CANADIAN COUNCIL ON LEARNING CCL CCA CONSEIL CANADIEN SUR L'APPRENTISSAGE

LESSONS IN LEARNING

Does placement matter?

Comparing the academic performance of students with special needs in inclusive and separate settings

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A significant proportion of Canada's school-age population requires special educational provisions. Statistics Canada reports that 4.6% of 5- to 14-year-olds had some kind of disability in 2006.[1] As well, recent data from the British Columbia and Ontario ministries of education indicate that students with designated special educational needs comprise close to 9% of the primary and secondary school population.[2,3]

Educational placements among this population pose controversial questions: are students with disabilities better served in 'inclusive' settings with mainstream peers, or 'separate' settings with similarly challenged peers, where specialized attention is arguably easier to provide? (See also Lessons in Learning: Equality in the Classroom) Despite a move toward inclusion being the most significant trend across OECD countries,[4] and widespread belief in the social and emotional advantages of inclusion,[5] the academic consequences of educating students with special needs in inclusive rather than separate settings remain contested.[6]

Often, proponents of separate settings do not disagree with inclusion in principle, but believe, in practice, adequate support services cannot be offered in inclusive settings.[7] Others appear to believe the conditions for successful inclusion are achievable, but not currently in place.[8]

The Canadian Council on Learning recently completed a systematic review of the literature comparing the academic outcomes of students with special educational needs (SEN) in inclusive settings with their counterparts in separate settings. This review was designed to investigate claims that inclusive settings are more or less beneficial than separate ones.

Interpreting the systematic review of research

Thirty relevant studies, conducted primarily in the U.S. but also in the U.K. and Canada, were identified. These studies examined students with learning disabilities, intellectual disabilities, language impairments and mixed disabilities.

Most studies focused on "statistically significant" differences, that is whether outcomes were significantly different for students in inclusive settings compared with students in separate settings. However, "statistical significance" suggests only that a reliably measurable difference has been detected, and does not necessarily mean that the difference is large enough to be practically relevant. Similarly, lack of statistical significance suggests only that group differences are not reliably measurable, but does not necessarily mean that there is no real difference.

To address these shortcomings, for each statistical test of significance reported in a study, CCL calculated an 'effect size' (ES), a measure of magnitude that suggests the practical effect of introducing a treatment. A large effect size favouring inclusion suggests, for example, that on average students in inclusive settings greatly outperform students in separate settings.

CCL's research team also assessed the quality of each study based on eight criteria addressing research design and reporting transparency. The assessment created three quality categories: 'high,' 'medium,' and 'low.'

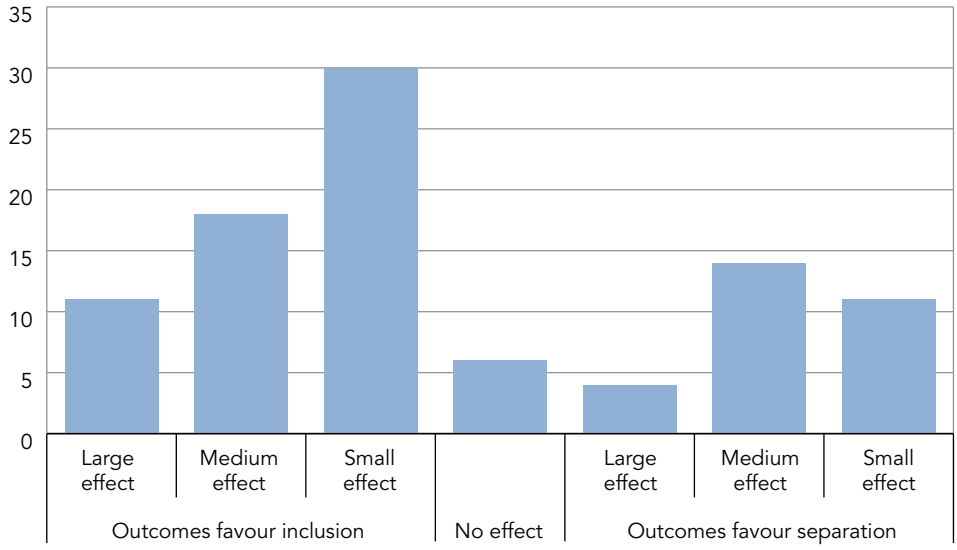
Learning Disabilities

According to the Manual of Policies, Procedures and Guidelines of the B.C. Ministry of Education, "learning disabilities" refer to "a number of disorders that may affect the acquisition, organization, retention, understanding or use of verbal or non-verbal information," (British Columbia Ministry of Education, 2006, p. 46).

In 18 studies of students with learning disabilities, 94 effect sizes were calculated (see Figure 1). Fifty-nine effect sizes favoured inclusion; 29 favoured separate settings. Six effect sizes were small enough to be considered negligible. Of the 94 effect sizes, 39 achieved statistical significance.

On balance, inclusive settings appear preferable to separate settings for students with learning disabilities. Nonetheless, exactly half of all effect sizes were small or negligible, and most were not statistically significant. This finding, along with the non-trivial number of contradictory findings, suggests that inclusive versus separate settings may not be the most important variable in predicting the outcomes of students with learning disabilities.

Figure 1:
Frequencies, magnitudes and directions of effect sizes across academic outcomes in studies of students with learning disabilities



When the high quality results were examined in isolation, results were even more equivocal. Eighteen high quality outcomes favoured inclusion, only seven of which were significant; five of these came from the same study.[9] Eight effect sizes favoured separate settings; four of these were significant. Three outcomes showed no effect. In other words, the best research available on the effects of learning-disabled student placement only tentatively favours inclusion.

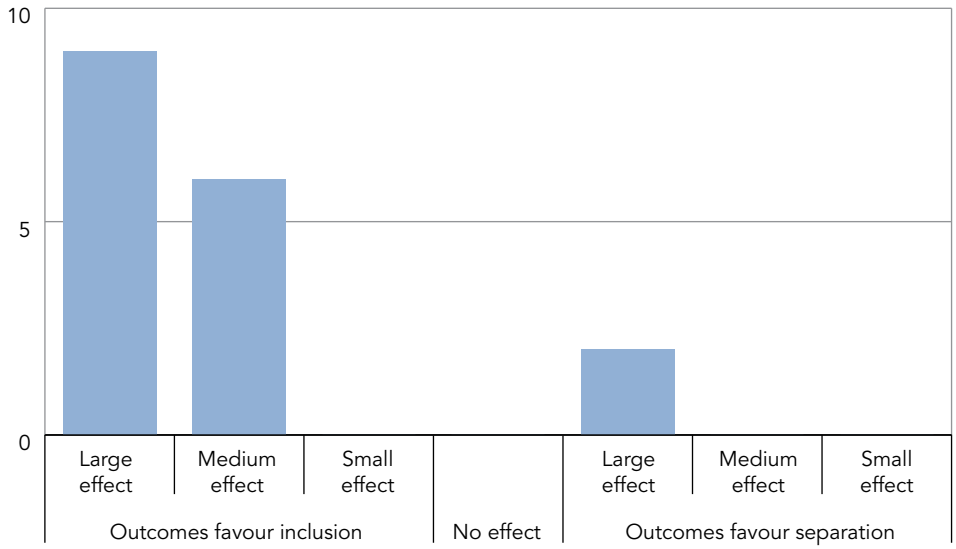
Intellectual disabilities

Students are considered to have intellectual disabilities if their intellectual functioning is more than two standard deviations below the norm.[10] Like learning disabilities, the range of intellectual disabilities is wide, varying from mild to severe to profound.

Only four studies examined students with intellectual disabilities. Seventeen effect sizes were produced (see Figure 2). Fifteen of these favoured inclusive settings, although only seven achieved statistical significance. Only two effect sizes favoured separate settings and these were not statistically significant; moreover, these two occurred in a study that also featured six positive outcomes for inclusion.

All studies produced moderate or large effect sizes, suggesting a high degree of practical benefit to inclusive settings for students with intellectual disabilities. All four studies received high quality ratings, and five of the large effect sizes were statistically significant. However, while these outcomes strongly favour inclusion, the small number of studies prevents any definitive conclusion that inclusive settings benefit intellectually disabled students.

Figure 2:
Frequencies, magnitudes and directions of effect sizes across academic outcomes in studies of students with intellectual disabilities



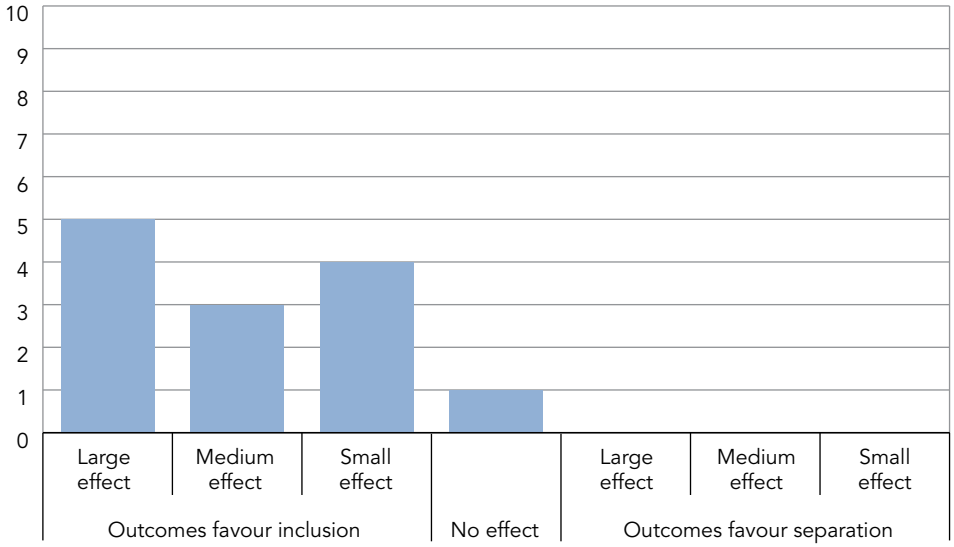
Language impairment

Students with language impairments often have communication disorders, such as stuttering, impaired articulation, or a voice impairment, all of which may adversely affect educational performance. Language-impaired students are "characterized by a failure of normal language development in the absence of any other major neurological, physical or global impairment."[11]

Thirteen effect sizes could be calculated from outcomes in three studies (see Figure 3). Two effect sizes significantly favoured inclusive over separate settings, while 11 favoured inclusive settings but did not achieve statistical significance. No effect sizes supported separate settings.

While two studies found moderate and large effects favouring inclusion, one of these studies received a low quality rating and cannot be safely generalized. The balance of evidence again favours inclusion; however, this result does not stem from a preponderance of strong evidence in favour of inclusive settings for students with language impairments. Indeed, the main implication may be that this population demands further study.

Figure 3:
Frequencies, magnitudes and directions of effect sizes across academic outcomes in studies of students with language impairments

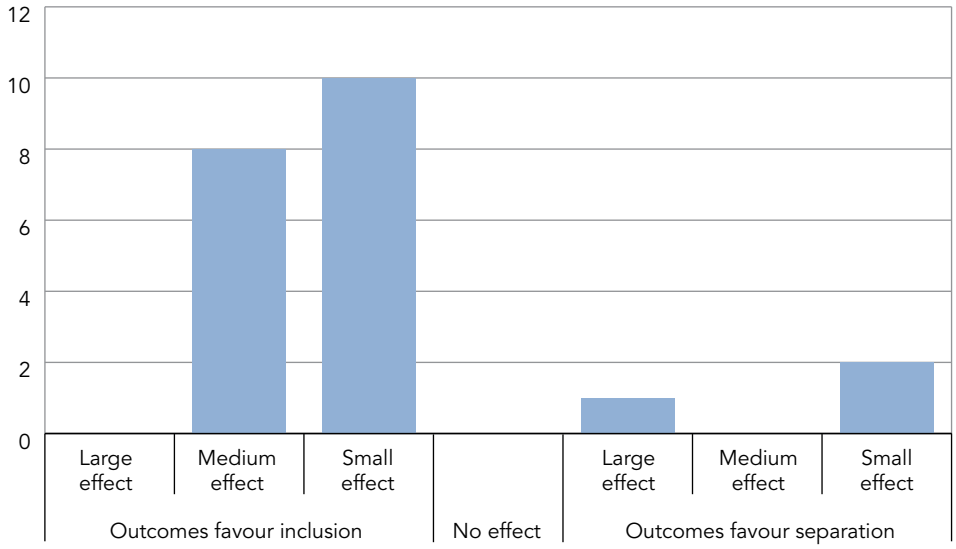


Mixed disabilities

Five studies examined students of 'mixed disabilities.' Their publications either included students with diverse disabilities in their samples or did not describe the types or levels of student disability. Twenty-one effect sizes from five studies were reported or calculated (see Figure 4). Sixteen significantly favoured inclusive classrooms; while this number is large, 12 of these results derived from a medium-quality study that had limitations with confounding variables.[12] Two statistically significant, and one statistically insignificant, results favoured separate settings. Although 18 of the 21 effect sizes favoured inclusion, none was large. Even the medium effects were in the low end of the medium range.

Only one study was deemed high quality.[13] The study included students with a variety of disabilities; it tested for significant achievement differences in mathematics and language arts in two different years. In all cases, the researcher found no statistically significant difference, and very small effect sizes were calculated.

Figure 4:
Frequencies, magnitudes and directions of effect sizes across academic outcomes in studies of students with mixed disabilities



Lessons in learning

All else equal, inclusive settings appear not to academically disadvantage most students with special educational needs (SEN). In many cases they appear to offer an advantage over separate settings.

The balance of evidence shows favourable academic outcomes for students with SEN educated in inclusive settings. However, these results are not homogenous and effects are generally small in magnitude. These two caveats suggest that while inclusive settings are generally preferable, factors other than classroom setting (instructional quality is the most immediately obvious factor) are probably more important determinants of SEN students' academic success.

Importance of teacher capacity building

It follows that building capacity in teachers to educate students with SEN is likely the most important step toward ensuring their academic success. While most teachers support the philosophy of inclusion, they often feel unprepared to instruct students with special needs in their regular classroom.[14] Systematic and frequent professional development opportunities may be the best way to ensure teachers are ready to work in inclusive environments. It may be particularly critical to begin this development at the pre-service level, to ensure teachers enter the profession with the competence and confidence to teach students with special needs.

Similarly, school boards may require more special-education specialists. If universities are not producing enough candidates with this expertise, boards may wish to publicize the job opportunities that result from this specialization more widely, or offer incentives for their employees to acquire this knowledge.

Thoughtful implementation of inclusion

The mixed results and modest advantages provided by inclusion suggest a mere inclusive placement is no guarantee of success. The studies of initiatives where included students with SEN were successful were characterized by adequate support above and beyond that available to general education students. Often this involved team teaching and/or extensive collaboration with a qualified special-education teacher.[15,16] Simply placing students with SEN in mainstream classrooms is no recipe for success.

Realistic class sizes and ratios of students with SEN

Successful inclusive settings are characterized by "attempts… to avoid disproportionate numbers of students with disabilities together in one classroom."[17] Teachers are more likely able to provide effective and individualized instruction when they have a manageable number of special needs students. For similar reasons, reasonable class size may also be a crucial factor in making an inclusive approach successful.[18] Teachers will have more time to serve students with SEN individually in smaller classes.

Considering the best program placement for the child/ Offering a range of services

Few studies reported academic benefits to separating SEN students from the general population. However, the majority showed only small and/or statistically non-significant advantages to inclusive classrooms. As the academic education of children cannot be separated from their social well-being, if students with special educational needs are more comfortable and confident in separate settings—as, for example, may be the case for hearing-impaired, learning-disabled, and some emotionally disturbed students— educators and decision-makers will have to proceed carefully, as the benefits of inclusion are not overwhelming.[19,20] Furthermore, some special needs may be more conducive to inclusion than others. Boards and schools may do well to ensure a range of services are available to support students with differing needs.

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