4) the research team was available for the coordinators from each federal state for answering questions and in most states the coordinators controlled the validity of the data and (5) convergent validity was verified by external data (Statistics Austria, Austrian Federal Ministry of Education, Science and Research).

Data analysis

Apart from the introduction of unintended characteristics or the use of alternative terms, input errors also arose as some diversity managers had to fill out the Excel forms for several hundred students. Data cleaning comprised two steps: firstly, easily identifiable errors were corrected, and secondly, plausibility checks were carried out using cross-tabulations and the data was then cleaned accordingly. An example of an easily identifiable error would be of a specified value range not being adhered to or new values being used. Plausibility checks entailed questioning such things as whether the year of school enrolment was plausible in relation to the year of birth, or whether the school level matched the school attended. The cleaned data set contained 26,102 cases, of which, for reasons stated above, 20,120 were used for some of the subsequent analyses.

Table 1. Types of disabilities and combinations of disabilities covered.

	<i>n</i>	%
Type 1: students with BD	3,311	12.68
This type refers to all students having at least BD. Additional comorbidities could apply.		
Type 2: students with BD and ID	590	2.26
This type refers to all students having at least BD and ID in combination. Additional comorbidities could apply.		
Type 3: students with ASD	1,481	5.67
This type refers to all students having at least ASD. Additional comorbidities could apply.		
Type 4: students with ASD and ID	677	2.59
This type refers to all students having at least ASD and ID in combination. Additional comorbidities could apply.		

Note. BD = behavioural difficulties. ID = intellectual disability. ASD = autism spectrum disorder.

The dependent measure for this study was the class setting currently attended. We used gender (male/female), the home language (German/non-German) and type of disability as independent measures. Nine different types of disabilities could be entered in the Excel sheet (multiple answers were possible). For our analyses we focused on three types of disabilities (behavioural difficulties, autism spectrum disorder, intellectual disability). Research shows that students with behavioural difficulties, autism spectrum disorder and intellectual disability are at high risk for exclusion and more frequently placed in separate class settings (Anderson, Brock, and Shawbitz 2022; Buchner and Proyer 2020; Simpson and Mundschenk 2012)

Data analysis consisted of two steps. First, we conducted Chi-squared tests to explore (1) whether there is an association between type of disability, gender and home language and (2) whether the type of disability was associated with the class setting. Second, we conducted logistic regression analyses to test the predictive effects of the variables.

Results

Distribution of gender and home language

In the initial stage of analysis we compared the distribution of gender (male/female) and home language (German/non-German) in each group of disability and combination of disabilities (Table 2).

As a next step, we conducted Chi-squared tests to investigate the association between gender and home language. Regarding gender, all tests showed a significant association. Males were significantly overrepresented in all four groups, (1) students with BD ($\chi^2(1) = 553.241$, $p < .001$, $\phi = -.146$), (2) students with BD and ID ($\chi^2(1) = 20.300$, $p < .001$, $\phi = -.028$), (3) students with ASD ($\chi^2(1) = 257.254$, $p < .001$, $\phi = -.099$) and (4) students with ASD and ID ($\chi^2(1) = 101.811$, $p < .001$, $\phi = -.062$).

Table 2. Distribution of gender and home language.

	<i>n</i>	%
Type 1: students with BD	3,311	12.7
Female	593	6.3
Male	2,718	16.3
German	2,564	17.4
Non-German	736	6.5
Type 2: students with BD and ID	590	2.3
Female	162	1.7
Male	428	2.6
German	387	2.6
Non-German	203	1.8
Type 3: students with ASD	1,481	5.7
Female	249	2.6
Male	1,232	7.4
German	809	5.5
Non-German	669	5.9
Type 4: students with ASD and ID	677	2.6
Female	121	1.3
Male	556	3.3
German	306	2.1
Non-German	370	3.3

Note. % = column-by-column (within gender/language). BD = behavioural difficulties. ID = intellectual disability. ASD = autism spectrum disorder.

Concerning home language, German speakers were overrepresented in the group of students with BD ($\chi^2(1) = 689.592$, $p < .001$, $\phi = -.163$), and in the group of students with BD and ID ($\chi^2(1) = 20.225$, $p < .001$, $\phi = -.028$). However, in the group of students with ASD and ID students with non-German home language were overrepresented ($\chi^2(1) = 35.762$, $p < .001$, $\phi = .037$). No statistically significant association was found in the group of students with ASD.

Differences between the four groups of disabilities in attending inclusive or separate class settings

The distribution of the four groups across inclusive and separate class settings showed a very clear pattern (Figure 1). Slightly more than half of the students with BD (55.5%) attended an inclusive class setting compared to 70.2% of students without BD. Similarly, 69.3% of students without ASD attended an inclusive class setting in comparison to 46.8% of students with ASD. Furthermore, regarding a comorbidity with ID the difference is far larger. Only 22.9% of students with BD and ID and 22.2% of students with ASD and ID attended an inclusive class setting, while nearly 70% of students without such combination of disabilities attended inclusive classes.

Chi-squared tests showed significant associations for all four groups: students with BD ($\chi^2(1) = 264.985$, $p < .001$, $\phi = -.115$) and students with ASD ($\chi^2(1) = 274.632$, $p < .001$, $\phi = -.117$) attended an inclusive class setting less often than those without such disabilities. For students with BD and ID ($\chi^2(1) = 500.653$, $p < .001$, $\phi = -.158$), and for students with ASD and ID ($\chi^2(1) = 641.503$, $p < .001$, $\phi = -.179$), the differences are much more marked. Students having ID in addition attend an inclusive class setting far less often than those without this disabilities (see Figure 1).

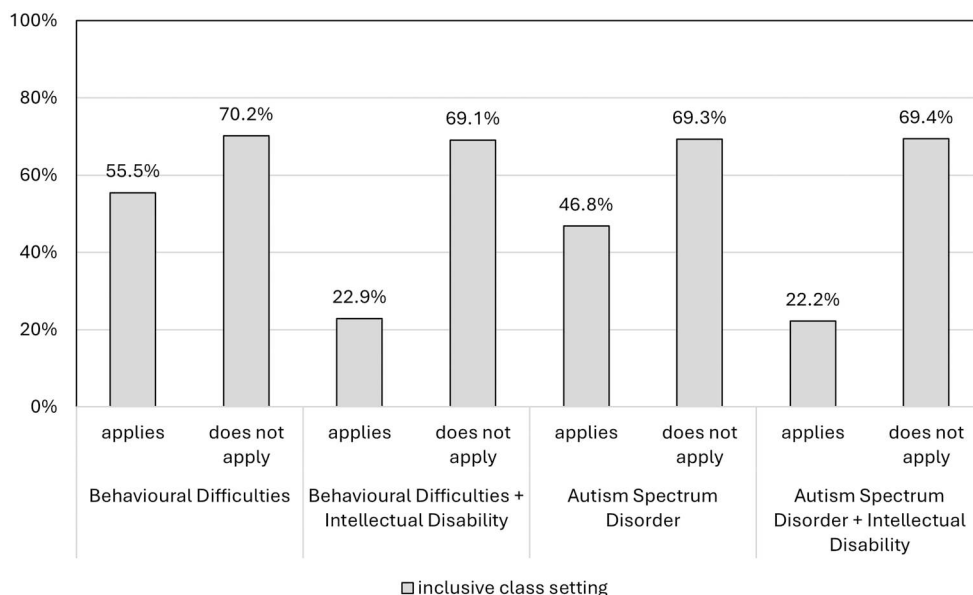


Figure 1. Differences among students with and without different types of disabilities attending an inclusive class setting.

To assess the impact of (1) students with BD, (2) students with BD and ID, and (3) students with ASD, on the likelihood of attending an inclusive class setting, a logistic regression analysis was conducted. In order to reduce the adverse impact of multicollinearity, only three disability groups were chosen here.

The relationship was significant for all three groups. Compared to students not having the respective disability, for students with BD the likelihood of attending an inclusive class setting is 26.4% lower ($OR = .736$, $p < .001$, $95\%CI = 0.675$ to 0.803), for students with ASD the likelihood is 51.9% lower ($OR = .481$, $p < .001$, $95\%CI = 0.427$ to 0.543), and for students with BD and ID the likelihood is 80% lower ($OR = .202$, $p < .001$, $95\%CI = 0.162$ to 0.251).

Speaking more precisely, for students without BD the likelihood of attending an inclusive class setting is 1.4 times higher, for students without ASD it is twice as high, and for students without having BD in combination with ID, it is 5 times higher (Table 3) than for those having these types of disabilities or combinations of disabilities.

Association of gender and home language with attending inclusive or separate class settings

To test the predictive effects of gender and home language on the likelihood of attending an inclusive class setting, logistic regression analyses were carried out for each of the four groups: (1) students with BD, (2) students with BD and ID, (3) students with ASD and (4) students with ASD and ID. Within the group of students with ASD, gender and home language were significantly related to the likelihood of attending an inclusive class setting. Female students with ASD were 30% less likely ($OR = 0.70$, $p = .018$, $95\%CI = 0.520$ to 0.942) to attend an inclusive class setting compared to male students with ASD. Similarly, for students with ASD and a non-German home language, the likelihood of attending an inclusive class setting is nearly 30% lower ($OR = 0.72$, $p = .004$, $95\%CI = 0.572$ to 0.896) compared to ASD students who speak German as a home language. This also means that male students with ASD and German speaking students with ASD have a 1.4 higher likelihood of attending an inclusive class setting. Within the three other subgroups, students with BD, students with BD and ID, and students with ASD and ID, no significant result was found. In fact, gender and home language mainly did not have any impact on the likelihood of attending an inclusive class setting for these three groups of students (Table 4).

Table 3. Logistic regression analysis predicting the likelihood of attending an inclusive class setting for students with BD, students with ASD and students with BD and ID compared to students not having these types of disabilities or combinations of disabilities.

	β	SE	Wald	p	95% CI for Odds Ratio (OR)		
					Lower	OR	Upper
BD	-0.306	0.044	48.263**	< .001	0.675	0.74	0.803
BD + ID	-1.601	0.112	202.640**	< .001	0.162	0.20	0.251
ASD	-0.731	0.061	142.796**	< .001	0.427	0.48	0.543
Constant	0.892	0.017	2706.479**	< .001		2.44	

Note. Blockwise regression. SE = Standard Error. CI = Confidence Interval. BD = behavioural difficulties. ID = intellectual disability. ASD = autism spectrum disorder. Degrees of freedom were 1 for all Wald statistics; $R^2 = 0.033$ (Cox-Snell), 0.046 (Nagelkerke). ** $p < .001$

Table 4. Logistic regression analysis showing the impact of gender and home language on the likelihood of ASD students attending an inclusive class setting.

	β	SE	Wald	p	95% CI for Odds Ratio (OR)		
					Lower	OR	Upper
Students with ASD							
Gender (female)	-0.357	0.151	5.561*	.018	0.520	0.70	0.942
Language (non-German)	-0.334	0.115	8.490*	.004	0.572	0.72	0.896
Constant	0.770	0.251	0.002*	.002		2.16	

Note. Blockwise regression. SE = Standard Error. CI = Confidence Interval. ASD = autism spectrum disorder. Degrees of freedom were 1 for all Wald statistics. $R^2 = 0.000$ (Cox-Snell), 0.001 (Nagelkerke). * $p < .05$.

Discussion

The present study aims (1) to examine the assignment of students with various types of disabilities in inclusive or separate class settings, and (2) to analyse whether gender (male/female) and/or home language (German/non-German) is connected to the likelihood of attending an inclusive vs. separate class setting. The survey collected data covering all students with SEN in Austria ($N = 26,102$), but data on class setting was not available in some federal states. Therefore, some analyses were based on a partial sample ($n = 20,120$).

With regard to gender, this study showed that, compared to females, males were significantly overrepresented in all four groups analysed, in (1) students with BD, (2) students with BD and ID, (3) students with ASD and (4) students with ASD and ID. This result is in line with previous research and reflects the higher prevalence of externalised disorders in boys as well as the tendency to include boys more easily in special support programmes (Daniel and Wang 2023; Arms, Bickett, and Graf 2008; Coutinho and Oswald 2005; Oswald et al. 2003).

Regarding language, the analysis showed that there are significantly more students with German as their home language within the group of BD students and within the group of students with BD and ID. In contrast, there is an overrepresentation of non-German speaking students within the group of students with ASD and ID. No difference could be found within the group of students with ASD. In fact, this shows that the home language of students with ASD is important if an ID is additionally assigned to them. In Austria, even though language problems are officially recognized as providing no justifiable basis for SEN allocation (Bundesministerium für Bildung, Wissenschaft und Forschung 2019), a disproportionately high percentage of students not using German as their home language are classified as having SEN (Pessl and Steiner 2023; Mayrhofer et al. 2019). The potential for discrimination becomes even more clear when further types of disability are examined. For example, by classifying few language competence as a learning disability, schools may be able to gain access to additional resources, an effect which has been criticised by various authors (Ainscow 2024). Regarding ASD on its own, there seem to be no difference between the language groups since this diagnosis requires very clear criteria. However, in combination with ID, linguistic competence and the allocation of resources once again becomes significant. Poor language skills or nonverbal communication appear to raise the probability of an ID diagnosis. That means, a child with ASD speaking another homelanguage than the language of instruction could be more likely assigned with ID because of higher support needs.

Furthermore, the evaluation showed that all students from the four groups analysed, are significantly more likely to be educated in separate class settings compared (1) to the sample of 20,120 students with SEN in Austria and (2) to students with SEN not having these types of disabilities or combinations of disabilities. Within the overall sample, 67.9% of all students with SEN in Austria were educated in inclusive class settings (Pessl and Steiner 2023). In comparison, about half of the students with BD (55.5%) and students with ASD (46.8%) attended inclusive class settings. The percentage is even lower when ID has been additionally diagnosed to BD or ASD. More than three quarters of students with BD and ID (77.10%) and students with ASD and ID (77.8%) attended separate class settings. Compared to the other students without these disabilities, a much lower proportion ($\approx 30\%$) attended separate class settings. Logistic regression analysis showed that the likelihood of attending an inclusive class setting is significantly lower for the three groups (1–3). For students with BD the likelihood is about one quarter lower, for students with ASD the likelihood is 50% lower, and for students with BD and ID the likelihood is 80% lower compared to students not having assigned these type of disabilities or comorbidities. In this regard, the hypothesis (1.a) can be confirmed.

Although it is well known that students with ID in inclusive class settings make equal or slightly better progress in learning the majority of students with ID are taught in separate class settings (Sermier Dessemontet, Benoit, and Bless 2015; Cole, Waldron, and Majd 2004; Katz and Mirenda 2002; Freeman and Alkin 2000). Even though the empirical evidence indicates that inclusion of students with disabilities often has no negative impact on other students (for Down's syndrome see Turner, Alborz, and Gayle 2008; Laws, Byrne, and Buckley 2000), attempts to change separate schooling remain minimal (Sermier Dessemontet, Benoit, and Bless 2015; McDonnell et al. 2003; Sharpe, York, and Knight 1994). Inclusion of students with behavioural or emotional difficulties also appears beneficial, although providing empirical evidence here remains challenging (Ellinger and Stein 2012). Anyway, regardless of the type of disability, studies show that the performance of special needs students is better in inclusive settings compared to their performance in separate settings (Kocaj et al. 2014; Lindsay 2007; Myklebust 2002).

The influence of gender and home language on the likelihood of attending an inclusive class setting was only found to be significant for students with ASD. For female students with ASD (compared to males with ASD) and for non-German speaking students with ASD (compared to German speaking students with ASD) the likelihood of attending an inclusive class setting was about 30% lower. Female students with ASD not speaking German as their home language are more likely placed in separate class settings, even though male students with ASD were overrepresented in this sample. For the overall sample, the likelihood of attending an inclusive class setting increases for female students or for non-German language speaking students (i. e. students speaking a different home language than the language of instruction) regardless of disability (Pessl and Steiner 2023). Although the percentages of students with SEN enrolled in general schools differs only slightly by gender and home language, girls and students with non-German home language are more likely to attend inclusive class settings, as also the National Education Report says (Wimmer and Oberwimmer 2021). Research indicates that teachers' perceptions of ASD-related behaviours can be influenced by the student's gender. For example, girls with ASD are often perceived more positively regarding their

social behaviour than boys (Nah and Tan 2021). Such perceptions may impact placement decisions, as more negative views could potentially result in a more segregated setting. The combination of ASD and speaking a different home language than the language of instruction tends to be more complex. Students with ASD often face challenges in social communication (American Psychiatric Association 2013), and combined with limited skills regarding the language of instruction, these difficulties may hinder inclusion. So, while disability, gender and language may influence class allocation, when they occur in combination, the direction of the influence is not always clear.

No significant result could be found in the groups of students with BD, students with BD and ID, and students with ASD and ID regarding gender and home language. This means that regarding these three types of disabilities and combinations of disabilities, in terms of gender and home language, segregation is not reinforced. With regard to the results the hypotheses (2.a & 2.b) can be confirmed for students with autism spectrum disorder. They must be rejected for students with behavioural difficulties, for students with behavioural difficulties and intellectual disability and for students with autism spectrum disorder and intellectual disability.

The findings of the study point out the disproportionately segregation of students with BD and ASD (especially those with comorbid ID). Furthermore, female students with ASD and students speaking a different home language than language of instruction with ASD show a lower likelihood of attending an inclusive class setting. This gives rise to the theory of intersectionality, which emphasizes the simultaneous interaction of multiple identity markers in shaping social experiences and demonstrates how certain identity groups face exclusion while others benefit from inherent privileges (Cooper 2016; Nash 2008; Crenshaw 1989). Within the context of inclusive education, intersectionality highlights that marginalized students often encounter multiple, overlapping forms of discrimination that operate not only at the individual level but also within institutional structures. Combining intersectionality with inclusion facilitates a nuanced identification of discriminatory processes and the development of effective educational approaches that address the needs of all students (Bešić 2020).

In fact, serious equity concerns about access to inclusive education can be raised. From the perspective of Critical Disability Studies, this exclusion is not understood as an individual deficit but rather as the result of societal and institutional power structures. Disability is viewed not solely as a medical issue but as a socially constructed phenomenon that arises from normative expectations regarding behaviour, performance, and conformity (Goodley 2014; Titchkosky 2011). Selection mechanisms are deeply rooted in educational-historical traditions (Pfahl and Powell 2011) and there is a need for critical reflection and change of the structural conditions in the education system (Ainscow 2024). It is therefore highly suggested that these students should have access to the same opportunities for (social) inclusion as their peers without or with other disabilities as is requested by international conventions (UN-CRPD).

Overall, the results suggest that the allocation of school settings is not always based on objective criteria and that the manner of separation is not very transparent. In principle, we can draw two lines of consequences from the study. One aims at a better diagnostic professionalization of the teachers and experts making the decisions on the placement of students with SEN. Although in Austria the parents are formally responsible for this decision, their decision is highly dependent on the options available and the counselling they receive.

The other consequence could be drawn from the result that while there are general tendencies to educate certain students either inclusively or separately, all students can learn in one setting or another. In summary, this means that the type of disability could actually have no significance, but rather represents a somewhat artificial characteristic of separation. If we draw the consequences from this, an inclusive education system should be possible for all students. All obstacles being discussed have little real foundation in the disabilities of the students. Thus, what is needed for the development of an inclusive school system is not simply more precise allocation criteria or more comprehensive regulation but rather the provision of an educational environment that welcomes and supports all students equally.

Limitations

Although the sample investigated was large and quite comprehensive, a few limitations still need to be taken into account. Time constraints meant that comprehensive quality assurance processes could not always be implemented. Survey data was first entered on an Excel sheet. This was then reviewed by representatives from all federal states, and their feedback was collected. However, it became evident during data collection that certain state-specific or unique aspects had not been fully incorporated. The following limitations need to be emphasized:

- (1) Some diversity managers had to complete the Excel form for hundreds of students, thus increasing the likelihood of input errors.
- (2) In Vienna, we could not obtain information on the class setting, i.e. whether students were taught in inclusive class settings or not.
- (3) In Vienna, only the primary type of disability was reported by the data collectors, but in the other federal states multiple disabilities were recorded in the survey.

Another limitation of the study is the lack of review by the ethics committee of the University of Graz. As the study was carried out in close cooperation with the Ministry of Education, the data protection regulations were checked by the Ministry. The data were collected by the diversity managers in the countries with great care, taking into account the data protection regulations of the federal states, and only the collected and anonymized data were provided to us, from which no conclusions could be drawn about individuals. Further details on specific aspects of the study can be found in the project report, specifically on pages 19–20 (Gasteiger-Klicpera et al. 2023).

We used DeepL (2025) for translating some words and sometimes ChatGPT (OpenAI 2025) to formulate English sentences. For the literature search we used Scopus AI (2025).

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Notes on contributors

Sabrina Temel is a University Assistant at the Department of Education Research and Teacher Education at the University of Graz in Austria. Her research focuses on the field of inclusive education and in particular on the evaluation of the identification process of special educational needs in Austria.

Barbara Gasteiger-Klicpera is Professor for Inclusive Education and Head of the Department of Inclusive Education and Special Educational Psychology at the University of Graz. She is founder and part of the steering committee of the Research Centre for Inclusive Education. Her research focuses on inclusive school and classroom development, diagnostics and intervention for children with reading difficulties, diversity and health literacy as well as interventions for children with emotional and social difficulties.

Mario Steiner is Head of Research Group 'Educational Structures and Educational Opportunities' at the Institute for Advanced Studies – Vienna (IHS). His main areas of research are social inequality and social progress in and through education, in – and exclusion from the labour market, disadvantaged youth, educational poverty, second chance education, educational trajectories and evaluation studies of educational measures and programs (e.g. the European Social Fund program).

ORCID

Sabrina Temel  <http://orcid.org/0009-0001-5263-473X>

Barbara Gasteiger-Klicpera  <http://orcid.org/0000-0002-1101-5457>

Mario Steiner  <https://orcid.org/0000-0002-0959-6109>

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