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Examining the Impact of Self-Contained Special Education Classes on Students' Academic Achievement, Social Belonging, and Engagement in School: A Systematic Literature Review

Examen de l'impact des classes d'éducation spécialisée autonomes sur la réussite scolaire, l'appartenance sociale et l'engagement scolaire des élèves : une revue systématique de la littérature

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Abstract
Through this systematic literature review we examine the impact of self-contained special education classes on students' academic outcomes, experiences of belonging, and school engagement. Overall, the results of this systematic review demonstrate limited support for self-contained class placements. Of the 15 studies collected through this review, only three studies examining student belonging and engagement showed more favorable results for students who were educated in self-contained classes. The review did not find any studies that demonstrated more favourable academic outcomes for students in self-contained programs. Two studies explicitly reported harm caused by being in a self-contained class. The findings are reviewed and discussed using a social model approach to disability grounded in critical disability theory.

Résumé
Dans cette revue systématique de la littérature, nous examinons l'impact des classes d'éducation spécialisée autonomes sur les résultats scolaires des élèves, leurs expériences d'appartenance et leur engagement scolaire. Dans l'ensemble, les résultats de cette revue systématique démontrent un appui limité pour les placements en classes autonomes. Sur les quinze études conservées dans le cadre de cette revue, seules trois études examinant l'appartenance et l'engagement des élèves ont montré des résultats plus favorables pour les élèves scolarisés dans des classes autonomes. La revue n'a trouvé aucune étude démontrant des résultats scolaires plus favorables pour les élèves des programmes autonomes. Deux études ont explicitement signalé des préjudices causés par le fait d'être dans une classe autonome. La revue utilise une approche fondée sur le modèle social du handicap émanant de la théorie critique du handicap pour l'examen de ces résultats et la discussion.

Keywords
Systematic Literature Review; Inclusion; Inclusive classrooms; Self-contained programs; Placement; Special education

Mots-clés
Revue systématique de la littérature; inclusion; classes inclusives; programmes autonomes; placement; éducation spécialisée

Introduction

Educational placement decisions have been central to the debate between proponents of traditional special education and advocates of inclusive education for over 50 years (E. Brantlinger 1997; Connor 2019). Scholars in favour of self-contained placements (defined in this paper as 50% or more of the student's time spent exclusively with other disabled children, separate from the mainstream classroom with the rest of the grade cohort) have argued that general education teachers are not specifically trained to deal with disabled students (Causton-Theoharis et al. 2011). In their view special education teachers are experts, have more flexibility to offer specialized pedagogies in their own classes (Kauffman, Bantz, and McCullough 2002), and that self-contained placements reduce the bullying experienced by disabled students (Zablotsky et al. 2014).

Other research has disputed these claims. Danforth et al (2006) argue that in the United States, due to massive teacher shortages, a huge proportion of educators in special education programs are not experts, nor are they even certified teachers. A number of reviews suggest that inclusive approaches to pedagogy, programs, and placement tend to yield either greater benefits or no difference for students over self-contained ability groupings (Hehir et al. 2016; Mitchell 2015). Research on bullying found that students were more likely to be bullied in self-contained placements than in general placements (Rose, Espelage, and Monda-Amaya 2009). Further, research has highlighted that self-contained placements pose potential risks to students, such as stigma (Mueller 2019), constraints on future opportunities (Parekh and Brown 2019), and exclusion from the school community (Riitaoja, Helakorpi, and Holm 2019).

In 2021, the authors of this paper conducted a systematic review of empirical research examining the impact of self-contained special education programs on students' academic

achievement, experiences of belonging, and students' engagement in school. Academic achievement has been a long-standing priority of educational institutions to ensure students are equipped with core skills, particularly in literacy and numeracy to meet the demands of the labour force (Ball, Maguire, and Braun 2012). Attending to experiences of social belonging is a more recent educational priority. Allen and Bowles (2012) found that students who reported a strong sense of belonging had better academic outcomes, were more motivated, applied more effort, experienced lower rates of absenteeism, and had exhibited positive attitudes towards learning. Similarly, school engagement has been shown to be a reliable predictor of academic success (Christenson, Wylie, and Reschly 2012).

In the process of compiling the report, we noticed several subtleties in the research that piqued our curiosity. There were patterns within the literature relating to how the term 'inclusion' was used and how results from inclusive education research might be interpreted. We recently updated our study to incorporate more recent publications and have expanded our investigation to include an examination of how inclusive education was discussed within this body of literature. Our findings add further evidence to the ongoing debate about education placement.

Methodology

As our research question is relatively narrow, we decided that a systematic review would be appropriate. Our specific research question was: What does the empirical research suggest the impact of self-contained special education programs are on the academic achievement, sense of belonging, and engagement of disabled students?

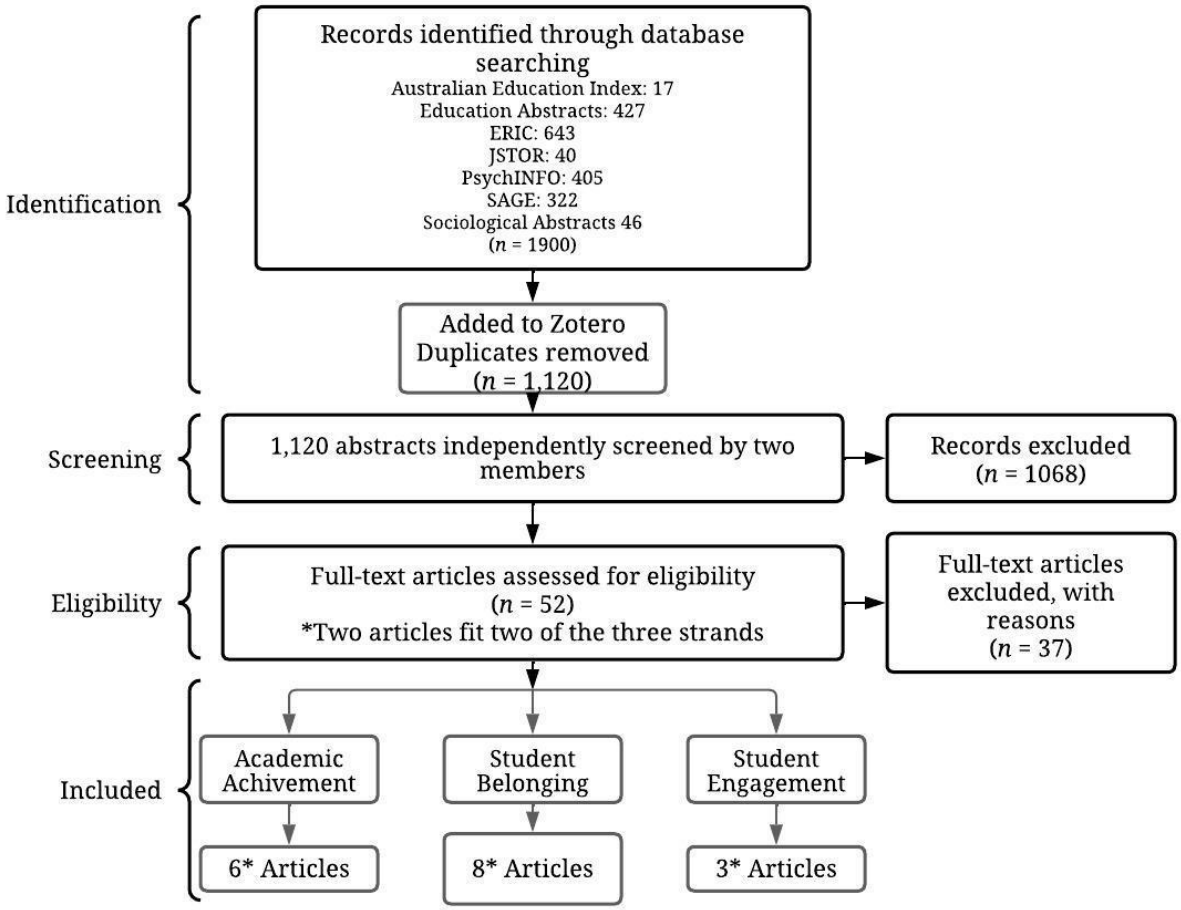
For the first phase of the review, six researchers came together to select databases, generate search terms, and set up inclusion/exclusion criteria. Seven databases (JStor, Sage, PsycINFO, Educational Abstracts, ERIC, Sociological Abstracts, and Australian Abstracts) were searched for publications from 2005-2024. The databases were chosen because of their substantive collective coverage of education research. The date range was limited to 2005 forward to focus on research set within the current educational placement landscape. Databases were searched using a variety of terms relating to self-contained special education programs, including "special education" and any one of the following terms: "self-contained," "special education class," or "placement" (see Appendix A). Two members of the team executed the searches, downloaded citation information and abstracts in RIS format into Zotero, and removed duplicate entries.

Next, three pairs were each tasked with one of the project's strands of inquiry: *academic achievement, student belonging*, or *student engagement*. We understood *academic achievement* in terms of either performance or improvement in skills in traditionally academic subject areas, such as language, mathematics, science or social studies. We also considered long-term educational milestones such as graduation or access to post-secondary education as indicators of academic achievement. Our interpretation of *belonging* aligns with Allen and Bowles (2012) who identified a number of components, including: friendships, a sense of safety, fair discipline, extracurricular activities, positive relationships with adults in the school who care about their learning, about them as individuals, and have high expectations for their success. Our interpretation of *engagement* aligned with Finn and Zimmer's (2012) model where they describe engagement as including academic engagement (attentiveness, completing assignments, extra-curricular learning), cognitive engagement (expenditure of energy to comprehend a concept,

asking questions, persisting with difficult tasks, etc.), affective engagement (feeling that school is worthwhile, feeling a sense of belonging), and social engagement (interacting appropriately with peers and teachers, behaviour, etc.).

Each researcher independently scanned all abstracts (n = 1,120) and tagged articles based on the inclusion/exclusion criteria. Articles were included if they a) took place within a K-12 education setting; b) occurred in an education system similarly structured to the Canadian context; c) included five or more participants; d) specifically measured the *impact* of self-contained classes (as opposed to a particular intervention or initiative) on academic achievement, sense of belonging, or student engagement. We considered a placement to be self-contained if students spent 50% or more of their day separated from general education classes. We excluded studies that a) were not based on primary research (i.e., literature reviews, theoretical papers, or practice-based articles); b) exclusively used measurement tools based solely on teacher perception; c) focused on gifted programs; and d) exclusively focused on classes in self-contained special education schools due to differences in resources, staffing, and focus on accessibility and disability support that is often embedded within the culture of the school. Abstracts identified for inclusion by both reviewers in a pair were selected for the full article review stage. In cases where there was a discrepancy, the article was discussed until consensus was achieved. Full-text reviews (n = 52) were similarly conducted. A total of 15 articles were included in this systematic review. The databases and search results are shown in Figure 1.

Figure 1: Diagram outlining search and inclusion results.



We approached our analysis with a socio-political/socio-cultural understanding of disability (Oliver 1990), and with a critical special education orientation (Baglieri 2017). We recognize environmental and attitudinal barriers as key factors in the systemic perpetuation of inaccessibility in schools (Ontario Human Rights Commission 2018). We also acknowledge that our readings and interpretations are filtered through our own lived experiences. The research team holds extensive experience as educators and researchers in Ontario public education systems, and several members have lived experience of disability.

Results

A total of 15 articles were included in this systematic review. Six articles addressed academic achievement, eight articles addressed sense of belonging, and three addressed student engagement. Please note the two studies addressed two strands.

Although our research questions specifically focus on the outcomes of disabled students placed in *self-contained* special education classes, 13 of the 15 articles did so in comparison to the outcomes of disabled students placed in "general education classes*"* (*n*= 4), "regular classes*"* (*n*=1), "mainstream classes*"* (*n*=1), "resource rooms" (*n*=1), and "inclusive classrooms" (*n*=6). As a result, our analysis unavoidably includes attention to the efficacy of a variety of placements.

Previous research has noted that there is substantial variation in how the term *inclusive education* is defined in academic literature (Baglieri et al. 2011; Nilholm and Goransson 2017). Here, we would like to explicitly state that our understanding of inclusive education aligns with the comprehensive definition provided in General Comment 4 on the United Nations Convention on the Rights of Persons with Disabilities (CRPD):

> Inclusion involves a process of systemic reform embodying changes and modifications in content, teaching methods, approaches, structures and strategies in education to overcome barriers with a vision serving to provide all students of the relevant age range with an equitable and participatory learning experience and the environment that best corresponds to their requirements and preferences. Placing students with disabilities within mainstream classes without accompanying structural changes to, for example, organization, curriculum and teaching and learning strategies, does not constitute inclusion. Furthermore, integration does not automatically guarantee the transition from segregation to inclusion. (Committee on the Rights of Persons with Disabilities (CRPD) 2016, para. 11)

We further wish to highlight that for us, inclusive education extends beyond mere integration to include an emphasis on creating a culture of inclusion, de-stigmatizing disability, as well as valuing and presuming the competence of all students (Mitchell 2015).

Within our included articles, we observed that many authors equated inclusion with placement in mainstream classrooms. To avoid perpetuating the conflation between integration and inclusion, we will note the exact terms and definitions of each article in the summaries below and collectively, we will refer to the comparison groups as "non-separated" classes. We will revisit the issue of defining inclusive education in our discussion. The results are reported below according to the three research strands.

Academic Achievement

All six studies examining academic outcomes used quantitative methodologies and were conducted in North America. Four of these studies focused on standardized achievement levels or degree of improvements in literacy and/or numeracy. One study examined the impact of elementary self-contained placements on secondary course streaming, and one study analysed achievement on standardized tests as well as graduation rates and diploma types.

Five of the six studies actively controlled for variation in ability between the groups of students in the self-contained group versus the non-separated groups. By controlling for variables such as IQ,[1] disability, academic abilities upon entering special education programs, attendance, behaviour, and student demographics, researchers measure the impact of placement more accurately. Four different matching methodologies were used: pair matching (Gee, Gonzalez,

[1] We'd like to acknowledge that IQ measures are problematic and have been historically challenged over their objective assessment of ability (Gould 1996). However, in the field of education, this measurement is often used as a proxy for ability and is employed as a methodological strategy to better understand the impact of the program.

and Cooper 2020), propensity score matching (Cole et al. 2021; 2023), group matching (Signor-Buhl, LeBlanc, and McDougal 2006), and a three-way cross-tabulation and chi-square analyses controlling for achievement (Parekh and Brown 2019). One comparative study (Graham et al. 2007) did not employ a matching methodology. The results of that study were interpreted more cautiously.

Literacy

All five studies that examined literacy found that students in the "high inclusion group" (>80% of day spent in general education classes) had stronger outcomes than those in the "low inclusion group" (<80% of day in general education classes). Cole et al. (2021) analyzed literacy achievement of 1,619 students on the Indiana statewide test. Their study included students with learning disabilities, autism spectrum disorder, emotional behavioural disorders, other health impairments, blind/low vision, and Deaf/hard-of-hearing disabilities. Students identified as having developmental disabilities were excluded. They used the term "inclusive settings" throughout the paper but did not provide a definition of what occurred in the general education classes to make them inclusive. After using a propensity score matching method to control for eight variables including student demographic information and previous academic performance, the authors concluded that students who spent 80% or more of their time in "a general education inclusive classroom" performed better than students in the "low inclusion group".

In a follow up study, Cole et al. (2023) extended their research to include academic outcomes in secondary schools including performance on state-wide tests, graduation rates and diploma types. Identified disabilities included Cognitive Disability, Learning Disability, Autism, Emotional Disability, Other Health Impaired, Blind/Low Vision, and Deaf/Hard of Hearing.

Students classified as language or speech impaired and students who took the Alternate State Assessment (typically students identified as having significant Intellectual Disability) were excluded, leaving 24,050 students in their language achievement analysis. Using the same definitions of inclusion and propensity score matching methodology as their first study, they found that students in "high inclusion settings" scored 24.3 points higher in language on 10th grade Indiana state test. A limitation of the study is that it is not known what subject areas the students were receiving special education support for. It is also not clear how well groups were matched based on prior skills in literacy.

In an older study, Signor-Buhl et al. (2006) compared New York State standardized test results of fourth grade students who had been in a self-contained program for at least two years (n = 38), with matched students in "inclusion programs" (n = 31). They did not define their use of inclusion. They also did not specify which exceptionality groupings were included but did indicate that students with "significant disciplinary difficulties" (p. 111) were excluded. Furthermore, we assumed that students identified as having significant cognitive impairments were also excluded from the study because they are usually exempted from state-wide tests[2] which was a primary measurement tool in this study. After controlling for IQ, the authors found that students placed in the "inclusion setting" did moderately better (approximately 0.6 SDs) in reading achievement than their peers who were placed in self-contained classrooms. A limitation of this study was that they only controlled for IQ, not reading ability prior to the placement and therefore does not account for students with learning disabilities in literacy.

Gee et al. (2020) in California studied progress towards IEP goals for students with extensive support needs. They compared the literacy progress of 15 pairs of students who were

[2] The United States Department of Education permits exemptions from state-wide testing for up to 1% of students on the basis of "significant cognitive impairments" (Lazarus et al. 2015).

matched according to 12 variables, including primary disability label, diagnosis, communication ability, literacy and numeracy levels, and presence of a behaviour support plan. One student in each pair had been assigned to a self-contained class and the other was “included in a general education class” for 80% or more of their day. Progress was measured for each student by comparing their goals on their first Individual Education Program (IEP) to their goals on their latest IEP. In the areas of literacy and communication, students "included in general education classes” made significantly more progress compared to those in self-contained programs. A limitation of this study is that no two students can be perfectly matched.

Graham et al. (2007) measured literacy skills of 64 Black students from one school in Georgia using a pre/post method with a standardized academic test. The participants ranged in grade from 9-12 and had been classified as “Emotional/Behaviour Disordered, Learning Disabled, Other Health Impaired, Orthopedically Impaired, or Speech Language Impaired based on federal and state definitions of the exceptionalities” (p.68). The “inclusion class” was described as having a general education teacher and special education teacher working together collaboratively with 35 students seeking a technical level diploma. The self-contained classes were taught by one special education teacher and had 8 students seeking a special education certificate of attendance. The researchers compared the results of the two groups in September with a one-way ANOVA, and again in March and found that students in the “inclusive classroom” (n = 32) performed better than those in self-contained classes (n = 32). The average improvement for both groups was 1 point. A limitation of this study is that it did not control for any student characteristics, including prior literacy achievement, that may have informed placement decisions. The sample size was also quite small and it was not clear why they used an ANOVA rather than a t-test which would be more typical for a comparison of two groups.

Numeracy

Three out of the four studies that also examined numeracy found stronger results for students in non-separated classes. The fourth study found no difference between the two settings. Cole et al. (2021) analyzed the fourth grade and eighth grade results of 1,669 students on the Indiana statewide test and found that those in the "high inclusion group" (see above for definition) performed better than those in the "low inclusion group". In their 2023 study of 24,085 secondary school students, they found students in the "high inclusion group" scored an average of 18.4 points higher on the 10th grade Indiana state standardized test. Gee et al. (2020) found that the 15 students with extensive support needs in general education classes made significantly more progress towards the numeracy goals in their IEPs compared to those in self-contained classes. Finally, Signor-Buhl et al. (2006) did not find any differences in math achievement between their two comparison groups.

Academic Trajectories

Two studies looked at the longitudinal impacts of self-contained classes. Cole et al. (2023) study of 24,085 secondary school students, they found students in the "high inclusion group" were more than 22% more likely to graduate secondary school based on passing the achievement test rather than receiving a waiver.

Brown and Parekh (2019) used system data from the Toronto District School Board to examine how placement in self-contained classes affected academic pathways in secondary

school[3]. They found that students were significantly more likely to be streamed into lower academic tracks than students in "general education classes," despite controlling for performance on the standardized provincial test. Of students who achieved a level 3-3.49 (above the provincial average) on the Grade 6 provincial mathematics test, only 19% of students from self-contained programs accessed the academic track in secondary school compared to 90% of students in general education.

Belonging

We found eight quantitative studies pertaining to students' experiences of belonging. They are discussed through three themes: (a) relationships and social participation; (b) incidences of bullying; and (c) evidence of social anxiety.

Relationships and Social Participation

Gee et al. (2020) [4] found that students in inclusive settings were more involved in activities similar to, and had more relationships with, their non-disabled peers. The researchers also found the students were more likely to communicate, either verbally or non-verbally, and play with peers with and without disabilities compared to students placed in self-contained classrooms.

Zakai–Mashiach (2023) focused on the retrospective experiences of 12 Autistic graduates (ages 19-27) who had been in special education classrooms for Autistic students in secondary

[3] Please note that, in schools, the Home School Program was sometimes described as a 'half-time' or half day' program where students spent "up to 50%" of the day in a special education placement (as noted in the article). However, the program does meet the criteria for a placement in a special education class for 50% or more of the day as per Ontario guidelines.
https://www.tdsb.on.ca/Portals/0/aboutus/Special_Ed_Plan_Sec_D_Inclusion_Delivery_Model.pdf
[4] See the Academic Achievement section for the methodology and population sample.

school in Israel. Using interpretative phenomenological analysis (IPA), they reported that participants felt that being grouped together based on their disability assumed that they were all similar, despite their multifaceted differences. Some of those with lower support needs felt that they were ignored or stigmatized by being associated with those with higher support needs, while others appreciated being able to help those students who needed more support. While the report on the emotional impact of the self-contained classes contained nuances, the social impact was mostly negative with many participants' comments describing loneliness, isolation, and suffering. A limitation of the study was that they did not have many participants with high support needs or limited communication skills. The experiences of the participants may not represent those of all students in the self-contained classes.

Conversely, Jones and Hensley (2012) found more supportive peer relationships within self-contained classrooms. They surveyed 12 special education teachers, 31 adolescents with intellectual disabilities (IDs) in self-contained classrooms, and 20 adolescents with IDs in "resources rooms" who spent up to 65% of their school day in "general education classes or activities" (which were unspecified). The authors examined social support from teachers and classmates, and quality of student–teacher relationships finding students in self-contained classes reported feeling more supported by their peers, with positive feelings toward the student. A limitation of the study is that there were significant differences in group characteristics. Students in the self-contained classes were described as more dependent and had significantly lower verbal scores.

In Louisiana, Pellerin (2022) examined the experiences of 20 students (16 male, 4 female, ages 7 - 20) from eight schools, in self-contained physical education classes. Most participants had Autism or Intellectual Disability. Students with limited verbal communication were excluded

from the study. Researchers used semi-structured interviews supported by prompts, drawing activities, and observation of participant body language. They defined inclusion as a sense of value, acceptance and belonging. Researchers reported that their participants experienced feelings of being included in greater amounts in self-contained physical education classes than when they were in "integrated physical education classes" (i.e., general education physical education classes). Many students reported that the primary reason they liked the self-contained class was the ability to make friends with other disabled students, though one student was observed to be annoyed with his classmates.

Saban-Bezalel (2024) investigated the ability to establish friendships for 43 Autistic students. They split their participants into two groups: a Friendship(+) group of students who had a friend, whose parents reported having a friend, and had a score of 0–1 on the ADOS social insight subscale (n = 19, female = 2) and a Friendship(-) group (n = 24, female = 2) for those remaining. The results showed no significant difference between students who were in self-contained or "mainstream classes". The authors reported that participating Autistic adolescents were able to develop friendships regardless of their educational placement.

Bullying

Heiman and Olenik-Shemesh (2015) studied the impacts of educational placement on cyberbullying in Israel. They analyzed and compared survey responses from a cyberbullying self-report questionnaire between three groups of students including 149 students with learning disabilities (LD) in "general education classes," 116 students with learning disabilities in self-contained classrooms, and 242 non-disabled students. The authors found that 40% of students in self-contained classrooms reported being the victims of cyberbullying compared to 27% of LD

students in general education classes, and 27% of non-disabled peers. Additionally, 32% of students in self-contained classes reported being perpetrators of cyberbullying, compared to 21% of disabled students in general education classes, and 18% of non-disabled peers. A limitation of the study is that characteristics between groups were not matched or controlled for and therefore claims about the impact of placement are weak.

Similarly, Saia et al. (2009) also reported that disabled students were significantly more likely to be both victims and perpetrators of bullying. Specifically, they studied the impact of placement between students in self-contained classrooms (n = 16), students "receiving resource or consultation support" (n = 20), and non-disabled peers (n = 36). Definitions of these placements were not provided. Disability groups included learning disability (n = 21), Mild Intellectual disability (n = 5), Moderate Intellectual Disability (n = 9), Speech Language Impairment (n = 10), Emotional/Behavioural Disorder (n = 3), Physical Disability (n = 4), Autism (n = 2). Using the Bully Victimization Scale (BVS) they found that 44% of disabled students (regardless of placement) reported being the victim of bullies compared to only 17% of the matched students without disabilities. Of students in self-contained classrooms, 67% of students reported high levels of anxiety about being bullied compared to 10% of disabled students in resource settings, even though the frequency of bullying experiences was the same for both groups. A limitation of the study is that characteristics between the two groups of disabled students were not matched or controlled for and therefore claims about the impact of placement are weak.

Social Anxiety

Peleg (2011) compared three groups of Christian Arab 7th grade students within one school in Israel: 16 students with learning disabilities in a self-contained class, 24 students with learning disabilities in "partially inclusive classes", and 30 non-disabled students. "Partially inclusive" was described as general education with either a co-teaching model or withdrawal support. Peleg used the revised 22-item Social Anxiety Scale self-report (La Greca and Stone 1993) to measure social avoidance and distress caused by new situations, fear of negative evaluation, and generalized social avoidance and distress. The author found non-disabled students reported the lowest level of social anxiety, while disabled students in the partially inclusive classrooms had significantly lower social anxiety than those in the self-contained classes. This finding is particularly important because the authors also showed that lowered generalized social anxiety led to increased feelings of class satisfaction for disabled students in the partially inclusive classes. The same relationship was not observed for the other two groups.

Engagement

Three articles met our criteria. In a Finish study, Holm et al. (2020) compared math-related emotions between students in self-contained math classes (n = 73), students receiving special education support in "general education classes" (n = 127), and students without special education support in math (n = 1179). Support for students in self-contained math classes was described as withdrawal assistance for 1 hour per week. No disability categories were indicated, but the authors did note that students in self-contained classes had lower math achievement levels than students receiving support in the general education settings. They found that students receiving special education support general education math classes indicated less enjoyment, and

more boredom and anger compared to their peers in self-contained math classrooms. They concluded that general education settings decreased students' engagement in schoolwork and reported positive outcomes for students in self-contained settings.

Pellerin (2022) (described above) reported that students were highly engaged in the activities in their self-contained gym classes. Students reported enjoying sport activities and engaging in activities with their peers.

Zagona et al. (2022) used ecobehavioral assessment observation and multinomial regression methods to investigate how classroom contexts vary for students across "general education", resource, self-contained, and separate school classrooms. They observed 116 students with complex support needs across the United States and measured frequencies of 12 variables in three categories including student behaviours, educator behaviours and classroom ecology. They found no statistical differences in frequency of students engaging in academic tasks between self-contained classrooms and general education classrooms. However, they did find that there were greater odds of classroom distractions in self-contained programs.

Discussion

Overall, the results of this systematic review demonstrate limited support for self-contained class placements. Only three of the 15 studies showed more favorable results for students who were educated in separated classes. Pellerin (2022) and Jones and Hensley (2012) found more supportive peer relationships in self-contained programs while Pellerin (2022) and Holm et al. (2020) found stronger engagement in self-contained math programs. We did not find any studies that demonstrated more favourable academic outcomes for students in self-contained

programs. Two studies (Zakai–Mashiach 2023; Parekh and Brown 2019) explicitly reported harm caused by being in a self-contained class.

The results of this review mirror the conclusions of other comprehensive reviews of international literature. For instance, in Mitchell's (2010; 2015) reviews, studies suggest that ability grouping, particularly when students are grouped based on the perception of low ability, are detrimental to student learning for several important reasons. Citing Houtveen & Van de Grift (2001) and MacIver et at. (1995), Mitchell (2010; 2015) notes that low ability groupings impart low expectations on students, lead to limited access to course content and curriculum, and often lead to permanent trajectories (also see Hehir et al. 2016; Organisation for Economic Co-operation and Development (OECD) 2012). Other research has echoed these results and discussed the implications for students' sense of self and place within the school (Archer et al. 2018; Parekh 2022).

Much of the research examining the impact of self-contained special education programs and ability groupings focus on students' academic achievement and outcomes. Our review extends these explorations to include the impacts of self-contained placements on experiences of social belonging and engagement in school. The studies included in this review enable a more nuanced perspective on the impacts of self-contained placements on disabled students. Three studies pertaining specifically to social belonging and engagement note that the majority of students had more favourable experiences in self-contained special education programs in comparison to general education classes. As researchers and scholars, we appreciate the nuance afforded in this review and would like to also note three critical observations resulting from engaging in research examining the impact of special education placements on students' experiences in school.

First, self-contained placements are often presented as dichotomous to inclusive placements, but they are not. Integration, defined as "placing students with disabilities within mainstream classes without accompanying structural changes" (CRPD 2016, para. 11) is far too common and "does not eliminate segregation, marginalization, discrimination or devaluation in mainstream school settings" (Haug 2017, 208). Conflating inclusion and integration in research may have implications for how findings on the impacts of self-contained settings are interpreted. For example, the three studies in our review that found more favourable experiences in self-contained programs were in direct comparison to integrated settings, *not* inclusive settings. Failure to recognize this distinction risks the conclusion that inclusive education does not work. As another example, findings that students fared just as well or better academically when they were *not* in self-contained programs without distinguishing whether that was due to integration or inclusion, risks the elimination of funding and the pursuit of factors (academic supports and inclusive cultures) that may have led to those outcomes.

Within our review, 11 out of the 15 studies reviewed discussed their results in terms of inclusive education but none were actually able to measure the impact of inclusive settings. Three studies used a comprehensive definition of inclusion, but none of them conducted research in inclusive settings (Zakai–Mashiach 2023; Pellerin, Wilson, and Haegele 2022; Parekh and Brown 2019). Four articles described their inclusive settings in terms of time spent in general education classes (i.e. no measures of support or inclusive culture) (Cole et al. 2021; 2023; Gee, Gonzalez, and Cooper 2020; Zagona et al. 2022) and one article did not provide any definitions or descriptions of the "inclusive classes" (Signor-Buhl, LeBlanc, and McDougal 2006). The final three articles provided some descriptions of the academic support provided in the general education classes (e.g., withdrawal one time per week, co-teaching) but did not provide any

insight into the culture of the classroom community (Holm et al. 2020; Graham et al. 2007; Peleg 2011). We implore future researchers to carefully disaggregate students' experiences of integration and inclusion when examining the impact of educational placements.

In addition to the murky understanding of inclusion, our team shared similar concerns to Haug (2017) and Göransson & Nilholm (2014) who reported that the research on school placement tends to be of variable quality, with some clear methodological shortcomings. In terms of comparing groups of students, it's important to understand how groups are both similar and how they differ. While there is a preference for matching methodologies, we noted that the matching methodologies used in studies examining academics were not always comprehensive enough to ensure that like groups were matched. Additionally, studies in the belonging section did not control group differences on the variables they were measuring prior to placement and therefore could not be certain that those same characteristics (e.g. social anxiety) were an impact of the placement.

Finally, when the outcomes of studies suggest a preference for or positive correlation with a particular placement, there were likely participants whose experiences differed from the aggregated findings. We note the risk of obscuring less frequent outcomes in each individual study as we report their collective results. Counter-experiences hold tremendous value in better understanding disabled students' experience of schooling, particularly when they are shared directly by students themselves. Importantly, we collectively hold in tension the aims of inclusive education in tandem with upholding the values of disability community, pride, culture, and leadership, where creating spaces for disabled students to congregate can play an important role in transmitting tacit knowledge (Polonyi 1983). Policy outcomes based on pan-disability generalizations, dichotomous options, and one-size-fits-all logic have rarely (if ever) served the

disabled community. Core to promoting positive experiences for all students is choice, agency, and access, and we would advocate for a schooling system that is both flexible and responsive.

Conclusion

Following our literature search, only 15 articles met our inclusion and exclusion criteria of which only three (specifically related to social belonging and engagement) found the conditions in self-contained special education classes favourable in contrast to integrated settings. No articles in this review found support for self-contained special education classes in relation to students' academic achievement. These outcomes align with previously reported research and reviews of international literature that have found that self-contained programs limit access to curriculum (Kurth and Mastergeorge 2012) and stigmatize students (Mueller 2019). which were both evident in our review (Zagona et al. 2022; Zakai–Mashiach 2023). However, we share concerns with the writers of Comment #4 of the CRPD that "integration does not automatically guarantee the transition from segregation to inclusion" (CRPD 2016, para. 11) and we implore future research to carefully disaggregate students' experiences of integration and inclusion when examining impact of educational placements.

Limitations

The narrow scope of our topic limited the number of articles we could review. There are undoubtedly articles with valuable insights that broader research questions would capture.

Declaration of Interest

The authors report there are no competing interests to declare.

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Appendix A: Database Search Terms

Database	**Search String**	**Additional Settings**	**Results**
Australian Education Index	ab(“special education”) AND ab(“self contained” OR “self-contained” OR “special education class*” OR “placement”)	After 1 Jan 2005	17
Education Abstracts (H.W. Wilson)	AB “special education” AND AB (“self contained” OR “self-contained” OR “special education class*” OR “placement”)	Peer Reviewed After 1 Jan 2005	427
ERIC (Education Resources Information Center)	ab(“special education”) AND ab(“self contained” OR “self-contained” OR “special education class*” OR “placement”)	Peer Reviewed After 1 Jan 2005 English	643
JSTOR	(ab:(special education) AND ab:(“self contained” OR “self-contained” OR “special education class*” OR “placement”) AND la:(eng OR en) AND disc:(education-discipline)	Articles Education Journals After 1 Jan 2005 English	40
PsychINFO	ab(“special education”) AND ab(“self contained” OR “self-contained” OR “special education class*” OR “placement”)	Peer Reviewed After 1 Jan 2005 English	405
SAGE	“special education” AND “self contained” OR “self-contained” OR “special education class*” OR “placement”	2005–2022	322
Sociological Abstracts	ab(“special education”) AND ab(“self contained” OR “self-contained” OR “special education class*” OR “placement”)	Peer Reviewed After 1 Jan 2005 English	46
Total			1,900
Unique Results			1,120