



## Executive Summary

# BC AVID Pilot Post-secondary Impacts Report



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*BC AVID* Pilot Project  
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# EXECUTIVE SUMMARY

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Finally, we dedicate this volume to the memory of Doug Tattrie, whose life ended prematurely in October 2013 just as this report was being compiled. Doug was a key influence on the rigorous design adopted for the BC AVID Pilot Project and a major contributor to its research outputs over the past ten years. We all miss Doug as a colleague, not least for his ability to combine expertise in rigorous evaluation design with enthusiasm for the critical minutiae of interventions. His contributions to SRDC significantly advanced our understanding of whether and how programs work.

The Authors

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## Introduction

This report presents findings from the BC AVID Pilot Project, which has tested a version of the US Advancement Via Individual Determination (AVID) program implemented in high schools in British Columbia since 2005. The program aims to improve access to post-secondary education for “students academically in the middle” by increasing their access to, and ability to complete, more rigorous high school courses. Although AVID is delivered in nearly 4,500 schools worldwide, this is the first large-scale evaluation of the program using a rigorous random assignment design. The objective of the project has been to determine whether making AVID available to its target group — identified and recruited in Grade 8 — increases the chances that members of that target group enrol in more rigorous study in high school, improve their achievement in high school, and enrol in post-secondary education. This report contains a summary of results for Grade 9 through to the first year of post-secondary education.

## Background

The BC AVID Pilot Project tests a new way to tackle one of the important educational challenges Canada faces in meeting the needs of today’s knowledge-based economy: engaging enough young people in post-secondary education. Post-secondary education plays an increasingly important role in helping individuals attain social and economic success. Promotion of high school students’ access to post-secondary education is a major goal of both federal and provincial governments, yet not all students make the transition. Finnie and Mueller (2008) found that less than two-thirds of Canadian students aged 15 years in 2000 had entered post-secondary education by age 19, and in British Columbia just half of high school students entered the province’s post-secondary system in the year following high school graduation (BC Ministry of Education, 2006).

To help find ways to increase post-secondary access, the BC AVID Pilot Project was established in 2003 as a partnership between the Canada Millennium Scholarship Foundation (the Foundation) and the British Columbia Ministry of Education (the Ministry). It is one of several experiments established by the Foundation with the goal of identifying new policies and programs that could increase young people’s participation in post-secondary education. The project was developed to test one approach — a version of the AVID program — that may alleviate possible academic barriers that students face in furthering their education. For example, one in twelve students who do not attend post-secondary education cite low marks as their main reason (Foley, 2001). The AVID program aims to improve access to post-secondary education for “students academically in the middle” by supporting them to engage in more rigorous coursework and improve their academic achievement. Other common barriers such as financial barriers and career indecision are the focus of different experiments (Ford, Frenette, Nicholson, Kwakye, Hui, Hutchison, Dobrer, Smith Fowler, & Hébert, 2012).



Results have already been released on interim impacts observed up to the point when students completed Grade 11 (Dunn, Smith Fowler, Tatttrie, Nicholson, Schwartz, Hutchison, Kwakye, Ford, & Dobrer, 2010). Students who were offered AVID in British Columbia high schools took more difficult courses than were chosen by equivalent students not offered the program. By Grades 10, 11, and 12, they were achieving grades in those more difficult courses at or above the level they would have normally achieved in less demanding courses. Despite several implementation challenges, the students experienced significantly more exposure to, and adopted more often, the learning strategies and techniques promoted by the AVID program, including tutorials, note taking, and higher order questioning. This report considers whether such interim impacts on students' educational experiences and pathways in high school translated into impacts on their post-secondary education outcomes.

## What Is AVID?

AVID is an American program that attempts to improve post-secondary access for "students academically in the middle" (Dunn et al., 2008, p. 2). The basic idea behind AVID is to change the high school experience of those students believed to have as-yet-untapped potential to succeed in post-secondary education by increasing the rigour of their coursework and providing, in the context of an elective class, several different kinds of support for their learning. The selected students are expected to commit to full enrolment in the AVID elective class (in the case of BC AVID, this spans four years in high school) and also to enrol in the most rigorous courses in their school. The US non-profit AVID Center develops the AVID curriculum, trains educators to deliver the program, and certifies sites on their delivery of AVID. The AVID elective class is the primary vehicle for the delivery of these supports, often called AVID strategies or techniques. The elective class is supposed to meet daily during the regular school day and offers a program of instruction in academic "survival skills." It is important to note that the BC AVID Pilot Project is testing a particular version of AVID. Offering four years in the elective class to AVID-eligible Grade 9 students is not the only type of program that can carry the AVID label. Some AVID programs start earlier and some later than Grade 9. Increasingly, educators have been encouraged to implement AVID school-wide, which means that some elements of the elective class are made available to all students in the school. This project evaluates AVID as an offer of four years in the AVID elective class made only to students who are eligible to be in the class.

The AVID course is structured into three main components: the curriculum class, tutorials, and motivational activities. The curriculum class teaches the students how to study, read for content, take notes, work collaboratively, and manage time. Ideally, tutorials are led by tutors who are currently post-secondary students. Tutors are trained to use skilful questioning to raise students' understanding of their course work. AVID students' elective class time is devoted 40 per cent to curriculum class activities, 40 per cent to tutorials, and 20 per cent to motivational activities. This last category includes guest speakers, team-building activities, and field trips to post-secondary campuses, all intended to promote the idea that post-secondary study is attainable.

The main features of AVID are summarized in 11 AVID "Essentials" developed by the AVID Center and provided to all BC AVID Pilot Project sites. The Essentials function as a general blueprint that all AVID programs should follow. Each is briefly described below:

- **Resources:** The school or district must identify resources to meet program costs, agree to implement AVID Program Implementation Essentials, and work toward participation in annual AVID certification.<sup>1</sup> Commitment to ongoing participation in AVID staff development is also required. The staff trained should include an AVID district director, school administrator, one or more teachers of the AVID elective class, a school-based coordinator of the AVID program, other subject area teachers, and one or more counsellors. Among these staff responsible for implementation of the program, those based at each AVID school constitute the *AVID school site team*.
- **School site team:** The AVID school site team should be active and collaborate on issues of student access to, and success in, rigorous university preparation courses.
- **Selection:** AVID student selection must focus on students in the middle (with a GPA of 2.0 to 3.5 as one indicator), who have untapped academic potential and would benefit from AVID support to improve their achievement and post-secondary preparation.
- **Full implementation:** The school must be committed to full implementation of the AVID Program, with the AVID elective class available within the regular academic school day.
- **Rigour:** AVID students must enrol in a rigorous course of study that will enable them to meet requirements for post-secondary enrolment.

<sup>1</sup> Since 1996, the AVID Center has orchestrated an annual certification process to recognize the implementation level of the AVID program that sites have achieved. To use the AVID curriculum, trade name, trademark, and logo, each site must agree to annual participation in the online certification process.





- **Data:** AVID schools/districts must provide program implementation and student progress data. These data will be monitored through the AVID Data System, with results analyzed to inform the AVID certification process.
- **Participation:** AVID program participants, both students and staff, must choose to participate.
- **Writing:** A strong, relevant writing curriculum must provide the basis for instruction in the AVID elective class.
- **Inquiry:** Inquiry must be used as a basis for instruction in the AVID classroom.
- **Collaboration:** Collaboration must be used as a basis for instruction in the AVID classroom.
- **Tutorials:** A sufficient number of trained tutors must be available in the AVID class to facilitate student access to a rigorous curriculum.

The importance of providing each of the Essentials is incorporated into the professional development programming run by the AVID Center and its implementation guides and manuals, as well as into agreements between the BC Ministry of Education and the school districts, and the Pilot Project's Operations Manual, which was issued to sites that took part in the BC AVID Pilot Project. In principle, the Essentials form a coherent whole that should not be adopted piecemeal. They include numerous non-teaching tasks: recruiting and selecting students; organizing motivational activities inside and outside school; recruiting, training, and coordinating the activities of AVID tutors; and ensuring that

AVID students have support as they enrol in rigorous high school courses, tackle the course work in those classes, and navigate the post-secondary application and financial aid systems. In US implementations, the emphasis is typically placed on university application and enrolment. The BC AVID Pilot Project set out to determine the effect of offering AVID on access to any type of post-secondary education, but also considers university outcomes separately, in case of displacement between different types of programs.

## How Does the BC AVID Pilot Project Test the AVID Program?

Although AVID began in 1980 and is now delivered in nearly 4,500 schools worldwide, the BC AVID Pilot Project is the first large-scale evaluation of the AVID program using a rigorous random assignment design. This approach was chosen to avoid the many challenges that non-experimental evaluations of educational programs face, such as their weakness in separating outcomes due to participant selection from outcomes of the program. Participant selection is a fundamental feature of AVID (one of the 11 AVID Essentials), which means that drawing conclusions from non-randomized evaluations of AVID is very risky. The project funded the implementation and evaluation of the AVID program at 18 pilot sites in British Columbia as a four-year program for up to two consecutive cohorts of students in Grades 9–12.

The project recruited 1,522 Grade 8 students identified as eligible for the AVID class in 2005 and 2006. At 14 of the 18 sites, the Social Research and Demonstration Corporation (SRDC) randomly assigned the eligible students into program, waitlist, and control groups.<sup>2</sup> Those assigned to the program group were offered a place in the AVID elective class; those assigned to the control group were not offered a place in the AVID class and therefore had to choose a different elective course. Waitlist students could take a seat in the class if a vacancy arose. The random assignment ensured that the average characteristics of the program and control groups were identical (Table ES1). Any subsequently emerging differences between the groups can be attributed to the offer of the program, eliminating competing explanations (like student selection). SRDC has collected data from multiple sources on both groups for six years to determine the program's impacts on secondary and post-secondary outcomes including baseline parent and student surveys, Grade 11, Grade 12, and post-secondary student surveys, plus administrative data from many sources: school records at the provincial and district level, post-secondary enrolment data for all BC universities and colleges and student financial aid.

<sup>2</sup> At 4 of the 18 sites, local educators assigned eligible students to program and waitlist groups. SRDC only tracked the implementation of the program at these smaller "case study" sites without calculating impacts, so their results are not included in this executive summary.



### Box 1 Hypotheses about How AVID Achieves Its Effects

The BC AVID Pilot Project began by hypothesizing four different theoretical mechanisms through which participation in the AVID elective might affect students' preparedness for post-secondary enrolment (Dunn et al., 2008). These four mechanisms are not mutually exclusive.

- **AVID as an Academic Upgrading Program:** AVID assumes that the middle-achieving students who volunteer for AVID lack certain academic skills that would allow them to be better prepared for post-secondary education. Since the AVID curriculum involves instruction in well-known study skills, the elective class could be a powerful path through which AVID positively affects students.
- **AVID as an "Untracking" Program:** To the extent that "tracking" — the practice of assigning students to different courses based on an assessment of their academic ability — is in operation, the AVID elective may provide academic support that allows AVID students who are newly enrolled in more advanced high school courses to catch up with their university-bound peers. Since students of average achievement would not usually be assigned to the university-bound "track," the "untracking" (or "retracking") process of AVID may affect AVID students' access to post-secondary education. This interpretation was promoted in an evaluation of AVID by Mehan, Villanueva, Hubbard, and Lintz (1996). Note that tracking is less common in British Columbia than it is in the California schools studied by Mehan et al. and, consequently, there is less scope for AVID to "untrack" students.
- **AVID as a Mentoring Program:** AVID may work by focusing attention on middle-achieving students, connecting them through an active support network to the school's services, and helping them to better coordinate their paths through high school. The AVID elective teacher may play the role of an adult mentor for the students. A committed AVID teacher and site team may thus affect student achievement.
- **AVID as a Peer Group Program:** Students may form close bonds not only with the AVID elective teacher but also with their fellow AVID students because of their active and frequent participation in the AVID elective class. This may create a peer group of students who have similar achievement experiences and expectations. The mutual support and validation provided by the peer group could have a positive effect on the success of AVID students.

Evidence to support the first three of these four hypothesized mechanisms is reported in the text. Peer group effects were explored in survey data collected during Grade 12 but there were no significant impacts detected for the AVID program group.



**Table ES1: Selected Baseline Characteristics of the Impact Sample, by Experimental Group**

Characteristics	Program Group %	Control Group %	Difference (s.e.)
Male	47.64	44.97	2.67 (2.97)
Average age (years)	13.86	13.87	-0.01 (0.02)
Aboriginal	9.02	9.10	-0.07 (1.70)
English as a second language	3.85	5.23	-1.38 (1.03)
Average grade in B-C range	82.73	83.52	-0.79 (2.12)
Never absent	12.15	13.19	-1.04 (1.94)
Absent 7 or more days	24.28	24.81	-0.53 (2.52)
Did homework often or all the time	80.98	81.93	-0.95 (2.26)
Did as little work as possible	7.46	8.20	-0.74 (1.59)
Completed homework on time often or all the time	72.28	75.21	-2.93 (2.58)
Took notes often or all the time	43.82	43.76	0.06 (2.88)
Studied from notes taken often or all the time	42.84	43.75	-0.91 (2.92)
Expect to graduate from high school	99.89	100.00	-0.11 (0.16)
Expect to go to university	67.99	74.03	-6.05** (2.96)
Expect to go to college	22.88	19.09	3.80 (2.68)
Expect to go on to vocational institution	6.63	4.42	2.20 (1.54)
Single-parent family	20.68	18.80	1.88 (2.37)
Family income (\$)	69,540.18	70,218.47	-678.29 (2,490.22)
Mother expects the student to go on to PSE	75.95	79.82	-3.87 (2.67)
Father expects the student to go on to PSE	82.49	84.45	-1.96 (2.31)
Sample size	791	451	

Source: BC AVID Pilot Project baseline survey of parents and students.

Notes: Sample sizes vary for individual measures because of missing values.

This could cause slight discrepancies in sums and differences.

A two-tailed test was applied to differences between the outcomes for the BC AVID and control groups.

Statistical significance levels are indicated as: \* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.



## What Difference Does Offering the AVID Program Make?

One AVID Essential requires that the program be voluntary, so not all students will take up the offer and not all who take up the offer will stay in the class for four years. Given the policy aim to learn what works to change post-secondary outcomes for “middle-achieving” students and the delivery approach of offering AVID as a voluntary program in high schools, the evaluation of BC AVID was designed to measure the effect of *offering* a place in the AVID elective to AVID-eligible students. All experimental impacts derived from the project are thus impacts of the *offer* of BC AVID and *do not* represent the impact of being in BC AVID for four years.

Most impacts estimates in this report are of the experience of those assigned to the program group with those assigned to the control group, equivalent to the impact of the *offer* of BC AVID. In fact, more than 96 per cent of the program group took up the offer and 86 per cent experienced at least 101 hours of the elective class. Yet, half of all the students assigned to BC AVID had left the elective class by the end of Grade 11 and another 10 per cent by the end of Grade 12. Therefore, the impact of the offer on post-secondary outcomes of those who persist in the AVID program for four years is also calculated, for readers interested in the impact on those with extended program exposure.

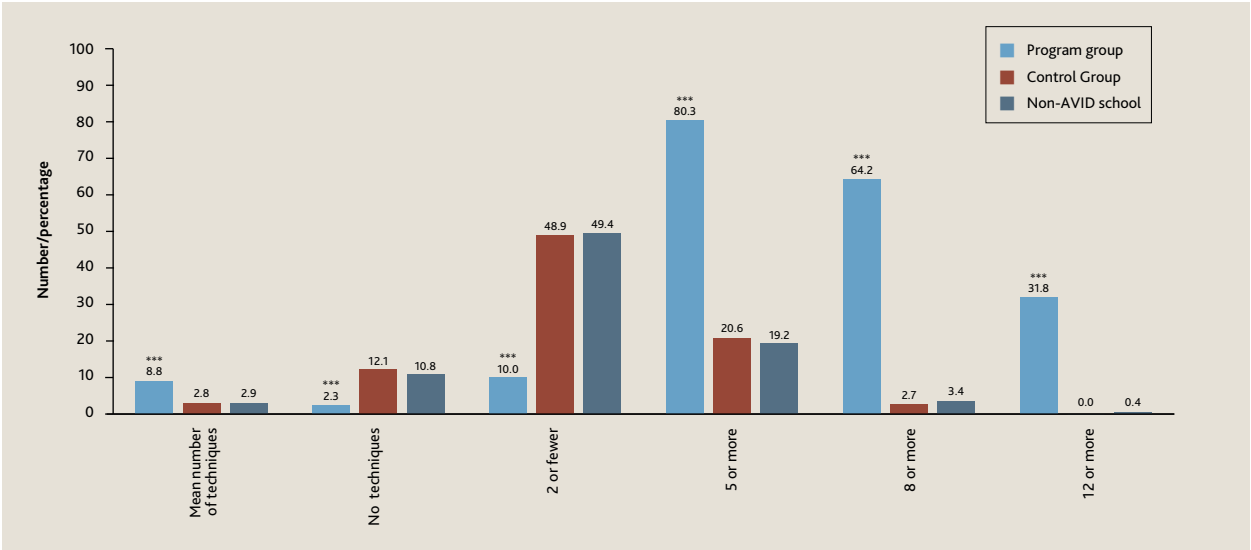
### STUDENTS' EDUCATIONAL EXPERIENCES

BC schools did not comprehensively and consistently implement all program features. As discussed later under 'Interpreting the Results,' although the program met certification requirements set by the AVID Center during 80 per cent of the program delivery period (and could not be certified for the first year of delivery), SRDC found that the program fell short of giving the program a fair test on tutorial and scheduling components. Nonetheless, program group members did report high levels of exposure to AVID techniques. Dunn et al. (2010) reported the project's survey of Grade 11 students' experience of educational strategies and techniques at the 18 participating AVID schools and at 7 non-AVID schools<sup>3</sup>. The survey revealed that, at random assignment sites, techniques associated with AVID were concentrated among the project's program group. Figure ES1 illustrates that 64 per cent of the program group reported frequent exposure to 8 or more of the 17 techniques commonly associated with AVID.<sup>4</sup>

<sup>3</sup> The non-AVID schools were selected to be otherwise as similar as possible to AVID schools, using a propensity-score matching technique.

<sup>4</sup> Since the beginning of Grade 9, exposure to the 17 AVID strategies is counted for Figure ES.1 as follows: (1) attending the AVID elective class often or very often; (2) doing collaborative work all together in small groups often or very often; (3) attending tutorials often or very often; (4) being taught Cornell Notes often or very often; (5) being taught Costa's questions often or very often; (6) being expected to bring questions to tutorials often or very often; (7) working in small groups to help each other in tutorials often or very often; (8) writing Learning Logs often or very often; (9) putting notes in a single binder often or very often; (10) being graded on binders and how they were organized often or very often; (11) having guest speakers often or very often; (12) putting important dates in a calendar or planner often or very often; (13) doing Socratic Seminars three or more times; (14) writing long-term plans three or more times; (15) having teachers advise the class to take challenging courses three or more times; (16) visiting post-secondary institutions two or more times; and (17) taking part in Philosophical Chairs at least once.

Figure ES1: Frequent Experience of 17 AVID Strategies or Techniques during Grades 9 through 11 (Grade 11 Survey Recall)



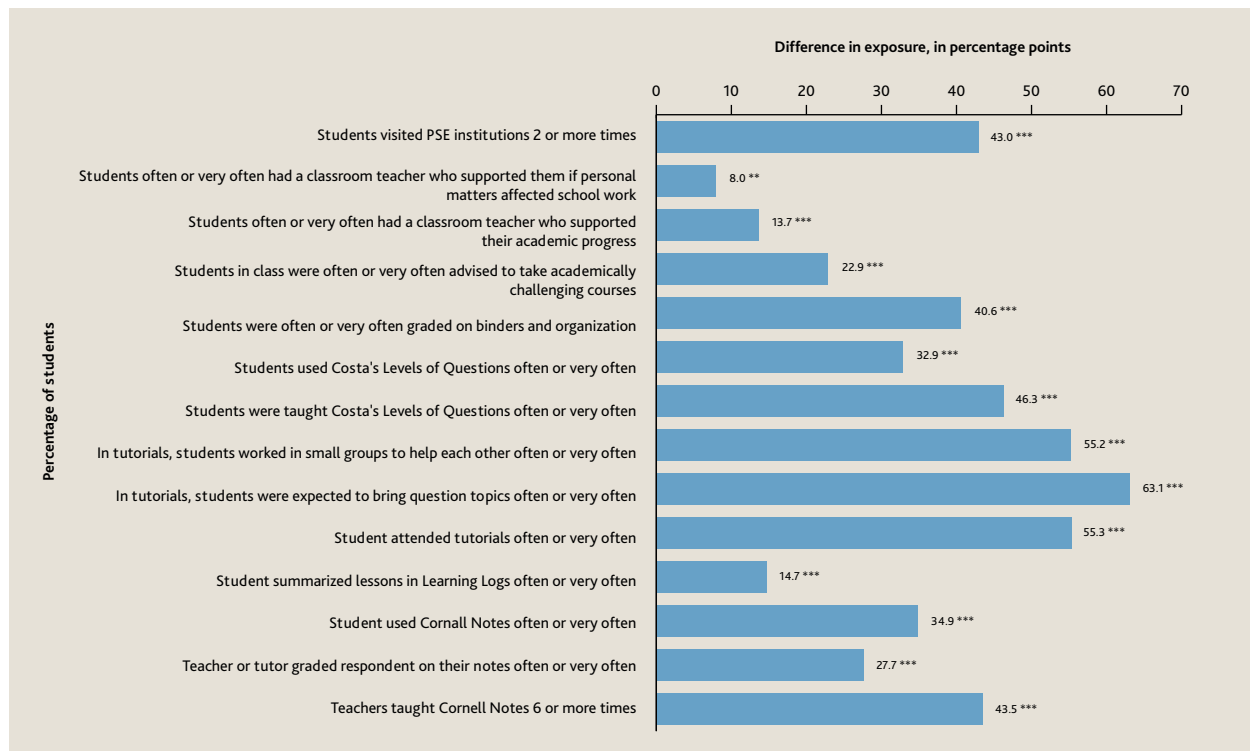
Source: Grade 11 Survey.

Note: Statistical significance tests compared program group experience to control group experience and control group experience to non-AVID school students' experience. Statistical significance levels are indicated as \* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

Less than 3 per cent of the control group reported similar exposure, yielding a difference in exposure arising from the offer of AVID of just over 61 percentage points. On average, program group members had frequent exposure to approximately 9 of these techniques, while control group exposure was limited to an average of 3. This difference in learning experience generated by the offer of AVID is important because it allows the project to demonstrate the impact of

exposure to these strategies, whether it is small or large, on the current and future educational outcomes of the program group. Figure ES2 shows the difference offering AVID made to Grade 11 students' reports of instruction in, and use of, several *specific* strategies and techniques used in AVID. These differences are all calculated by subtracting the proportion of the control group reporting exposure to a technique from the proportion of the program group reporting this exposure.

Figure ES2: Increase in Program Group's Exposure to AVID Strategies and Techniques



Source: Grade 11 Survey.

Note: Statistical significance tests compared program group reported experience to control group reported experience. Statistical significance levels are indicated as \* = 10 per cent;

\*\* = 5 per cent; \*\*\* = 1 per cent.

Offering the program brought about significant increases on students' frequent use of Costa's Levels of Questions, Cornell Notes, and Learning Logs.<sup>5</sup> Program group students were significantly more likely to report frequent support from a classroom teacher for their academic progress and for personal matters that could affect their school work. These differences provide some evidence to support that the first and third of the four hypothesized mechanisms (academic skills upgrading and mentoring in Text Box 1) by which AVID may change students' educational experiences were being implemented.

There was exposure to some AVID techniques among the control group; however, as shown in Figure ES1 this was, for the most part, similar to that reported by students at non-AVID schools. Because many AVID techniques are educational "best practices" they are in common use outside of AVID programs. The similarity in exposure between the BC AVID control group and students in non-AVID schools shows that much of the exposure to AVID techniques among control group members is due to pre-existing, if limited, use of AVID techniques in BC high schools rather than due to spillover of the techniques outside the AVID elective class caused by the project itself.

<sup>5</sup> The AVID note-taking system is an adaptation of the sophisticated Cornell system, in which students take detailed notes from class lectures and texts in a wide right-hand margin, and develop clarifying ideas or questions on those notes in the left-hand margin.

Costa's levels of questioning are key to the basis of the AVID program in inquiry rather than lecture. AVID students are expected to differentiate higher order from lower order questioning. The AVID curriculum includes Costa's three-part Model of Intellectual Functioning. Level One questions ask a student to gather and recall information that can be found explicitly within a given text; Level Two questions ask for analysis or inference from what is implied in a text; and Level Three questions ask the student to evaluate and apply information, deriving answers from his or her own prior knowledge or experience. Learning logs are a form of journaling, intended to help students process the work they do in class. In learning logs, students write answers to questions such as, "What did I learn today? What questions do I have about what I learned? What connections can I make to previous ideas or lessons?"

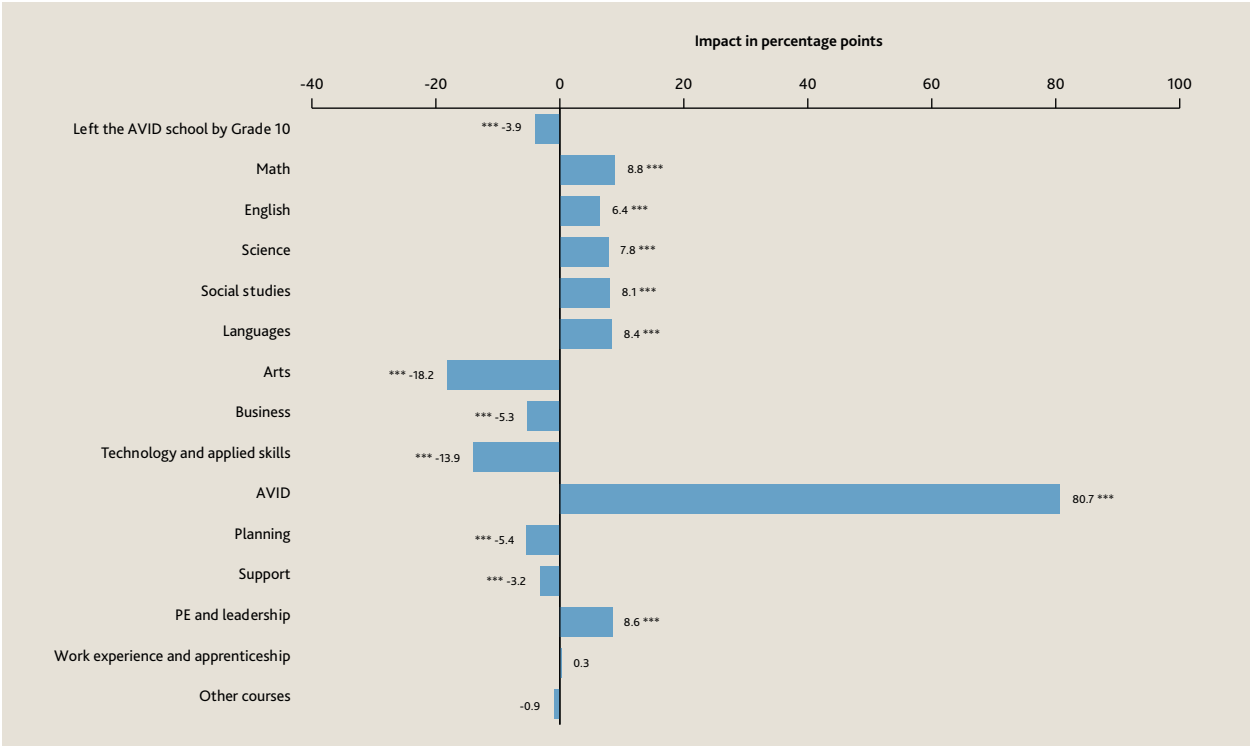
STUDENTS' COURSE CHOICES AND ACHIEVEMENT

The program offer brought about significant changes in the courses students took, in the examinations they sat, and the marks they received. These changes were as predicted by the program model, meaning students took more rigorous courses. While their marks fell initially in these more rigorous courses, they had recovered to achieve grades equivalent to those the control group was obtaining in less rigorous courses, by Grade 11. The program offer also led to more students staying in the school where AVID was offered.

Results in this section inform our understanding of what students do more of when offered AVID and what they do less of. For example, in Grade 9, program group students took the AVID elective class in lieu of other elective courses,

primarily in fine arts and applied skills. Enrolment in fine arts courses by program group students decreased by 18 percentage points and in applied skills courses by 14 percentage points (Figure ES3). During Grade 10 (not shown), students offered AVID had higher enrolment in all but one type of course meeting the interpretation of "rigorous" adopted by the project — courses identified as requirements or prerequisites for entry into undergraduate programs at the University of British Columbia (UBC). The offer of AVID increased enrolment in one of the most rigorous math courses — Principles of Mathematics 10 — by 9 percentage points.<sup>6</sup> There was a positive impact on the proportion taking between four to eight rigorous courses (Figure ES4). By Grade 11, the additional enrolment in the AVID elective due to the AVID offer was displacing PE and leadership, support programs and, more marginally, business subject areas (Figure ES5).

Figure ES3: Impacts on Courses Completed in Grade 9



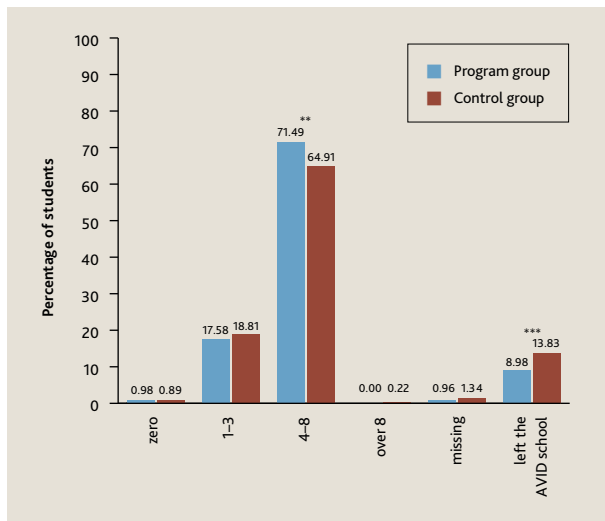
Source: School district data.

Note: Statistical significance tests compared program group course credits to control group reported course credits. Statistical significance levels are indicated as \* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

6 The BC curriculum has changed since the project period. In particular, later cohorts of students have been offered different Mathematics courses.



**Figure ES4: Number of UBC Entry Requirements or Prerequisite Courses Taken in Grade 10**



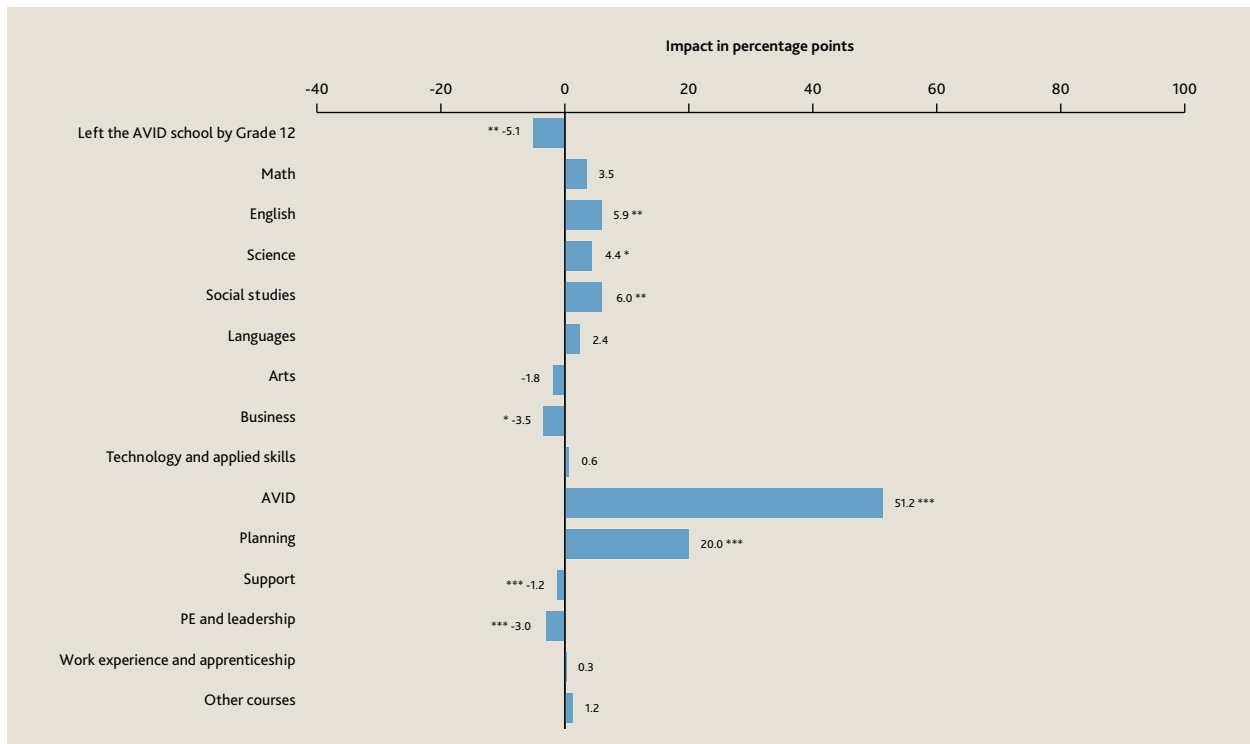
Source: School district data.

Note: Statistical significance tests compared program group course credits to control group course credits. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.



**Figure ES5: Impacts on Courses Completed in Grade 11**



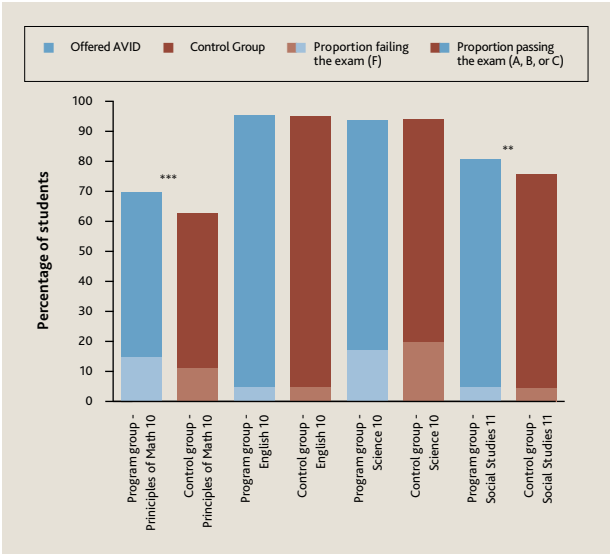
Source: School district data.

Note: Statistical significance tests compared program group course credits to control group course credits. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

The initially positive effect on the rigorous course choices of program group students was seen in provincial examination data (Figure ES6). By the end of Grade 11, program group students were more likely to have taken the courses of Principles of Mathematics 10 and Social Studies 11 — both courses that are provincially examined and are included in UBC entrance requirements. These findings align with the “untracking” hypothesis for how AVID may increase access to post-secondary education (Text Box 1).

Figure ES6: Participation in Provincial Examinations in Grades 10 and 11: Proportions Passing and Failing

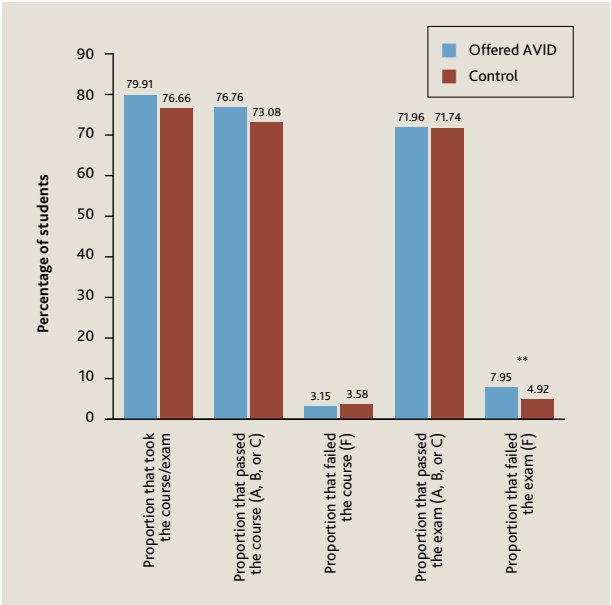


Source: BC Ministry of Education data.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as  
\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

The offer of AVID significantly increased the proportion of students who took the rigorous Principles of Mathematics 10 from 63 to 70 per cent, and correspondingly reduced the proportions taking Essentials of Mathematics 10 (from 21 to 18 per cent) and Applications of Mathematics 10 (from 16 to 9 per cent) (Dunn et al., 2010). All these courses were provincially examined. With significantly more taking the Principles of Mathematics 10 exam, more also failed it — a result that was marginally significantly. However, the proportion passing the course (based on a Grade that takes into account their exam mark and work in class) increased from 59 to 67 per cent. There were no significant differences in the proportions taking the English 10 or Science 10 or English 12 examinations. English 12 was included in UBC entrance requirements. The only significant result was that program group members were 3 percentage points more likely to fail the English 12 exam (Figure ES7).

Figure ES7: Impacts of AVID Offer on English 12



Source: BC Ministry of Education data.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as  
\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

## HIGH SCHOOL ENGAGEMENT

Despite showing no overall improvement in high school marks and exam performance by Grade 12, some students were less likely to drop out of high school as a result of the AVID offer (Figure ES8). Specifically, offering AVID to boys reduced the

proportion dropping out from 11 to 5 per cent. This is a substantial finding as it halves their high school dropout rate. Nonetheless, and perhaps surprisingly, there were no impacts on high school graduation rates (not shown).

### Box 2 An Implementation Dip?

In earlier research on the implementation of AVID (cited in Dunn et al., 2008), teachers identified a so-called “implementation dip” that could be experienced by AVID students. When students change their method of learning and switch to a more rigorous curriculum, they can initially experience lower grades and frustration and can require extra encouragement, time, and guidance before they see improvement. In the “dip,” grades initially become worse, causing some (possibly misplaced) concerns from students, parents, and staff that the program is not working. The pilot project analyzed participants’ course marks and found some evidence of such a dip in Grades 9 and 10 and, by Grade 11, also some evidence of recovery.

Initially, in Grade 9, the program group had somewhat lower grades than the control group. As reported in Dunn et al. (2010), significantly more had Cs (81 versus 73 per cent), for example, and more had no As (37 versus 29 per cent). But these differences had disappeared by Grade 11, suggesting recovery from the “dip” and also implying that AVID students were getting as good or better marks than the control group while pursuing more rigorous coursework.

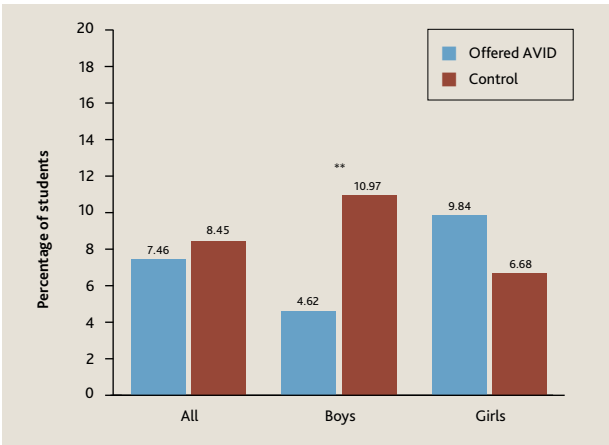
The “dip” lowered initial grades but did not lead to more course failures. The course marks of program group students indicated, in general, that fewer of them were receiving failing grades in their courses.

- In Grade 9, 80 per cent of program group members had no Fs (failing grades), compared to 74 per cent of the control group.
- In Grade 11, 60 per cent of the program group had no Fs, compared to 53 per cent of the control group.

Evidence of recovery from the “dip” — combined with evidence that it was not severe enough to lead to students recording more Fs — is important. The pattern of impacts on marks suggest that the struggle program group students experienced when introduced to more rigorous coursework was relatively short-lived.



Figure ES8: Impacts of AVID Offer on Dropping Out of High School



Source: 66-month follow-up survey.

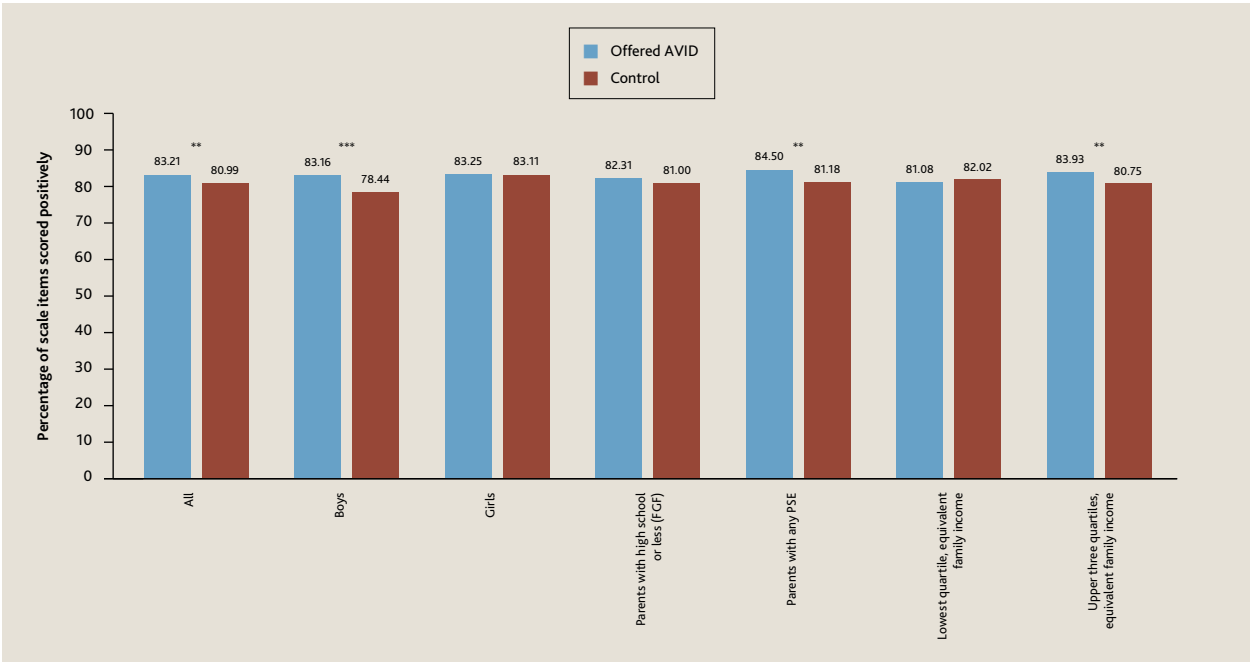
Note: Statistical significance tests compared program group reported experience to control group reported experience. Statistical significance levels are indicated as  
\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

The Grade 12 survey also incorporated questions used in Statistics Canada's Youth in Transition Survey to measure high school engagement, through construction of an index. Academic identification was measured as the percentage of all relevant items that students related to positively, including items such as getting along with teachers, being interested in learning in class, and the importance of school. Figure ES9 indicates that the offer of AVID raised academic identification in the program group slightly by 2.2 percentage points on this scale. The impact was larger among boys (4.7 percentage points), as well as among students whose parents had some post-secondary experience (3.3 percentage points) or who were in the upper three quartiles of the family income distribution at the time of the Grade 8 baseline parent survey (3.2 percentage points).

OTHER IMPACTS BY GRADE 12<sup>7</sup>

As a result of the AVID offer, Grade 12 students reported being more informed about career options. Specifically, when presented with the statement "I did not have enough information about my career options to make good decisions about my education when I was in high school" 31 per cent of the control group agreed or strongly agreed while the corresponding proportion in the program

Figure ES9: Impacts on High School Engagement Index: Academic Identification Score



Source: 66-month follow-up survey.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as  
\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

7 Tables not included but appear in the main report, Ford et al. (2014).





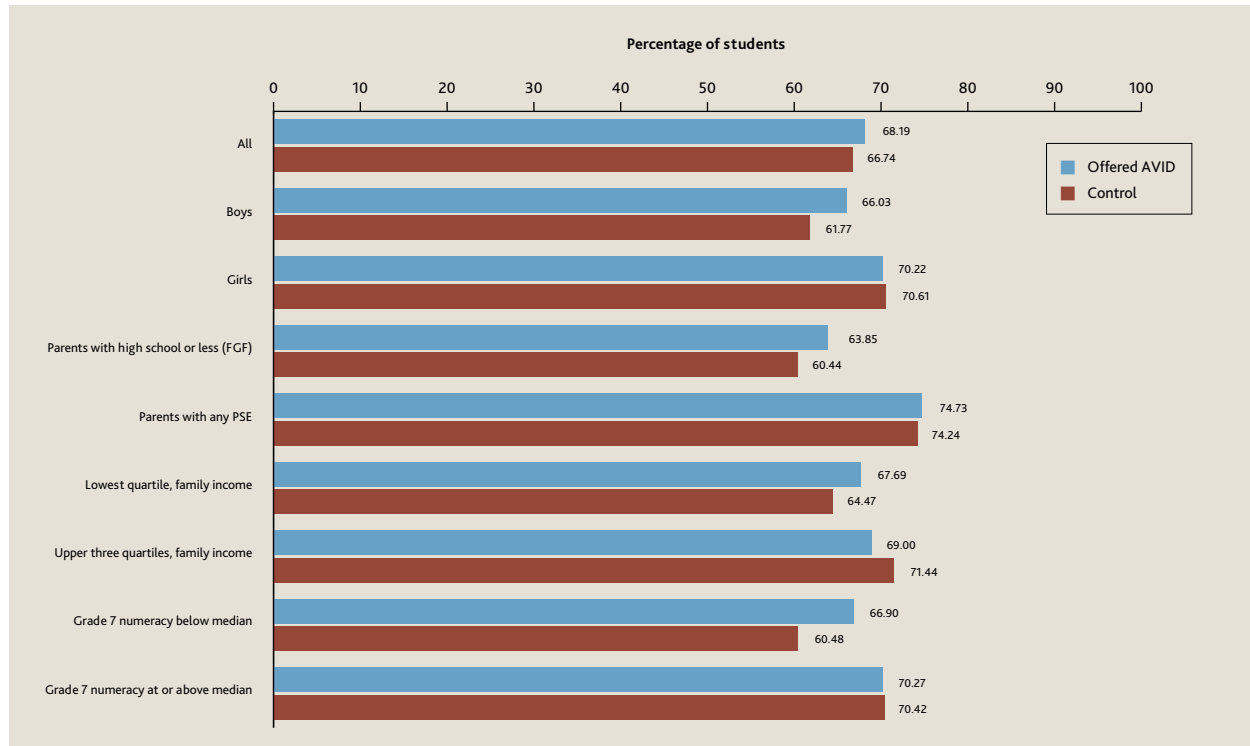
group was 25 per cent. The difference was particularly large among girls (36 versus 24 per cent, respectively), but not among boys. It is interesting that boys experienced an increase in academic identification and a decline in dropping out of high school while AVID's career education components seem to have had a larger influence on girls.

The offer of AVID significantly raised the proportion of students reporting familiarity with student financial aid from 61 to 70 percentage points. The impact was particularly large among boys (from 54 to 68 per cent). Other sub-groups reported increased familiarity as well, including those whose parents had some post-secondary education (from 59 to 70 per cent) and those were in the upper three quartiles of the family income distribution at baseline (from 60 to 69 per cent).

## POST-SECONDARY EDUCATION RESULTS

The key outcome of interest in the BC AVID Pilot Project is the impact of making four years of AVID available to middle-achieving students in Grade 9 on their rates of post-secondary enrolment five years later. Analysis to this point has shown that offering AVID to such students in BC produced a mixture of modest effects while they were still in high school. On the one hand, the proportions of such students who were engaged in school, who had sufficient knowledge of their career options and of student financial aid increased. On the other hand, given the program's focus on college preparation and academic enhancement, it is surprising that results did not extend beyond increasing the proportions of students who took and passed more rigorous Grade 10 Math and Grade 11 Social Studies. By Grade 12, students were in little better position than they would have been without AVID to gain entry into university (the ultimate goal of the AVID program) — or any other level of post-secondary studies for that matter.

Figure ES10: Impacts on PSE Applications (Any Post-secondary)



Source: 66-month follow-up survey.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

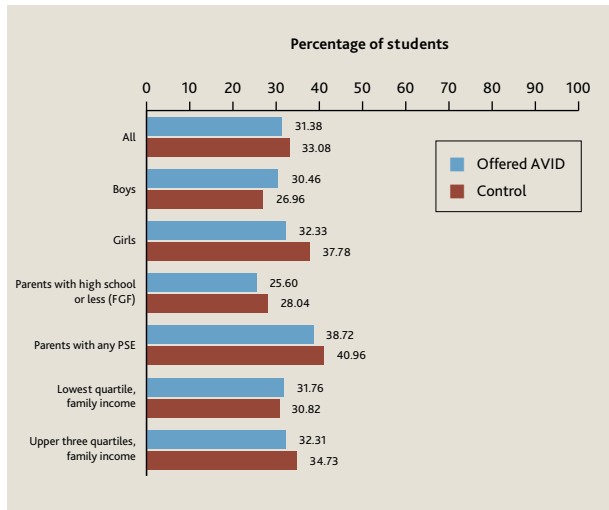
Making AVID available did not increase the proportion of students making applications to post-secondary programs nor enrolment in any kind of post-secondary education (Figures ES10, ES11a–d, ES12, and ES13a–d). There was no impact on enrolment when all types of post-secondary are combined, nor on enrolment in any one type of post-secondary education program. The offer of AVID did not increase university enrolment (its primary post-secondary target in US implementations of the program) and this result holds for virtually all subgroups examined. There is a large difference observed in enrolment for the subgroup identified as scoring low in the standardized Grade 7 test of numeracy (called the Foundation Skills Assessment or FSA), but this difference is not statistically significant.<sup>8</sup> In general, post-secondary applications and enrolment did not improve as a result of offering AVID. Given the goal of the program, these results are surprising; however, given earlier findings on academic impact in senior high school, they are perhaps less surprising.

Application rates for student financial aid did show some increases as a result of the AVID offer, but not sufficiently to be statistically significant (Figure ES14). This finding merits some qualifications. First, BC AVID did not raise post-secondary application rates, so it might be considered inappropriate to expect student financial aid applications to increase as a result of the program. However, the program did have a substantial impact on reported familiarity with student financial aid. Thus, among the similar proportions who applied for post-secondary education in the program and control groups, the rate at which the program group applied for student financial aid could have been expected to be substantially higher. Such an increase did not materialize.

<sup>8</sup> The impact shown in Figure ES12 (of 3 percentage points) is for those scoring below median on the numeracy assessment. The impact for those scoring below the 25<sup>th</sup> percentile was larger, at 13 percentage points (not shown), but still not statistically significant. The sample size is too small to exclude the possibility of this results arising by chance.



Figure ES11a: Impacts on Applications to University

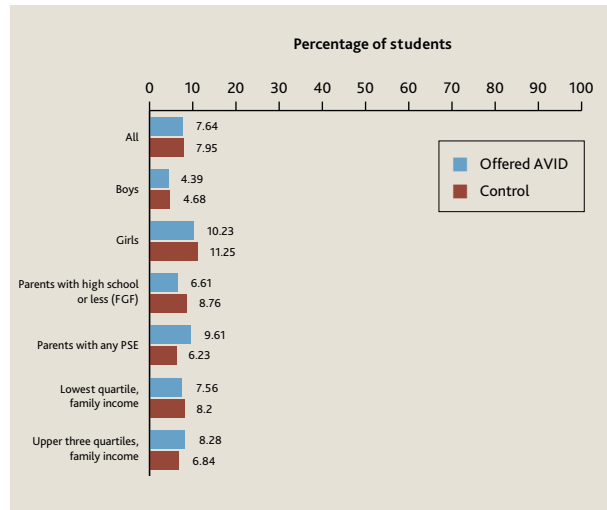


Source: 66-month follow-up survey.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

Figure ES11c: Impacts on Applications to Vocational Institute

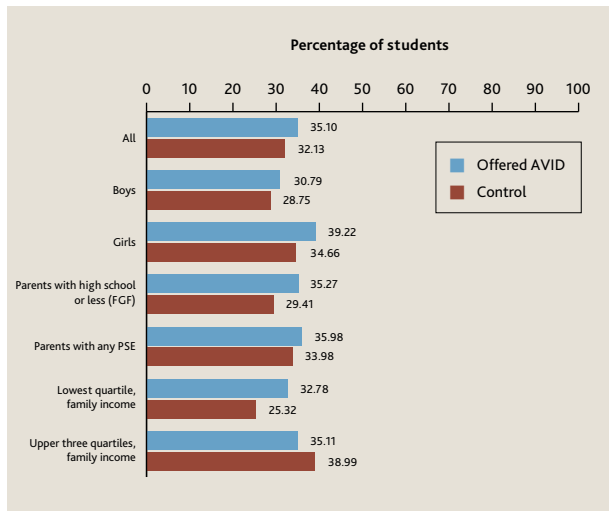


Source: 66-month follow-up survey.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

Figure ES11b: Impacts on Applications to Community College

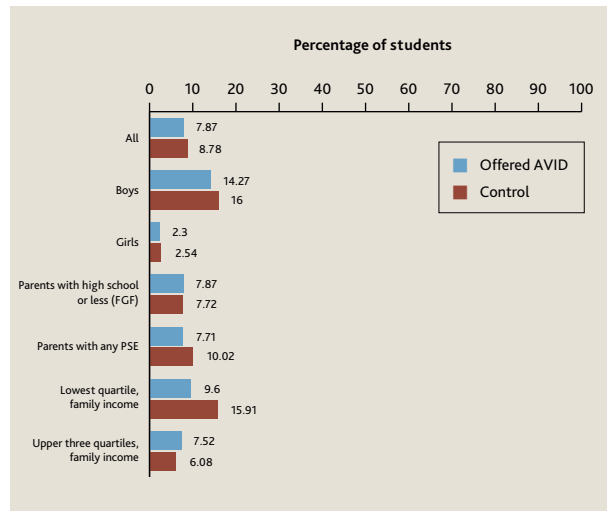


Source: 66-month follow-up survey.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

Figure ES11d: Impacts on Applications to Become an Apprentice

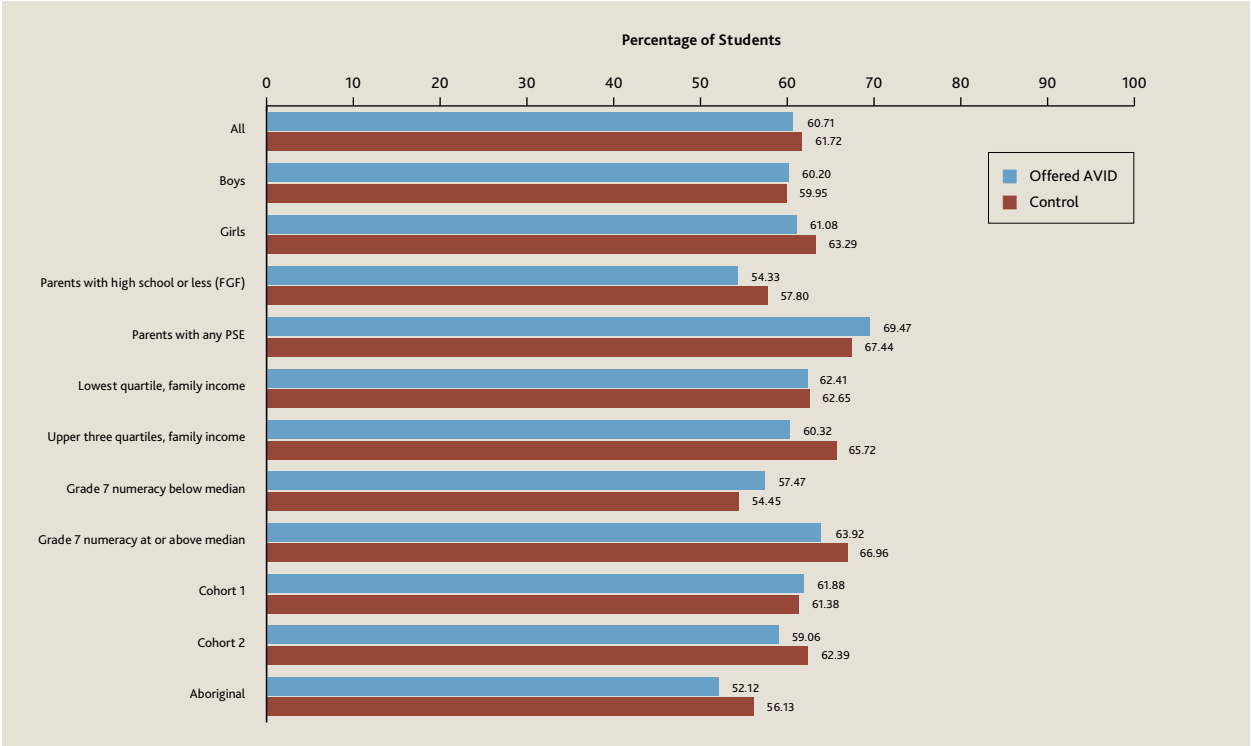


Source: 66-month follow-up survey.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

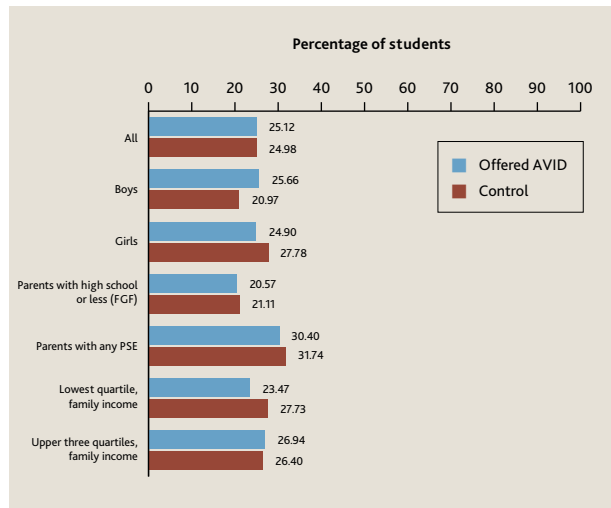
Figure ES12: Impacts on PSE Enrolment



Sources: 66-month follow-up survey and linked secondary-postsecondary student records.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as  
\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

Figure ES13a: Impacts on University Enrollment

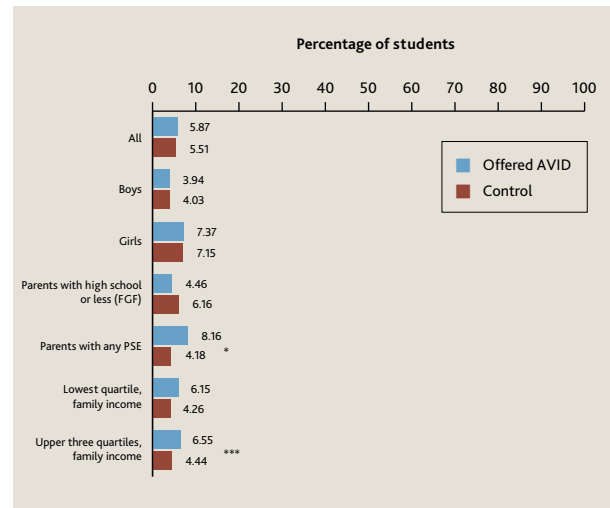


Sources: 66-month follow-up survey and linked secondary-postsecondary student records.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

Figure ES13c: Impacts on Private College/Vocational Institute Enrollment

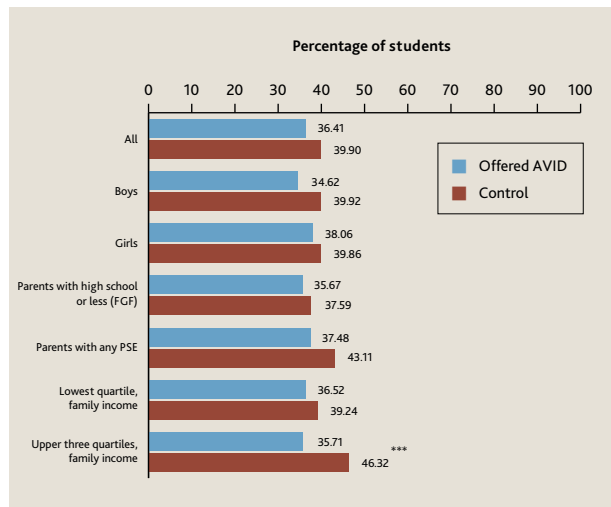


Sources: 66-month follow-up survey and linked secondary-postsecondary student records.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

Figure ES13b: Impacts on College Enrollment

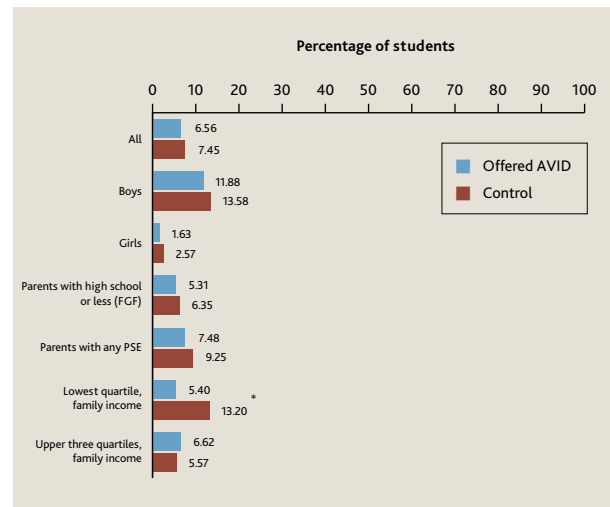


Sources: 66-month follow-up survey and linked secondary-postsecondary student records.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

Figure ES13d: Impacts on Apprenticeship Enrollment

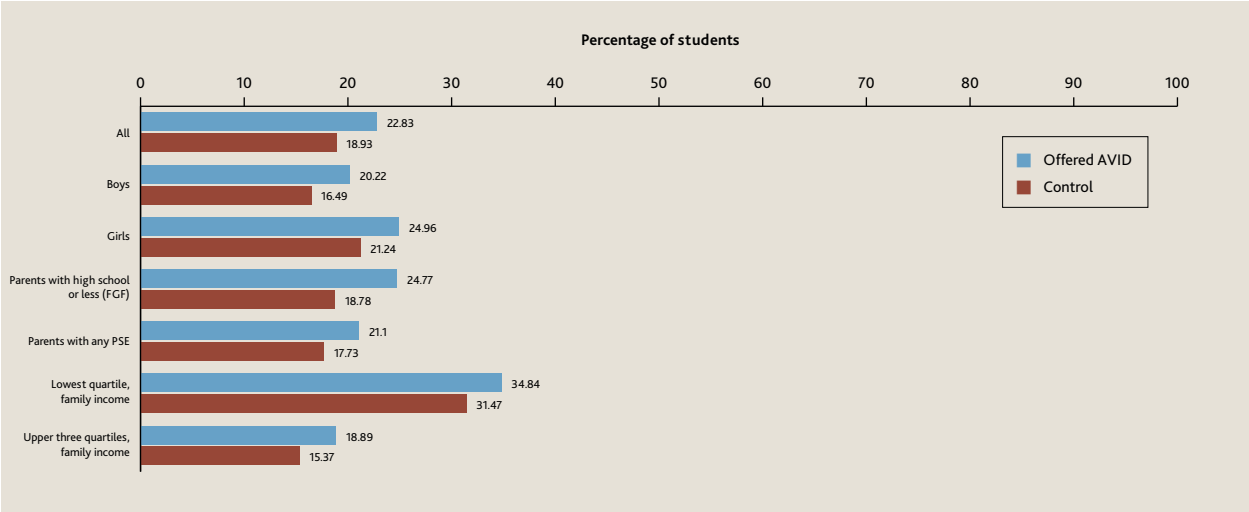


Sources: 66-month follow-up survey and linked secondary-postsecondary student records.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as

\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.

Figure ES14: Impacts on Applications for Student Financial Aid



Sources: 66-month follow-up survey; student financial aid data.

Note: Statistical significance tests compared program group exam participation to control group exam participation. Statistical significance levels are indicated as  
\* = 10 per cent; \*\* = 5 per cent; \*\*\* = 1 per cent.



## Interpreting the Results

The BC AVID results have been anticipated for some time given that they represent the very first experimental findings on large scale implementation of the AVID program. The lack of program impacts on outcomes that represent key objectives of AVID is surprising, especially given that many previous (non-experimental) studies of the AVID program (e.g., Mehan et al., 1996; Freedman, 1998; Slavin & Fashola, 1998) have concluded that AVID increases post-secondary enrolment among students who are academically “in the middle.”

Before drawing conclusions on the effectiveness of the AVID program, it is important to assess critically the findings against some possible alternative explanations for the results. The hypothesized explanations are considered in turn below. Some of the hypothesized explanations can be easily dismissed, but others remain plausible.

- **Statistically significant impacts not being detected because the test was too small to produce sufficiently precise estimates. This situation could apply when mean program outcomes appear different from mean control outcomes but the sample size is too small to eliminate the possibility that chance produced the observed differences.**

This explanation can be fairly confidently ruled out. While it is true that the sample sizes are low for subgroup analyses, many of the differences induced in the post-secondary period are in fact negative (albeit statistically insignificant) which makes finding positive impacts simply by running a larger-scale experiment very unlikely. Other statistically insignificant impacts are only slightly positive. One notable exception is the post-secondary enrolment impacts for the bottom quartile of the Grade 7 FSA numeracy distribution, which has large, positive, but statistically insignificant impacts.

- **Attrition from the AVID class leading to less exposure to the program than would be sufficient for AVID programming to have impacts on students' learning outcomes.**

Attrition from the BC AVID classes was not negligible. Approximately half (51.3 per cent) of BC AVID students departed from the class by the end of Grade 11 and an additional 12.6 per cent departed in Grade 12. Choosing

another elective was the most frequent reason for departure, followed by moving to another school. It is possible to argue that the program might have changed outcomes for more students had they continued to attend classes for longer periods of time. However, the intervention that the project has tested is the *offer* of the AVID program. Thus, the impacts reported here represent the effect of this “intention-to-treat” the targeted group: students eligible for the program, selected because they met program selection criteria. The AVID program is voluntary (this is in fact a requirement of AVID Essential 1), and since more than 96 per cent of eligible students assigned to the program group attended at least one class (Dunn et al., 2008) and more than 80 per cent obtained full credit for at least AVID 9 (Figure ES3), it is difficult to derive a treatment on the treated effect (estimating the impact of the program on those who took the program) by eliminating non-participants. Since the AVID program is generally introduced to raise achievement for a key target group, but cannot be forced upon students who meet those criteria, it is the intention-to-treat effect that is the more relevant metric for assessing the value of the AVID program as a policy solution for raising the achievement of this target group. In other words, policy makers will commit resources to AVID because of its potential to improve outcomes for the target group (what is measured here), not because of its potential to improve outcomes for just those members of the target group who have the propensity to attend classes for four years. Nonetheless, the project has estimated an impact for this group predisposed to extended program exposure (Text Box 3), and the impact of receiving four years of AVID on post-secondary enrolment for such students was also not significant (or negative with respect to apprenticeships).

- **Estimates of impacts being depressed due to “spillover”/“contamination” — delivery of the program to the control group producing unanticipated improvements in the performance of the control group — or due to unintended improvements in the performance of members of the control group brought about by their reaction to being assigned to the control group.**

It is possible that some AVID techniques could have spilled over from AVID students to non-AVID students within the same AVID schools. However, there was little evidence of spillover based on reports from three different groups of students of their experience of different educational strategies associated with the program, assessed in Figures ES1 and ES2. Control group students were just as likely to experience techniques associated with the program as were students in similar,

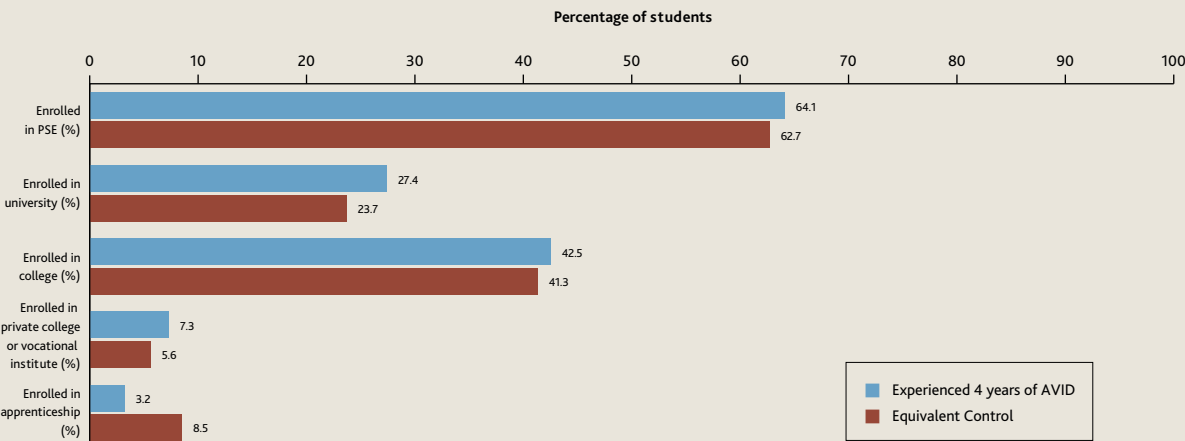
but non-AVID, schools indicating that there is back-ground use of some strategies in BC schools, although nowhere near the scale of use of strategies experienced by the program group in program schools. The students in equivalent, but non-AVID, schools were also found more likely to attend PSE than students in the program and control groups, which does not support the idea that the control group was more likely to attend

post-secondary education due to receipt of the AVID strategies. The same evidence more or less rules out the potential explanation that the control group may have responded positively (made additional efforts of their own accord) in response to the apparent inequity caused by being randomly assigned to a group not receiving the program offer.

Box 3 BC AVID: Impacts on Students with High Exposure to AVID Activities

In the main analysis, the impacts of making BC AVID available to "middle-achieving" students are estimated because this provides the most realistic estimates of a voluntary program's average impacts since it includes the effects of realistic participant reactions to a program such as attrition and non-compliance as well as substituting or compensating activities participants may engage in (such as not taking another elective). However, the main analysis does not directly evaluate full exposure to the intended treatment on those who receive it. SRDC therefore undertook an alternative analysis of students with high exposure to BC AVID and compared their outcomes to those of control group members, weighted to account for their propensity to receive high program exposure. This analysis attempt answered a different question than the policy question in the main report. It considered only a subgroup of the whole target group that the program intends to help: only those who comply over the long term and voluntarily receive AVID in all four years of the program. The alternate analysis uses a state-of-the-art propensity score matching technique that requires the acceptance of more assumptions than the main experimental analysis. These are included in a more thorough account in the main report. If the assumptions hold, the results point to more complete exposure leading to a modest amplification of the results seen in the main report. High program exposure does not increase significantly post-secondary enrolment, as shown in the figure. High program exposure does modestly increase students' expectations of such enrolment and their knowledge of student financial aid, as well as altering the types of post-secondary programs they apply for (more make applications to college and fewer take up apprenticeships). The results do not alter the conclusions of the main analysis.

Impacts on postsecondary enrollment for high exposure subgroup







■ **Low levels of fidelity to the BC AVID model in the program schools' implementation of the program.**

The implementation of the program may have been at levels too low in fidelity to the BC AVID model at many schools. The main report (Ford et al., 2014) summarizes how program fidelity scores were generated for each AVID class cohort at each school. These scores vary somewhat between class cohorts. Impact analysis using these scores to derive subgroups of class cohorts experiencing higher and lower fidelity programming demonstrates that impacts do not vary between schools with high and low scores. There are no impacts for schools implementing AVID at higher fidelity according to these criteria (post-secondary enrolment rates were 63.6 per cent for the program group versus 66.1 per cent for the control group) just as there are no impacts for schools implementing AVID with lower fidelity (post-secondary enrolment rates were 57.5 per cent for the program group versus 56.6 per cent for the

control group). In other words, within the bounds of implementation fidelity observed in the study, impacts did not vary by the degree to which schools implemented AVID successfully.

Although impacts did not vary according to school fidelity scores, it is possible that no schools implemented BC AVID adequately to meet a sufficiently high threshold of AVID program delivery necessary to generate impacts. However, it should be noted that because the Canada Millennium Scholarship Foundation met the program start-up and implementation costs, BC AVID schools were well resourced. Implementation research throughout the project reports (Dunn et al., 2008; 2010) has found the educators involved highly keen and motivated to implement the program and, throughout, project supports and training were at high levels. These conditions — motivated staff with adequate resources and training — should present optimal conditions for best efforts to be applied to putting in place programming that meets all criteria. Possibly, British Columbia schools pose structural barriers to high fidelity implementation that mean the necessary threshold for AVID criteria would be very difficult to meet. Possibly, the ideal conditions for program fidelity are very hard to achieve *in general*. If so, it could also be the case that other AVID schools, whose implementation is less rigorously assessed, also fall short on delivering program fidelity adequate to generate impacts on post-secondary outcomes, although such conjecture is very difficult to assess. Since this explanation remains a possibility, stressing the (albeit potential and untested) importance of adhering to the highest levels of AVID implementation fidelity would seem a valuable precaution for AVID schools to reach necessary thresholds to achieve post-secondary impacts for their target students.

■ **Inappropriate selection of students eligible to receive the program.**

It could be argued that the selection of students eligible to receive the program was problematic. This issue was given considerable thought at the project development phase, as reviewed in Dunn et al. (2008, Chapter 4). A standardized approach to the selection of AVID-eligible students was developed for BC, with AVID Center's involvement. It nonetheless remains plausible that students falling within the "middle-achieving" criteria in British Columbia high schools may differ in several characteristics from those typical among middle-achieving students from (generally) lower-income neighbourhoods in US urban areas. In fact, the post-secondary enrolment rate observed for students meeting the eligibility criteria for BC AVID is

quite high, even when not offered the program (about 62 per cent). In this context, when six in ten offered the program will attend post-secondary education anyway, it may be reasonable to ask whether offering AVID has much potential to boost post-secondary enrolment. However, the goal of AVID (at least in the US) is to raise four-year college (university) attendance rates. About 25 per cent of students meeting the eligibility criteria for BC AVID attended university, which leaves more room for improvement: improvement that was not seen.

■ **The program and control groups may have differed in some unobserved ways that were correlated with the probability of attending post-secondary or university.**

In fact, members of the program and control groups were on average identical on nearly all observed characteristics except one: that the control group was more likely to aspire to a university education (Table ES1). Although the impact analyses presented here account and control for such differences through a regression adjustment,

it is conceptually possible, albeit very unlikely, that the program and control groups were different in some other important but unobserved manner.

■ **Taking up AVID may possibly displace or defer important learning opportunities that also influence post-secondary outcomes.**

Although it has already been shown that the offer of AVID led to students taking more challenging courses, it is also true that attending the AVID class comes at the expense of not taking another elective class. Figure ES3 shows that offering AVID significantly reduces attendance in Grade 9 arts, business, technology and applied skills and planning courses. At the same time, it appears that the net benefit of offering AVID (in exchange for one elective per semester throughout high school) on post-secondary outcomes is close to nil. It remains plausible then that losing another elective (or the peer group changes that result) may have negative impacts that AVID's positive impacts cannot offset.





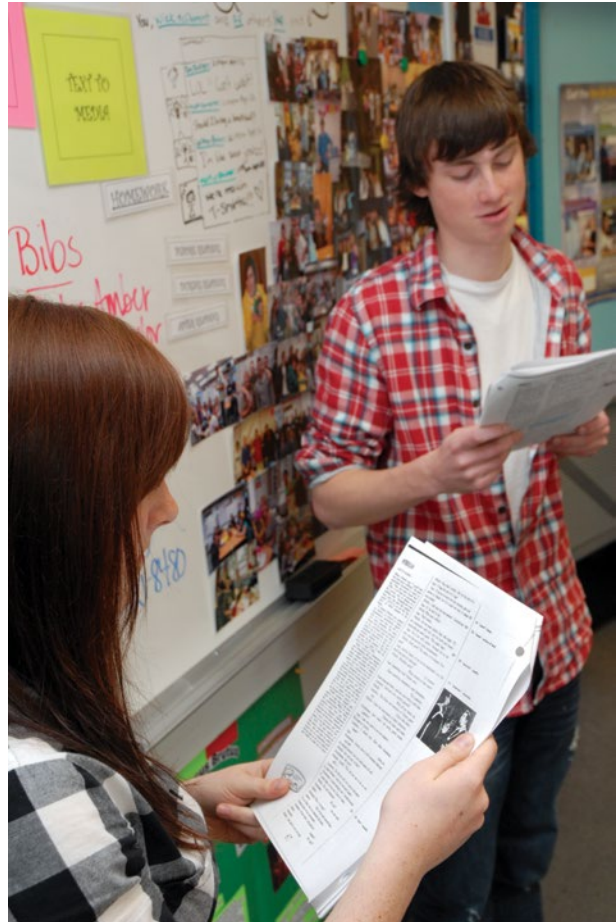
■ **It is possible that AVID is offered too late to be effective.**

The program implementation dip has already been documented. AVID 9 students actually saw their marks decline across their courses initially as they coped with the more challenging course load. The sudden jump in course difficulty and shift in learning strategies may have been too disconcerting for students to handle. In other words, it may take more than four years to truly master the techniques and become an effective learner by the later years of high school (when course choices and marks are strong determinants of post-secondary enrolment). Providing students with AVID tools prior to high school (as is the intent with AVID Center's introduction of AVID Elementary programming) may target a more opportune time to develop effective learning techniques and then gradually improve upon them. Some jurisdictions have already adopted school-wide AVID programming in their elementary schools. However, this was not tested in BC.

■ **It is possible that AVID does not offer "middle-achieving" students in British Columbia any additional advantages compared those already offered within the existing school system.**

If the school system already provides middle-achieving students with supports that are equivalently effective as those of AVID for post-secondary success, the target group for the program may need to be adjusted, at least for BC implementations. There is very modest evidence in the report suggesting that somewhat below middle-achieving (i.e., low achieving) students might benefit more. If this explanation is plausible then schools considering offering AVID in future will need to determine whether or not the existing curricula and other resources already provided help the group of students they intend to target sufficiently already.

The fact that certain alternative explanations cannot be totally ruled out creates opportunity for further learning and program development in the sense that lessons can be drawn from dissecting the rich data the study has produced to explore why offering AVID had little to no impact on the primary outcomes of interest.





## Conclusion

The offer of the AVID program produced many positive impacts for BC students, including: raised high school engagement, reduced high school dropout rates among boys, improved knowledge of career options, and raised familiarity with student financial aid. The program had a positive impact on rigorous course choices. However, this impact was short lived. Moreover, the program had no positive impact on high school marks and performance on Grade 12 provincial exams and no impact on high school graduation. Thus, students may not have been better positioned to gain entry into university or other post-secondary programs. Perhaps as a result of this, the BC AVID program did not increase applications or enrolment in university or in other post-secondary studies.

Many possible explanations for these findings have been discussed. Some relate to the design of the BC AVID pilot project, while others concern features of the delivery model of the AVID program, including selection of eligible students. Available evidence is sufficient to dismiss several explanations but others cannot be so easily ruled out. The results raise considerable doubts about the effectiveness of offering the AVID program in meeting the objectives of raising either university or post-secondary enrolment among "middle-achieving" students in British Columbia. However, the discussion of possible explanations points to several recommendations for program delivery that may prove useful. These include taking into account local prevailing conditions and existing supports in deciding whether and how to implement the program, targeting a different group for the program, considerably earlier introduction of AVID learning strategies and promotion of higher fidelity in program delivery.





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