



Full Report

BC AVID Pilot Post-secondary Impacts Report



CANADA MILLENNIUM SCHOLARSHIP FOUNDATION
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The Authors

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Chapter 1: Introduction to the BC AVID Pilot Project

Introduction

This report is the third publication on the evaluation of the British Columbia (BC) Advancement via Individual Determination (AVID) Pilot Project, part of a series of pilot projects of the now defunct Canada Millennium Scholarship Foundation that were established to find out what works to increase access to post-secondary education in Canada. BC AVID was launched by the Foundation as a joint venture with the British Columbia Ministry of Education to implement and rigorously test the US college-preparatory program, AVID, in BC high schools. It is the first large-scale evaluation of an AVID program using a rigorous random assignment design. However, as discussed below, while BC AVID maintained the main features of the original US AVID program, the promoted program and the model implemented in BC did differ in significant ways. This third report presents estimates of the program's impacts on the main outcome of interest in BC AVID: post-secondary enrolment. It answers the question, "Does offering a place in the AVID elective class make AVID-eligible students more likely to enrol in a post-secondary education program than they would have been in the absence of AVID?" The report begins by reviewing the implementation of AVID in BC and looks at whether the project delivery gave AVID a fair test. It then follows with a presentation of the impacts, including a summary of the impacts observed during the students' secondary schooling before examining key post-secondary outcomes. This introductory chapter provides a brief overview of AVID and the intended and unintended differences of the version of AVID tested in BC, which will help to position the results and implications of this test of BC AVID.¹

Chapter Summary

- **The BC AVID intervention is intended to increase access to post-secondary education** for BC high school students by familiarizing students selected as academically "in the middle" with advanced academic study and tutorials and stimulating learning through enrolment in more rigorous courses, with the aim of enhancing their academic proficiency and readiness to access a post-secondary education program.
- **The BC AVID Pilot Project attempted to standardize as far as possible BC AVID's implementation across the participating schools in order to ensure a valid program model was tested at all sites.** The project involved careful planning of training, oversight and monitoring to help ensure better understanding of the program delivered and minimize the extent of threats to validity.
- **The research methodology adopted by BC AVID pilot project creates statistically equivalent groups of students: a program group that receives the AVID offer and a control group that does not.** The latter group experiences school programming as normal, technically known as the

¹ Dunn et al. (2008) and Dunn et al. (2010) describe the development and implementation of the BC AVID Pilot Project and the connection between the program tested and the AVID program, as originally designed for US schools. This chapter provides only a synopsis of these earlier reports.

counterfactual. It is created using random assignment of all program-eligible students. The outcomes of both groups can be compared in order to attribute results to the treatment.

- **Because the BC AVID Pilot Project is a rigorously implemented and evaluated research demonstration project, its results can be used by decision-makers to help answer questions about what does and does not work in increasing access to post-secondary education in Canada.** AVID was originally developed to solve problems identified in large urban US high schools, and there is some evidence that the AVID program helps to prepare underachieving US students to access college. However, there are differences between educational systems and thus it is necessary to test the applicability of the program in BC.
- **The research design of the BC AVID Pilot Project included an impact study, implementation research and cost-benefit analysis.** Considerable information was gathered to inform the implementation research, including a longitudinal panel study, which helps to inform understanding of the program's impacts. In addition, administrative data, school records and surveys are linked to permit estimation of the impacts of BC AVID and to calculate the program's costs.

What Is AVID?

AVID was developed in 1980 by Mary Catherine Swanson, a high school English teacher in San Diego. It has evolved somewhat since then, but its aims then, as now, include helping underachieving high school students prepare for and succeed in four-year college or university programs. In particular, AVID takes students that are academically “in the middle” (primarily achieving B and C grades) and places them in advanced or more rigorous classes while providing ongoing support through an AVID elective class which includes regular in-class tutorials. The AVID curriculum teaches students how to read critically, take notes, study effectively, work collaboratively, and manage time. The AVID class is led by a teacher trained in AVID methodologies. Since the mid-1990s, the main venue has been AVID Center's summer institute. The AVID elective class also includes tutorials led by tutors. The ideal tutor is one who graduated from the same high school and is at the time of tutoring also a post-secondary student. AVID tutors are trained to use skilful questioning to help students make sense of their course work. Although there are many different implementations of the program, an idealized vision of the program would include students attending the AVID elective class for about one hour every day and over the course of the five-day week, two classes would focus on curriculum activities, two classes would be tutorials, and one class would involve motivational activities. This motivational component is expected to include guest speakers, team-building activities, and field trips to post-secondary institutions. AVID is geared to promote the idea to its students that post-secondary study is attainable, even by those academically in the middle who might traditionally be steered away from pursuing post-secondary education. The BC AVID Pilot Project focused on the offer of AVID as a place in the AVID elective class which was the main venue for AVID programming at the time the project was created. AVID has since evolved to a “school-wide” and “system-wide” approach to academic improvement in which the AVID elective class remains a key element but not the only focus for student improvement. According to AVID's main web portal, AVID currently serves 4,800 schools in 48 states and the District of Columbia in the United States of America, and 16 countries or territories.

The main expectations for the delivery of the AVID program are summarized as the eleven AVID “Essentials” presented in text box below.

Box 1.1 AVID 11 “Essentials”

These 11 AVID “Essentials” are developed by the AVID Center and provided to all AVID sites. The Essentials, assigned specific numbers by the AVID Center, function as a theoretical ideal to which all AVID programs should aspire.

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.

Participation: AVID program participants, both students and staff, must choose to participate.

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 university enrolment.

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.

Data: AVID schools/districts must provide program implementation and student progress data. These will be monitored through the AVID Data System, with results analyzed to inform the AVID certification process.

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. Commitment to ongoing participation in AVID staff development is also required.

School site team: An active interdisciplinary site team must collaborate on issues of student access to, and success in, rigorous university preparation courses.

The Effectiveness of AVID

While there have not been any prior random assignment evaluations of AVID, several non-experimental evaluations that look at the effects of AVID in US middle and high schools have taken place in various jurisdictions. Several of these studies report positive effects of AVID on high school achievements such as GPA, taking of rigorous courses, and graduating high school (Gandara et al., 1998; Mehan et al., 1996; Guthrie & Guthrie 2002; Watt et al., 2002). A number of these studies also examined the students' post-secondary experiences and reported on positive effects of AVID beyond high school. These included a lengthy evaluation by Mehan et al. (1996), a companion study by Gandara et al. (1998) and a follow-up in 1999, which reports on interviews held with 248 students (from among 1,053 AVID students) that completed three years of AVID from 1990–92 in 14 San Diego high schools and an additional 146 of the 288 students who had participated in AVID for one year or less. Among the sample that completed three years of AVID, 88 per cent went on to enrol in a post-secondary education program. Forty-eight per cent reported attending a four-year college immediately after high school, while 40 per cent were attending a two-year college. Among those completing only one year of AVID, 34 per cent went on to four-year colleges. In contrast, 37 per cent of students in the district went on to four-year colleges. AVID appeared to be particularly effective with underrepresented minority student populations. For example, whereas only 25 per cent of Latino students in San Diego schools went on to four-year colleges in 1992, 43 per cent of Latino AVID completers did so. Among African-American students, 55 per cent of AVID completers enrolled in four-year colleges versus 38 per cent for all other African-American students in the district. Importantly, the researchers also found that AVID students from the lowest income stratum (less than USD 20,000 in annual income) enrolled in four-year colleges at equal or higher rates than students from higher income strata (USD 20,000 to 59,000). At the same time, AVID students whose parents or guardians had no college education were as likely to enrol in a four-year college as were AVID students whose parent(s) or guardian(s) were college graduates. Clearly these results are promising. However, as discussed in Chapter 6, there remains uncertainty that such findings are solely driven by the AVID program. Moreover, the 248 students interviewed were those who could be located at the time of the study. As such, the extent to which the sample is also biased by this type of selection is unknown.

Also of note is a longitudinal study by Guthrie & Guthrie (2002) in which the authors report on their follow up of the 1998–99 Follow Forward Study of 100 AVID graduates. Here the authors compared the outcomes of the 100 students to that of the state average in California. Of the 100 AVID graduates who were followed, 95 of them were enrolled in college or university, with 75 of them at a four-year college, a rate reported to be almost three times the state average.

An evaluation by Watt, Yanez and Cossio (2002) focused on the implementation of AVID in 26 secondary schools in seven school districts in Texas in 1999–2001 as part of school reform designed to “untrack” underserved ethnic minority students. The researchers found that more schools were enrolling underrepresented students in rigorous courses for the first time. They found that enrolment varied between sites and that it was dependent on teacher and counsellor recommendation. Importantly, the involvement of administrators affected implementation and the degree of involvement of students in rigorous courses. The authors stated, “The principal’s level of participation on the AVID site team was central to how effectively AVID was implemented” (p. 48). Watt et al. (2002) used

baseline data that included GPA scores, course enrolment, test scores and attendance. They found that the achievement levels of AVID students were higher overall and the attendance of AVID students was higher than the school norm, although the criteria for selecting students varied between schools and years of enrolment. The extent to which these students would have succeeded without the assistance of AVID is unclear. Researchers examined class attrition rates using aggregate data. Reasons cited for attrition included initial misidentification of students for the program, student preferences, district realignments, and students transferring to non-AVID schools.

Lougee and Baenen (2008) evaluation of AVID's implementation in Wake County Public School System in Raleigh, North Carolina found high attrition rates (only 36 per cent of those enrolled in Grade 6 continued with the program through Grade 8) and inconsistencies in implementation across schools.

Black et al. (2008) used a quasi-experimental design to evaluate the first two years of AVID implementation in a middle school from the north eastern region of the US. The authors noted that two schools were randomly assigned to the program group and a third was designated a comparison school. While teachers from all three schools were trained to deliver AVID, only the two program schools had implemented the program. The sample consisted of 51 AVID students and 22 comparison students. The authors note that within the two years that were examined, AVID did appear to positively influence the students' academic achievement in English and language arts. However, as with other prior studies there are caveats regarding the sample selection. In particular, only a select group of students were included in the analysis — those who remained active for the duration — and the data only covered two years of implementation in middle school.

None of these studies had a carefully constructed control group, and in most cases the national or state averages (for the whole population or an ethnic or low-income subgroup) were used as the comparative statistics. These non-experimental studies as well as the intent and theory underlying the AVID program suggest that there is considerable potential for the program to influence post-secondary enrolment. However, conclusions about the effectiveness of AVID — especially in the context of BC high school students — have been limited up to this point. Thus, BC AVID was specifically designed to rigorously test a version of the AVID program.

What Is BC AVID?

The BC AVID Pilot Project is a research project, established to rigorously test a version of the AVID program that would be appropriate for BC high schools. The goal of BC AVID is to increase access to post-secondary education for high school students who may not normally pursue post-secondary education due to achievement-related barriers. These barriers could include low average grades, unsuitable course choices, and lack of focus and support for their academic activity. BC AVID aims to equip middle-achieving students with the skills to tackle advanced level courses and to provide tutorials and a stimulating and supportive classroom environment with the focus on enhancing their academic proficiency and readiness to access a post-secondary education program. By evaluating BC AVID, the project generates evidence to be used by education decision makers to increase access to post-secondary education.

What Is the Rationale for a Demonstration Project?

While several evaluations of AVID pre-date the BC AVID Pilot Project, none attempted to create a convincing counterfactual for the trajectories of equivalent students to those found eligible for AVID but who did not receive the program. It is thus unclear what factors in addition to offering the program contributed to the observed results. A randomized trial was chosen for BC AVID to avoid the many challenges that face non-experimental impact evaluations in general, such as separating results due to participants' selective entry into the program, selective exit from it, or other factors, from effects caused by the program. Random assignment experimental designs are often considered the "gold standard" in program evaluation and when properly implemented provide internally valid and unbiased estimates of the impacts of offering a program to a program group of individuals. This is because program and control groups come from the same target population, and group assignment is determined solely by luck of the draw, therefore, there are no systematic differences between the two groups aside from the offer of the intervention. Furthermore, both groups are equally likely to experience external factors that are unrelated to the program being tested. Therefore, the differences in measured outcomes between the two groups provide valid estimates of the impacts of the program. For example, in the BC AVID Pilot Project where the focus is on increasing post-secondary enrolment, because a randomized trial was carefully constructed and implemented (as demonstrated in Dunn et al., 2008) any differences in post-secondary enrolment between the AVID program group and control group can be confidently attributed to the fact that one was offered AVID and the other was not.

It is important to note that the question of interest in this evaluation is a policy one. Given the existence of students who *should* benefit — students who are "academically in the middle" in Grade 8 and who will not go on to post-secondary education without additional intervention — does putting resources into making AVID available to such students for four years change their post-secondary outcomes? This project tests this policy question by offering AVID to students found eligible for the program and seeing whether this changes their post-secondary outcomes. Although nearly all eligible students enter the program, many leave it in later years. However, the project was not designed to compare outcomes of the select group of students who complete three or four years of AVID to an equivalent group who do not. This is an interesting question and the project can answer it, but the result does not answer the policy question, which is whether making the program available changes the outcomes of the program's target group.

Overview of the BC AVID Pilot Project

Implementation of the BC AVID Pilot Project required collaboration between many stake holders. The project was made possible through partnership between the now defunct Canada Millennium Scholarship Foundation (hereafter "the Foundation") and the BC Ministry of Education. The nature of the relationship and the obligations of the partners are outlined in a Memorandum of Understanding (MoU) signed in 2003. The Foundation appointed the project manager, who assumed a central coordinating role, chairing meetings of the project's principal decision-making body, an AVID Steering Committee (ASC), and its communications subcommittee. The Foundation provided the funding base for the implementation of the BC AVID Pilot Project. The Foundation was solely responsible for covering all costs related to the evaluation of the BC AVID Pilot Project and the additional costs

associated with implementing the program in 18 pilot “sites” covering Grades 9 to 12, representing 21 schools delivering BC AVID.²

These implementation costs included support for the role of Chilliwack School District (described below), training all education professionals (school administrators, teachers, tutors, counsellors) who worked with project participants, AVID Center site fees and curriculum materials. Funding was available for planning in 2004 and for implementation in 2005–10. The Foundation also covered the costs incurred by the province in administering school board contracts on behalf of the Foundation.

The BC Ministry of Education (hereafter “the Ministry”) assisted in recruiting school districts to learn about the BC AVID Pilot Project and in selecting schools and districts to deliver the intervention. The Ministry assisted in granting SRDC necessary access to school and school district data for conducting observational research and shared administrative data on participants, as authorized by informed consent of students and their parents. The province was responsible for ensuring that the financial resources provided by the Foundation were used for the purposes described in the agreement. The province assumed responsibility for its regular, full-time-equivalent funding of students, which covers normal school operating costs such as the salaries of site team members who delivered the program.

All districts and schools received an annual grant administered by the Ministry, which covered:

- AVID Summer Institute for two years (full-site team) and a third year (partial-site team) — fees, travel, accommodation, meals;
- district director training — fees, travel, accommodation;
- the AVID library;
- the annual AVID site fee;
- hiring and training tutors; and
- up to 14 days of Teacher on Call (ToC) to cover the time required for selecting AVID eligible students by the site team.

Some additional funds were made available to remote regions of the province with higher travel costs. The Ministry was responsible for leading the selection of BC AVID pilot sites and providing funding to districts as performance objectives were met. The Ministry worked with the Foundation and the Social Research and Demonstration Corporation (SRDC) to ensure the research process was coordinated and completed. The Ministry also assisted in interpreting research results on an ongoing basis and in providing the Foundation with financial reports. Support from the Ministry was provided to the Chilliwack School District to be the lead district and a provincial AVID demonstration site. Support and advice to districts was also provided through the BC AVID field-based coordinator.

Finally, the Ministry reported to the Foundation on budget, expenditures and implementation or assessment progress.

² A site is defined as the school that will deliver Grade 9 AVID. In some cases this was a middle school. In most cases it was a secondary school serving Grades 8 through 12 or Grades 9 through 12. A detailed description of the development and implementation of BC AVID is provided in Dunn et al. (2008).

Program Delivery

The Chilliwack School District was a key partner in the project, offering the expertise gleaned from their experience implementing AVID in middle and high schools.³ Partners in the pilot project from Chilliwack included the AVID Project Leader and field-based coordinator. For the purposes of the BC AVID Pilot Project, Chilliwack was responsible for hosting and coordinating training opportunities for AVID educators in BC, hosting the BC AVID website and acting as liaison between the AVID professionals in BC and the AVID Center. Overall, Chilliwack School District was instrumental in providing support and advice on implementation through the early stages of the project.

The AVID Center, an educational non-profit organization, entered into contracts with, and provided advice and support to, participating districts regarding AVID implementation. The Center assisted with AVID pilot site selection in the beginning stages of the project, and it was represented on the ASC. Based in San Diego, California, the AVID Center was responsible for providing extensive and mandatory training, mandatory certification of sites and all necessary AVID curricular materials. The AVID Center also collected performance data from each AVID school for its central database.

Fifteen BC school districts, including 18 pilot sites, entered into agreements with the Ministry and the AVID Center, including an agreement to participate fully in the assessment of the impact of AVID on students. Districts and sites were responsible for complying with AVID Essentials, including identifying AVID elective teacher(s) and site team members, and assigning a district staff member to be the AVID district director. The district director was an important and central role in the overall site team operation, involving:

- the commitment of time to support AVID implementation in the district school(s);
- working with the AVID sites to coordinate training and networking;
- primary responsibility for ensuring that program components were implemented according to the AVID model and for supporting the development of site conditions that ensure effective AVID implementation; and
- mandatory training, over a two-year period, including visits to AVID schools and capacity-building training to support districts in the development of programs and opportunities to enhance the skills of staff and AVID elective teachers.

Each site had to identify one (or two) cohort(s) of AVID eligible students to participate in the pilot project. All site team members were expected to receive all required AVID program training. Each school was to purchase at least one AVID library from the AVID Center. The district helped to ensure the AVID classroom had adequate resources, including trained tutors and curriculum materials. In addition, districts and sites worked closely with evaluators at SRDC to assist with data gathering with the Ministry on issues of implementation. Reports to the Ministry were prepared regarding outcomes and expenditures. Successes and challenges were also shared with colleagues in other AVID pilot sites.

³ In 2001, a two-school AVID program began in the Chilliwack School District, separate from the launch of the BC AVID Pilot Project, which occurred in 2004.

Evaluation

The MoU specified that a subcontractor would carry out the evaluation jointly with the Foundation and the Ministry. This subcontractor would provide advice and support to districts for the research project both via the Ministry and directly, including training for recruitment-related research tasks and provision of frequently asked questions and a toll-free line for research project enquiries. In addition, the research consultant was to:

- advise on AVID pilot site selection; randomly assign AVID-eligible students to program and control groups;
- conduct site visits to undertake observational studies and interviews for implementation research, including student selection procedures at a subset of schools;
- collect data to help estimate the costs of AVID for a full cost–benefit analysis;
- periodically survey students participating in the study; and
- analyze survey and administrative data to determine the impacts of AVID on BC students.

SRDC, a non-profit Canadian research organization, was the research organization subcontracted by the Foundation to carry out these research responsibilities. SRDC drafted a design report to develop the research framework to answer the key questions required of the evaluation. It participated in the recruitment of schools and student volunteers, including development of all procedures necessary for securing the informed consent and baseline data from the students and their parents or guardians. SRDC has been responsible for managing the ongoing collection of data on outcomes and implementation, gathering information for the cost–benefit analysis; and responsible for publishing the findings in early implementation, interim impact and post-secondary impact reports. SRDC subcontracted some research tasks to POLLARA, a company with expertise in telephone and Web surveys. POLLARA assumed responsibility for telephone interviews and surveys at different points throughout the project.

Research Components

The BC AVID Pilot Project is first and foremost a research demonstration project designed to deliver three main research components: 1) *implementation research*; 2) *impact analysis*; and 3) *cost–benefit analysis*.

The *implementation research* documents the BC AVID program as modified and delivered at each site and compares this delivery to AVID’s accepted norms. The project aimed to implement the AVID program within the parameters conventionally accepted by the program’s developers at the AVID Center, but also appropriate to the BC educational context. As mentioned above, intentional and unintentional adjustments were made to the program in British Columbia. Implementation researchers observed, queried, and documented the project as it unfolded. Results are summarized in Chapters 3 and 4. The implementation research component also included four case study sites whose schools’ small size and remote locations most obviously diverged from those of the large US urban high schools

where AVID originated, but from which lessons for future implementation in rural areas might be derived.

The *impact analysis* investigates the project's principal research question — whether AVID-eligible students offered a place in the AVID elective are more likely to enrol in a post-secondary education program more so than they would have been in the absence of AVID. The *impact analysis* also looked at a number of intermediate outcomes on high school academic achievement, which were first presented in Dunn et al. (2010). This component of the research required the recruitment of AVID-eligible students in Grade 8 and their random assignment into program and control groups. Program group members received an offer of placement in the AVID elective class while the control group members did not. Administrative data, including high school and post-secondary records, and survey data were collected on both program and control groups for six years and examined to determine whether the intervention caused any changes in high school and post-secondary trajectory, by those who received the offer to take the AVID elective class.

The research design also included a third and final component, a cost-benefit analysis of the intervention. The results of the cost analysis are presented in Appendix 6. The design involved estimating the monetary value of key economic impacts on project participants and the indirect impacts the program had on other members of society, from outcomes such as raised high school graduation rates or post-secondary participation. The analysis as designed would compare the dollar value of the costs and benefits associated with the program, including those that occur within the study period and those that can be projected for the future. This type of analysis can be very important for those responsible for decisions about how future funding is divided among different interventions.

Project Governance

The project governance of the BC AVID Pilot Project was outlined in the MoU between the Foundation and the Ministry, and it primarily involved the ASC. The ASC was established in late 2003 to advise and guide the Foundation and the Ministry as the sole decision-making body for the BC AVID Pilot Project. It included representatives from the AVID Center, Chilliwack School District, the Ministry, the Foundation and SRDC. Within the ASC, specific roles were assigned to some members. The Foundation appointed the project manager. A former teacher and administrator from Chilliwack School District with experience implementing AVID was appointed Project Leader. For the first two years of the project, the former principal of an AVID secondary school assumed the role of field-based coordinator to assist with BC AVID site and program development. The role of ASC was to oversee the research objectives and the implementation of the BC AVID Pilot Project. As a committee, the group engaged in ad hoc, face-to-face meetings and weekly/monthly teleconference calls to discuss many issues, including:

- early implementation program design elements and coherence;
- broad policy issues and implications;
- research activities;
- administrative direction; and
- development of overall communication strategies.

Meeting minutes reflected ASC decisions and reports on actions taken. Decisions were reached through consensus between the MoU signatories, and attempts were made to establish consensus among other agents and partners involved. Subcommittees were created on an ad hoc basis. In the early stages of the project, the Ministry established a school selection subcommittee to select the districts and schools to take part in the project. ASC also created a communications subcommittee to address communication needs of the project. The committee reviewed materials intended for local site teams to ensure the appropriateness of content, consistency of language and information and province-specific information. This group was also responsible for the development of a Project Operations Manual to guide sites in the implementation of the project.

School Recruitment and Selection

A critical early phase of the project was identifying the BC school districts that would take forward delivery of BC AVID. In November 2003, the Ministry implemented a request for proposals to seek out school districts interested in implementing the project at one or more schools as either random assignment or case study sites. To raise interest, BC school districts were given an introduction to the project at a meeting held in February 2004 in Chilliwack. At this meeting, there was some hesitation about aspects of the research design involving random assignment of students. Nearly half the district representatives, however, expressed a preference for this design over an alternative that would have seen the program implemented at some interested schools but not at others. School districts expressed concerns about how to fund necessary expenses, such as the district director position, and were unsure how to secure buy-in from their districts. The tutorial component was thought likely to be difficult for those schools outside urban centres — rural districts could have difficulty locating and training appropriate tutors. The amount of work for the teachers also raised some concerns. Nonetheless, the meeting ended with cautious optimism that most districts in attendance would apply to take part.

The Ministry received 28 applications for individual BC AVID Pilot Project sites. Along with a selection subcommittee of ASC members, it evaluated the submissions according to set criteria. This committee made recommendations to the Minister of Education regarding final site selection. Districts were formally notified regarding the selection in June 2004. The selection committee considered geography and school size, and the decisions made about case study and two-cohort design were based on the best information at the time. Most regions of the province (Vancouver Island, Lower Mainland, Interior and North) were represented in the final set of sites selected. The committee, however, had hoped for applications for schools in large urban districts with high proportions of students from families with lower socio-economic status (SES), since AVID had originally been developed for such schools. In the absence of many applications of this kind, schools with smaller student populations and higher SES were selected. There was a risk that there could be smaller numbers of AVID-eligible students at such schools, with implications for recruitment. Four case study sites and 14 random assignment sites were selected, located within 15 school districts. These 18 sites represented 21 schools due to some sites being combinations of secondary or senior secondary schools and the middle schools that were their feeder schools. Other schools (additional to the 21) were involved in the project for recruitment only (where the project site was a Grades 9 to 12 school with a Grade 8 feeder school). All project-selected districts entered into agreements with the Ministry in order to participate in the research project and to receive project resources to support implementation of BC AVID. As part of the agreements, school

site teams were required to undertake activities that supported the research components of the BC AVID Pilot Project, in addition to delivery of the AVID program.

Student Recruitment and Selection Criteria

Once schools were recruited and selected for the project, the next task was recruitment of “middle-achieving” students. Although student selection was recognized to be a critical part of AVID programming, no single set of criteria universally had been deemed necessary or sufficient for a student to be considered eligible for AVID. In practice, the selection of students varied from school to school and by site team membership. Students with the same characteristics could be deemed AVID-eligible in one round of recruitment and ineligible in another. If this had been implemented for the BC AVID Pilot Project, however, the evaluation would have faced the following challenges:

- It would be hard to say on whom the program had been tested. The findings from the pooled impact estimates would not readily be applicable to any specific population. It would be difficult to know whether any negative results reflected an inappropriate choice of students or a failure of the AVID program itself. It would be hard for anyone to know how to go about replicating the results at future sites.
- Getting selection wrong. Appropriate selection is deemed critical for the success of AVID. It would be risky for the project to use many different processes to determine who the suitable students were. This risk would be particularly high when site teams lacked experience in selection.
- Constraints on correcting the class composition. The project design to test the offer of four years of AVID meant that students could not be added later to the research cohorts. This placed increased importance on getting the selection right from the start.
- Parent and student complaints. If selection was markedly different between sites, unselected students (or their parents) could feel unfairly treated since they might have been found eligible for the project at a different site.

To try to avoid these challenges, the AVID Center, Chilliwack School District and SRDC developed a standard definition of eligibility by consensus. These criteria were approved by the ASC and included in the Project Operations Manual. The selection criteria used a points-based system that weighted student characteristics to determine their suitability for AVID. Students more suitable for AVID received higher scores than those less suitable. The professional judgment of educators was required at several places in selection (e.g., determining whether to refer students for AVID; assessing exactly how student attendance and behaviour records that vary by school were to be scored; scoring the student written component and interview). Standardization ensured that teams at each school addressed the same AVID suitability concerns when making subjective judgments and then accorded a similar weight to each equivalent concern.

Recruitment and selection involved several stages. Student applications, consisting of a short questionnaire, open-ended questions for the student to provide written responses combined with parent’s informed consent provided information to help determine eligibility. In addition to the application form, other components of the selection criteria included academic class performance, referral by teachers, and an interview. Final eligibility results were based on a points systems, weighted

on these indicators. Table 1.1 summarizes the components that went into the selection criteria and the scoring framework for BC AVID. Students that scored above a threshold of 45 points were deemed AVID-eligible with no one factor having sufficient weight by itself to determine eligibility.

Students who volunteered to participate in the project and were determined to be AVID-eligible at the 14 random assignment sites were then randomly assigned by SRDC to one of three research groups using a computerized lottery-like process: *program group* students were offered a place in the upcoming Grade 9 AVID elective class; *wait list* group students would be offered a place in the AVID elective class if a vacancy arose; and *control group* students could not attend the AVID elective class. The typical elapsed time from holding the first information to actual random assignment and notification of group status was about 10 weeks.

Table 1.1 BC AVID Student Selection Criteria

Grade 8 students were selected as eligible for AVID according to how well they met eligibility criteria in the table below, measured using points that totalled to an AVID eligibility score, prior to random assignment.

	Scoring Criteria	Maximum number of points
1	Letter grade average for all classes A or higher = 5; B to C = 20; D or lower = 0	20
2	Standardized test scores (only for those with letter grade average of B or less) If the test score (e.g. Grade 7 FSA results) meets or exceeds grade expectations, give 5 points.	5
3	Grade 8 attendance to date Good = 5; Average = 0; Poor = -5	5
4	Disciplinary or disruptive behaviour history in current school year 5 None = 5; Minor = 0 ; Major = "E" (excluded)	5
5	Referral by teacher or self Teacher referral = 5 (maximum = 15); Self-referral = 5	15
6	Student-written portion of application If the written portion is not submitted, mark "E" (excluded).	10
7	Family post-secondary history Parents did not graduate from college/university = 10	10
8	Special circumstances Single-parent family (recorded on application form) = 5; family of 6 or more (recorded on application form) = 5; ESL = 5; Aboriginal = 10; Other circumstance(s) = 5.	10
9	Interview If student did not attend and did not provide an excuse, mark "E" (excluded).	20
	Total score	100
	Cut-off level for program eligibility	≥45, no "E"

As noted in Dunn et al. (2008), despite efforts to standardize the process of recruitment and selection across sites and cohorts, variations did occur. These differences could be important if they resulted in selecting non-AVID-suitable students for the project. However, both program and control groups would be equally affected, since random assignment took place after the selection. As such, the measured impacts of BC AVID presented in the subsequent chapters of this report should not be biased by any remaining differences in recruitment practices between sites and cohorts.

The Story so Far

There have been several stages of the BC AVID Pilot Project, including the identification and recruitment of schools, training of school staff, identification and recruitment of students and collection of data from a range of sources. The recruitment and selection of students began in early spring 2005 in 18 BC sites. Each of the 18 sites created at least one AVID elective class for the cohort of students who were to enter Grade 9 in the 2005–06 school year; 13 schools also created an AVID elective class for a second cohort of students who were in Grade 9 in the 2006–07 school year. At 14 of the sites, in April–May 2005, the first cohort of 801 students found eligible for AVID was randomly assigned by SRDC to one of three groups: (1) a program group that would be offered a place in the AVID elective class; (2) a control group whose members were not to enrol in the AVID elective class; or (3) a group that was placed on a wait list for the AVID elective class. Those on the wait list were assigned their position on that list at random and could be considered for entry into the AVID elective class if a space became available. The control group remained eligible to take all electives normally offered by the school. This means the counterfactual (what happens when you aren’t offered AVID) is not “no treatment” but rather the courses the control group took when the program group was in the AVID elective class. At the four case study sites, assignment was undertaken by school staff to groups (1) and (3) only. In April–May 2006, a second cohort of 547 students was similarly randomly assigned at 13 of the 14 sites that participated in random assignment the year before.

As described in Chapter 2, extensive data were collected from various sources to analyze the implementation, impacts, costs and benefits of BC AVID on an ongoing basis for the duration of the pilot. Data collected through the administration of BC AVID provide information about program content and participation, as well as the costs associated with running the program. Other administration data were collected from participating school districts, the provincial government and post-secondary education institutions. Another important component of the evaluation was a set of surveys undertaken throughout the study. The first survey collected data before the intervention had been delivered. This information provided a baseline that was used to assess the randomization process, to identify subgroups and to provide a comparison for how participants changed over time. Follow-up surveys were conducted when participants were in Grades 11 and 12. The Grade 11 survey included BC high school students not participating in the pilot study, in order to collect information about learning experiences similar to AVID. A final follow-up survey was also conducted at 66 months after random assignment, when participants were likely to be in post-secondary education or the labour market.

Using these various data, two major reports have been published so far and described in brief below. The first, Dunn et al. (2008), provides details on the early implementation of the project, while the second, Dunn et al. (2010) examined intermediate impacts of offering AVID — high school achievements up to Grade 11.

Early Implementation

BC AVID's Early Implementation Report (Dunn et al., 2008) described how students and their parents or guardians were notified and informed about the project and how volunteers were questioned to ensure they understood what participation in the BC AVID Pilot Project involved. It documented the attendance at information sessions and completion of application forms and reported that recruitment and selection followed the procedures set out for the project, with only minor deviations. Analysis of the characteristics of students and their family backgrounds suggested that despite having a different socio-economic profile from that of U.S. AVID participants, the BC AVID sample was broadly in line with the academic profile of AVID-eligible students.

Findings from the earlier report also suggested that BC educators charged with delivering the program had found it very demanding work and occasionally a challenge. Several sites experienced difficulties recruiting and maintaining suitable tutors for their AVID classes. Students spent considerably less time in tutorial classes and more time in curriculum classes than recommended by AVID Center. Implementation of the motivational components of the AVID program was more in line with expectations of AVID Center, including team-building activities, special presentations, and field trips.

Interim Impacts

Dunn et al., 2010 provided an early look at AVID's intermediate results, presenting impacts observed up to the point when students completed Grade 11. The research at that point showed that students who were offered AVID took more difficult courses than were chosen by equivalent students not offered the program. By Grade 11, 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. These results were convincing because the program was tested using a rigorous randomized trial. At the same time though, because these were interim impacts, the efficacy of BC AVID could not be judged by its success in affecting intermediate outcomes. The impact of primary interest is its effect on enrolment in post-secondary education, which is presented in Chapter 5 of this report.

How BC AVID Differs From AVID

Of note in interpreting the results is how BC AVID differs from the US AVID program. While the goal of BC AVID is essentially the same as AVID and was modelled as such, BC AVID differs in several important ways from AVID. These differences are both intentional and emergent. The main intentional differences included the following:

- While AVID focuses on four-year college (in Canadian terms, university) enrolment, the outcome of interest in BC AVID is increased enrolment in any form of post-secondary education, including community or technical college, university, or apprenticeship programs. Nevertheless, BC AVID encourages students to take courses that provide them with the academic eligibility requirements for attendance at a university should they decide to pursue that option.

- The BC high school curriculum includes a compulsory class (Planning 10) that overlaps to a significant extent with the AVID elective class curriculum. As such the two courses were combined to some extent. While mixing the curricula allowed BC AVID students to meet the requirements of the Planning 10 course this may have resulted in deviation from the required AVID curriculum and the extent and effects of its occurrence are unclear.
- Enrolment in rigorous courses is one of the Essentials of the AVID program. In the US, where AVID was developed, the system of Advanced Placement (AP) courses, which are university-level courses taught at high school, is well-established and allows for an easy definition of a “rigorous” course. In contrast, Canada’s system of AP courses is less developed and therefore defining “rigorous” courses using the BC curriculum is more challenging. As such, the definition of a “rigorous” course was largely left up to educators to determine as they thought would best fit the objectives of BC AVID.
- Finally, standardized testing plays an important role in AVID since it affects the selection of incoming students by US universities. While there are several high school provincial examinations in the BC curriculum, BC universities do not place similar emphasis on standardized test results as part of their entry requirements. The absence of such high stakes testing makes it difficult to assess how far BC AVID meets AVID’s delivery objectives associated with such tests.

Several differences that were not anticipated were revealed during the implementation of BC AVID. These included the following:

- First, there was an unanticipated high level of turnover in students and staff experienced in BC AVID. More than half of all Grade 8 students who were assigned to receive four years of AVID elective classes had stopped attending BC AVID by Grade 12. Moreover, more than two-thirds of the project’s AVID elective classes experienced teacher turnover between Grades 9 and 12. While neither student nor teacher turnover is unique to BC AVID, since it occurs in US AVID as well, such high turnover may have consequences on the effectiveness of AVID, if its effectiveness depends on extended exposure to the program.
- Second, BC AVID schools experienced difficulty both in recruiting sufficient numbers of tutors for the AVID elective classes and in scheduling a sufficient number of tutoring hours. As a result, BC AVID tutors were more commonly older high school, not post-secondary education students. Moreover, the proportion of AVID elective class time devoted to tutorials for BC AVID students was 24 per cent, far below the desired 40 per cent set by AVID.
- Third, the students who participate in AVID programs in the US are different in several ways from the students who are participating in BC AVID, even though both groups are identified as “students academically in the middle.” The recruitment process for BC AVID was carefully orchestrated by the project partners with the goal of recruiting a group of students who met criteria equivalent to those set out by the AVID Center. Nonetheless, those criteria do not guarantee that the resulting characteristics of the recruited participants will be the same, in part, due to differences in school populations and existing programs. For example, one of the recruitment recommendations from the AVID Center is that AVID programs seek out students who are eligible for subsidized school lunch programs, a criterion that is often used to identify low-income students in US schools. However, British Columbia lacks such a convenient way of identifying low-income students. The implications

of having “students in the middle” who were not as economically disadvantaged as US AVID students and who were not as likely to belong to ethnic minorities as US AVID students are not clear.

- Lastly, BC AVID had to deviate, in a number of ways, from AVID because the structure of high school education in British Columbia is different from the structure assumed by AVID’s designers. The most important of these differences, as described in Chapter 3, involved the scheduling of the elective class. As designed, the AVID elective class is supposed to meet for 50 minutes every day of the school year, implying about 150 hours of AVID instruction per student per year. Because of the nature of scheduling practices in BC, BC AVID elective classes were scheduled for 65–85 minutes, but only on every other day of the school year. The overall time available per student per year in the AVID elective class amounted to about 116 hours.

However, despite the differences highlighted here between AVID and BC AVID, it must be noted that overall BC schools met the majority of the criteria for delivery of the AVID program. As discussed in Chapter 4, while no cohort consistently received an offer of BC AVID for the duration of the program, delivery to each cohort of project participants met at least 61 per cent of project-set criteria over the four years and often up to 84 per cent of them.

Overview of the Post-secondary Impacts Report

This, the third in the series of reports, provides a review of project implementation and detailed impacts on post-secondary outcomes. Analyses are based on data covering the period from Grade 8 and up to two years after (assumed, on-time) high school graduation. The data sources used in this report are described in Chapter 2. Chapter 2 also describes the bootstrap methodology used in the estimation of BC AVID impacts.

Chapter 3 then provides a more detailed look at the implementation of AVID updating some of the earlier findings presented in Chapter 1. It discusses staff recruitment and participation over time, student selection and participation over time, and delivery of the AVID program up to the completion of Grade 12.

Chapter 4 then addresses whether the project gave BC AVID a fair test. It looks at how closely BC AVID followed the program intent for the province. It also explores the how the study’s interpretation of program adherence compares with the AVID Center’s site certification.

Chapter 5 considers the impact of offering AVID on students, including their secondary school experiences and achievement as well as their enrolment in post-secondary education. It compares the high school graduation rates of program and control group students and considers whether students offered AVID enrolled in post-secondary education at different rates or enrolled in different types of post-secondary education programs than control group members.

Chapter 6 summarizes what has been learned from the project based on this report and prior analysis.

Chapter 2: Data Sources and Impact Estimation

Introduction

One of the primary objectives of this report is to present post-secondary impact estimates. This chapter and the two that follow lay some of the groundwork in order to help the reader properly interpret the impact estimates in Chapter 5. This includes an understanding of the program as it was implemented as documented in the next two chapters. This chapter considers the structure of the evaluation, including the different data sets and analytical methods used for the main impact estimation. In different ways, the chapters intend to provide prior understanding of the sources of the impact estimates.

Many sources of data were sought for each aspect of the research because researchers anticipated that no single source would be sufficient. For example, although many students could be contacted through the BC AVID 66-month survey (carried out during what is normally the second year of post-secondary studies for those who attend and progress in school continuously), it was necessary to obtain proxy responses from their parents in some cases. And since completion of the survey was sometimes not possible at all, administrative data were also obtained from the province's educational institutions. Thus, several data sources are used to create as complete a profile as possible.

To interpret the results appropriately, some prior understanding of the methodology for estimating impacts is also beneficial. The core of the approach consists of randomly assigning students to a program group that receives the intervention — the offer of a place in the AVID elective class — and to a control group.⁴ Since chance determined who was offered the intervention, differences in outcomes can be attributed causally to the offer of the intervention (or treatment), eliminating any competing explanations that might normally arise due to pre-existing differences between groups that receive different programs. Although random assignment is often referred to as the “gold standard” in evaluation of program impacts, it is not without its limitations.

The purposes of this chapter are thus twofold:

- To describe the administrative and data sources used in the report especially with respect to the estimation of impacts; and
- To describe the methodology for estimating impacts and its limitations.

Chapter Summary

- **The BC AVID Post-secondary Impacts Report uses a variety of data files in its analyses.** Although many outcomes could only be measured through surveys, a combination of survey and administrative data were used to derive information for the main outcomes of this report (such as post-secondary attendance).

⁴ Membership of a third, wait list group who might receive the program when spaces in the AVID class became available was also randomly assigned for program operational reasons.

- **A rigorous random assignment approach was adopted to evaluate program impacts.** Random assignment ensures that program and control groups are equivalent prior to the intervention since chance determines assignment. As a result, any differences in outcomes can be ascribed to differences in assignment, and not to differences in the characteristics of program and control group members.

Data Sources Used in the Report

SRDC organized the collection of quantitative and qualitative data to aid the evaluation of BC AVID. The many primary data sources used in this report are summarized below:

- **Baseline survey of project participants and their parents** — Grade 8 students completed a paper questionnaire as part of the application process in 2005 and 2006. The survey asked about their educational experiences, employment experiences, and peers. Those students who were subsequently found eligible for AVID (and became members of the program group, the control group, or wait list) are termed “project participants.” The parents of project participants were also subject to a telephone survey on household characteristics.
- **Application forms and administrative data used during recruitment** — Baseline information related to recruitment and selection criteria were obtained by project researchers from students’ applications to join the project.
- **Grade 11 Survey** — A “How do you learn?” Web survey was designed and commissioned for Grade 11 students to measure exposure to AVID techniques and strategies among members of the program, wait list, and control groups at AVID schools, as well among non-project participants at AVID and non-AVID schools. The survey was fielded in the spring of 2008 and the spring of 2009 in order to capture the two cohorts of students at approximately the same time in Grade 11.
- **Grade 12 Survey** — A telephone survey of project participants (the program, waitlist, and control groups) in their Grade 12 year measured educational experiences and activities. The survey was fielded in fall/winter 2008 and fall/winter of 2009 in order to capture the two cohorts of students at approximately the same time in Grade 12. The overall response rate was 78 per cent of the original sample.
- **66-month survey** — Many post-secondary outcomes (such as post-secondary aspirations, use of own savings to finance post-secondary education, knowledge of student financial aid) can only be measured through a student survey. The BC AVID 66-month survey was conducted between October and May of what would normally be the third year of post-secondary studies, assuming school attendance and progression are continuous. The timing was roughly 66 months following random assignment. The response rate for the program and control groups at random assignment sites was almost identical (76.6 per cent of control group students and 74.4 per cent of program group students responded to the survey). When project participants could not be contacted for this survey, key outcome information was collected from “proxy respondents” (usually parents). The proxy respondent survey increased the coverage of survey data on key outcomes by around 10 percentage points. Appendix 2 discusses the potential for bias arising from differing survey response rates and concludes that the potential is very low.

- **Observations during site visits** — Project researchers made regular visits to the 18 pilot sites implementing AVID and to schools implementing the program in Chilliwack School District. They observed information sessions during recruitment and AVID classroom activities for a total of 90 field observations. The visits covered both research cohorts at each site in each year in order to follow the implementation of the program for both cohorts. SRDC researchers developed protocols for the observations to ensure comprehensive consideration of each aspect of program implementation. Field observation notes recorded the AVID teachers' use of a variety of AVID curriculum activities and materials. The types of questions asked by students, and whether and how teachers and tutors answered them, were also recorded. The level of student participation in the AVID elective was noted by their observed attentiveness and participation in activities. Notes on the classroom environment were recorded for purposes of describing the implementation of BC AVID at the classroom level.
- **Interviews during site visits** — Project researchers also interviewed key members of the site team, totalling 153 interviews over a five-year period. Interviews were conducted at pilot sites with district directors as well as with AVID site team members including AVID teachers, AVID counsellors, AVID tutor trainers, and AVID coordinators. SRDC researchers developed protocols for the interviews to ensure that this qualitative data would be systematically gathered and able to address whether or not implementation objectives were achieved. BC AVID staff were asked to describe their tasks as they related to the implementation of BC AVID, as well as which parts of the tasks were problematic and which ran smoothly. Site team members were asked for their impressions of students' responses to the program and for their feedback on whether and how the intervention might succeed.
- **Focus groups during site visits** — Project researchers also ran 16 focus groups with three target groups: eight with AVID program group members, four with their parents, and four with AVID tutors. SRDC researchers developed protocols for the focus groups to gather information on whether implementation objectives were achieved and also about the perceptions of the program and its effects.
- **National Longitudinal Panel (NLP) interviews** — The NLP was established as a cross-project venture with Future to Discover (FTD) (Ford et al., 2012) to learn more about how students who may be the target for future programming of the type tested by BC AVID and FTD normally make decisions about whether or not to access post-secondary education. Interviews were conducted with control group members and students receiving the interventions under test. NLP participants were interviewed in threes (triads) and encouraged to focus on the needs they felt they had in making satisfactory decisions about their futures and to review the resources they had to draw upon as well as those they might wish for. There were 12 participants targeted in each of New Brunswick, Manitoba and BC. NLP data collection and results related to BC AVID appear in Appendix 4.
- **Data collection forms** — Researchers established a system of teacher-completed forms to record daily the nature of AVID class activities, attendance by project participants, departures from the class, and additions from the wait list. Tutors also completed an initial information form, and their

attendance at tutorials was recorded. The resulting database is referred to in this report as the AVID multiple information system, or “AVID MIS.”

- **Notes from conferences, the AVID Summer Institute, project training workshops, and other communications between site team members, project researchers, and AVID Steering Committee members** — These communications and activities were noted by researchers and provide important background information to help interpret implementation successes and challenges.

Secondary data sources are also of considerable importance to the analysis — including administrative data collected by the BC school system. The sources used in this report include the following:

- **Student records provided by school districts** — These data, capturing information such as courses taken, grades, and attendance records, cover Grades 9 to 11, collected over the school years 2005–06 to 2008–09.
- **Student records provided by BC Ministry of Education** — These data are collected for two periods before the start of the AVID program (pre-program) and during the program years (in-program). The in-program data, which cover Grades 9 to 12, concern the school years 2005–06 to 2009–10. The data capture information concerning examinable courses (those for which provincial examinations are held), non-examinable courses, student credentials, and provincial examination records, plus graduation.
- **Student records provided by BC Ministry of Advanced Education** — These data include post-secondary enrolment in BC public institutions and receipt of student financial aid. They are linkable to the secondary school records for all project participants (program, wait list and control groups) at AVID program schools and Grade 11 survey respondents at non-AVID schools. The records are provided by BC Ministry of Advanced Education Student Transitions Project.
- **AVID Center certification reports (AVID Certification Report and Self-Study Continuum)** — These are reports on AVID program implementation completed by the pilot sites for each school year and submitted to the AVID Center.
- **AVID Center guides, curriculum, and Web site; BC AVID Project Operations Manual, project design documents, memos, minutes from meetings, and related communications; BC AVID “support and feedback” reports for each pilot site; budget and spending reports; and BC AVID site plans submitted by each pilot site to the AVID Center each year** — These materials generated by project partners are important reference sources in interpreting project development and program delivery. Financial reports were analysed for the cost analysis in Appendix 6. “Support and feedback” reports were produced semi-annually as part of program monitoring by the AVID Project Leader during 2006–2010.

Notes from observations and transcripts from interviews were subject to qualitative data analysis in order to better understand the implementation of recruitment, selection, and subsequent program activities. SRDC researchers developed a framework for coding that was directly linked to the information requirements of the implementation research objectives. All transcripts and notes from

qualitative data collection activities were coded using NVivo software to assist in the organization and analysis of the data.

Data Used in the Estimation of Impacts

For the primary outcomes in this report — those related to post-secondary attendance — the most reliable data source is the post-secondary enrolment administrative data provided by the British Columbia Ministry of Advanced Education. These data contain enrolment information from British Columbia's public colleges and universities. Many institutions in the province offer college certificates and universities degrees. Fortunately, the file contains a description of the credential awarded, which allows researchers to distinguish between the two.

Although administrative data contain accurate information on post-secondary enrolment, they are incomplete. First, students who attend private career colleges or vocational institutes or who are registered apprentices would not be covered by the available administrative data (except for registered apprentices who attended a college). Second, students of colleges and universities outside British Columbia would not be included. In such cases, the report relies on the BC AVID 66-month student survey. In some instances, students could not be contacted directly, in which case the analysis uses a proxy survey (primarily of parents or guardians).

The enrolment outcomes in this report are based on two measures: enrolment in post-secondary education and enrolment in specific types of post-secondary education (university, community college, private college or vocational institute, and registered apprentice).

- **University** enrolment is defined as being enrolled at a university in a program leading to a degree, certificate or diploma at the bachelor's degree level or higher. This includes a teaching certificate, bachelor's degrees (e.g., B.A., B.Sc., B.Ed., B.Eng., LL.B., etc.) any certificate above a bachelor's, master's degrees (e.g., M.A., M.Sc., M.B.A), degrees in medicine, dentistry, veterinary medicine, or optometry, doctorate or post-doctorate programs, professional association diploma, certificate or license (e.g., accounting, banking, insurance). University enrolment also includes being enrolled at a college in a program that leads to a bachelor's degree.
- **Community College** enrolment is defined as being enrolled in a community college or technical institute in a program leading to a degree certificate or diploma below a bachelor's degree level, excluding any programs that would normally last five weeks or less and apprenticeship programs. College enrolment includes CGEP, university transfer programs, certificate or diploma programs in cosmetology, business administration, radiology, certificate of bricklaying, and so on. College enrolment also includes being enrolled at a university in a program that leads to a diploma or certificate below a bachelor's degree, excluding any programs that would normally last fewer than six weeks.
- Enrolment at a **private college or vocational institute** involves programs leading to a diploma or certificate, excluding programs that would normally last fewer than six weeks. These institutions normally offer job-oriented training programs lasting no more than two years. Examples of these include certificate programs in cosmetology, hairdressing, automotive mechanics, computer technology, and so on.

- **Registered apprentices** include survey respondents who said they had registered with a provincial or territorial apprenticeship authority for training in a trade leading to a journey-person certificate. It also includes sample members enrolled in a British Columbia community college in an apprenticeship program.

Methodology for Estimating Impacts

At the heart of the estimation methodology is random assignment. Perhaps the simplest way to appreciate the usefulness of random assignment in evaluation is to imagine the more usual scenario where AVID is offered to all students selected as eligible for the program. In that scenario, the eligible students have been selected in part because of a particular set of characteristics with respect to their interest in school and willingness to contemplate post-secondary education. Those less interested in post-secondary education may not be offered the intervention. This creates a major problem for evaluation since those with a lot of interest in attending post-secondary education are also those who take up and persist with the intervention. Researchers may find that those who took up the intervention are more likely than otherwise similar peers to pursue higher education in the end, but be unable to tell whether this is because of the intervention or because they had more interest in (or had other characteristics that predisposed them more towards) entering post-secondary education than their otherwise similar peers

One approach in dealing with this selection issue is to create two equivalent groups: a program group (that is offered the treatment) and a control group (that is not offered the treatment). When this is done and both groups are followed up over time, differences in outcomes can be attributed to the different offers they receive (the intervention or no intervention), since there is no other systematic difference between the groups. How can equivalent groups be created? One way is to mechanically assign students so that each group has similar characteristics overall (including the same composition by sex, family background, and perhaps other demographic and socio-economic characteristics). The problem with this approach is that students may differ according to important characteristics that may not be readily observed (in survey, administrative or any other data) such as their motivation to succeed, aptitude for planning, or ability to correctly fill out post-secondary application forms.

An analytically superior solution is to assign eligible students using a lottery. Chance does not discriminate between who receives the intervention and who does not based on any characteristics of the students, whether observed or unobserved. Thus, researchers can fully anticipate random assignment to create equivalent groups. The only systematic difference between those allocated by lottery will be receipt of the offer of the intervention.

In British Columbia, 14 school sites took this approach. Grade 8 students were invited to apply and be assessed for BC AVID eligibility. Those who were eligible and who agreed to participate via an informed consent process were then randomly assigned into one of three groups: the BC AVID program group, a control group receiving no intervention and a waitlist group (not included in the impact analysis). See Dunn et al. (2008) for more details on the random assignment process.

Even with random assignment, some small differences in characteristics are possible (due to random sampling variability). These small differences can affect the level of certainty researchers have when they detect differences in outcomes that they are due to the intervention (rather than due to the chance

variation). The baseline characteristics of the statistically equivalent groups resulting from the assignment in each of the planned contrasts are compared in Table 2.1. There are no significant differences between experimental groups based on virtually all baseline characteristics. SRDC followed a standard procedure to minimize the influence of any remaining chance differences on the precision of impact estimates in this report. These, as well as other steps taken to increase precision and accuracy and guidance on how to read the impact tables, appears in the next section. The resulting impact estimation methodology adopted in this report is certainly the best available approach. Readers less interested in technical aspects of the estimation can move ahead to Chapter 3.

Table 2.1 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)

Table 2.1 Selected Baseline Characteristics of the Impact Sample, by Experimental Group

Characteristics	Program Group	Control Group	Difference (s.e.)
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 due to 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.

Technical Considerations in the Derivation of Impact Estimates

Researchers adjusted the estimated impacts derived from comparing program and control group outcomes using a regression approach. SRDC estimated ordinary least squares models, where the outcome is regressed on a treatment variable (a variable indicating whether the student was offered the intervention or not), and several other “covariates” collected in the baseline survey (prior to random assignment): student gender, an Aboriginal identifier, an indicator of English as a second language, school marks, family income, parental education, family size, and a single parent household identifier, and high school “fixed effects.”⁵ From this regression model, predicted outcomes are generated for two groups: students in the program group and students in the control group.⁶ In each case, predicted outcomes are calculated for the case of a student possessing all of the mean values of the covariates (“the average program group member” is compared to “the average control group member”).

In the tables shown in Chapter 5, predicted outcomes are shown for each experimental group, as well as the difference in the predicted outcomes (the predicted impact). The appropriate way to read the tables is to compare predicted outcomes for the program and control groups among a given population, or simply look at the predicted impacts (each of these estimates appears in its own column). However, readers should not compare predicted outcomes across sample groups. The reason is that predicted outcomes are calculated based on mean characteristics for the group in question. Comparing predicted outcomes across groups risks confusing differences that are due at least in part to differences in group characteristics. To compare across groups, readers should look at predicted impacts.⁷ This is because the differential influence of experimental group characteristics on outcomes is removed in the predicted impacts. Note that although the outcomes and impacts to follow in Chapter 5 are predicted values, they will simply be referred to as outcomes and impacts for convenience.

Along with outcomes and impacts, the tables (like Table 2.1) also show standard errors (labelled “s.e.”). These quantify the variability of the estimated impacts. The statistical significance of each result is determined from the ratio of the magnitude of the impact estimate to its standard error. Statistical significance improves (confidence in the result is higher) the smaller the standard error relative to the size of the impact. By default, statistical software packages calculate standard errors based on the assumption that the observations represent a simple random sample drawn from the population. In the BC AVID project design, schools were selected (not randomly⁸), and within each school, students were recruited and assessed for AVID eligibility. This creates a certain degree of “clustering” in the data (students tend to be more similar within schools than between schools and simply being in the same

⁵ These fixed effects allow for school-level influences on all students at the school to be taken into account. Since students were randomly assigned within schools, it is not surprising that the high school fixed effects had no real impact on the estimates.

⁶ The outcomes are based on real observations. The term “predicted” here merely indicates that they are the product of the regression model.

⁷ In a small number of instances, the overall impact may lie above or below the impacts for all subgroups. This may be caused by missing values for the variables used to define subgroups, or by the regression adjustment.

⁸ Schools had to apply to participate, and subsequently assessed based on AVID criteria (described in Dunn et al., 2008).

school produces commonly shared experiences among those who attend). To appropriately allow for this clustering, all of the standard errors are calculated adopting a standard non-parametric bootstrap approach (with 100 iterations). However, it turns out that in the case of BC AVID the resulting estimates are very similar to results that would have been obtained assuming a simple random sample. Furthermore, results from the BC AVID Interim Impacts Report (Dunn et al., 2010, which did not use bootstrapped standard errors) are also very similar when the bootstrap approach is used.

The impact estimation methodology adopted in this report is certainly the best available approach. Random assignment has often been described as the “gold standard” of program evaluation. Complementing this approach with regression adjustment as well as paying close attention to the standard errors leaves little room for biased impact estimates. Nonetheless, even the best approaches have their potential limitations, and some of these are described below.

First, it is important to keep in mind that the *offer* of four years of AVID was randomly assigned, not *receipt* of all four years of AVID. For example, it was not possible to force students in the program group into continued attendance in BC AVID classes. It is one of the AVID Essentials that student participation is voluntary. Students who left the program may have been less motivated to begin with, or they may have felt that they already knew the material covered in class. Because there is a strong possibility of selection bias determining who attends class voluntarily, it is only possible to evaluate the impact of *offering* the treatment. Researchers use the term “intention-to-treat effect” to describe the estimated impact of the *offer* of the intervention. The “treatment on the treated effect” is the impact of the treatment for those who take up the treatment, and in general, it is quite difficult to estimate in a credible manner. Nonetheless, impacts on the subgroup of students predisposed to high exposure to AVID have been estimated in Chapter 5.

From a policy perspective, evaluating the offer of the treatment that will be voluntary is desirable. In general, policy-makers want to know whether making a treatment available to a target group will improve outcomes for that target group. If in a randomized controlled trial many members of the random sample of the target group offered the treatment choose not to take it, it likely replicates what would happen if the treatment is made available to all in the target group. In the current delivery of AVID in the United States and other countries, the program is generally offered to students, not forced upon them. Thus, evaluating the impact of the offer of the treatment is akin to evaluating the best mechanism that will be available to school boards (i.e. *offering* the treatment).

It may still be useful to know the impact of the treatment itself (treatment on the treated) since it provides a sense of the potential impact (if everyone took the treatment). These results may inform the general public or practitioners about the potential for the program. It may prove especially useful if it were to become possible to make the program mandatory. However, to do so would require testing a mandatory version of the program.

A second limitation of random assignment is called “substitution bias.” In short, participants may find alternative treatments and take those up. The control group may spend more time looking for an alternative treatment than they would otherwise (since they feel left out following random assignment). Conversely, the program group may stop taking certain treatments as a result of taking up the program treatment. Substitution among the program group may not be very limiting as this is likely what they would do if the program were fully implemented, thus producing an intention-to-treat effect.

However, the control group may only have sought alternative treatments because they resented the outcome of random assignment. This is obviously not a concern if the program were made available to all. This limitation presumes that alternative treatments (home-based tutoring, for example) would be available to the participants, and would make a detectable difference to the main outcomes of interest. Note that random assignment took place no later than April of the Grade 8 year, but AVID program delivery only began in September of Grade 9, and continued for four years, so resentment would need to be fairly long-lived for alternate treatments to be sought out and persist for as long as the AVID treatment was available.

Third, there is a possibility that students in the control group benefit from the program via the AVID participation of the program group. The “knowledge” acquired in the BC AVID intervention can be transmitted (or “spillover”) to students in the school who were in the control group. Control group members would not have attended the classes, but could have learned information or been otherwise influenced by the program group members who did attend the classes. Any influences of the program on peers in the control groups would tend to bias the estimated impact downwards.

Spillovers and substitution among the control group can be assessed by observing the behaviour of students in non-AVID (non-experimental) schools. The BC AVID Pilot Project did this by recruiting and observing via surveys students at non-AVID schools. Since non-AVID schools are not part of the experiment, the behaviour of their students may mimic that of the control group had they not been part of the experiment. Non-AVID schools were selected from among all BC schools to have similar characteristics to BC AVID schools based on a propensity score matching approach (Dunn et al., 2010). Evidence reported earlier suggests very little spillover or substitution effects among the control group (Dunn et al., 2010). Students in non-AVID schools generally displayed the same level of use of AVID techniques as control group members in AVID schools, with one exception. The use of Cornell Notes appeared to have spilled over to the control group (they were 12.4 percentage points more likely to report using Cornell Notes often or very often than students in non-AVID schools). However, on average they did not engage in more AVID strategies than students in non-AVID schools. Furthermore, analysis in Appendix 1 suggests the impact of any spillover was minor: AVID control group students were actually much less likely to attend post-secondary education than students in non-AVID schools

The fourth limitation of random assignment is attrition, which is a potential issue in any study requiring follow-up, regardless of whether there is random assignment. It can be particularly problematic in a social experiment since the control group has very little motivation to grant an interview. BC AVID sought to ameliorate this through various features such as a cash incentive for completed survey interviews and extensive sample tracing and tracking contacts between surveys. For the main outcomes of the study (post-secondary attendance and related activities), the analysis relies only partly on survey data (administrative data has been sought for all students whether survey respondents or not). However, some outcomes rely solely on survey data, so it is important to document attrition rates for the analytical samples and to study how these are related to baseline characteristics (for this analysis, see Appendix 2).

Fifth, BC AVID was designed to detect large impacts (often over 10 percentage points, depending on the group in question; see Dunn et al., 2008). In many cases, larger sample sizes would be required to detect smaller impacts. On the other hand, some impacts may be statistically significant for spurious

reasons. In this report, thresholds for statistical significance are set at three levels to follow standard conventions: 1 per cent, 5 per cent, and 10 per cent. A 5 per cent level of statistical significance means that there is only a 5 per cent chance that an impact estimate is different from zero due to chance variation from sampling. This means that conclusions that the program has a genuine impact are correct on average on nineteen out of every twenty occasions. Since many results are shown in this report, inevitably, some (about one out of every twenty at the 5 per cent level) will be statistically significant simply due to chance. For this reason, the report will focus on results that appear to be robust (such as those observed consistently or for many groups).

Chapter 3: The Implementation of BC AVID

Introduction

This chapter discusses the implementation of BC AVID over the course of the pilot project, beginning with the recruitment of staff and students and following the implementation of the program from Grade 9 through to Grade 12 in 18 project sites comprising a total of 21 middle and high schools, over a period of approximately six years. The focus in this chapter is on describing the implementation of BC AVID and comparing it to the expectations of the AVID Center for programs run in the United States, as outlined in the AVID Essentials and explained in AVID implementation guides and certification requirements. A more formal test of whether the program as implemented met the fidelity expectations set for the BC project follows in Chapter 4.⁹

The chapter first reviews staff recruitment and participation together with the challenges of staff turnover during the program operation. This is followed by an examination of student recruitment, selection, participation, and attrition from the class over time. The duration of exposure to AVID is presented for both the program group students and for a “core” group of students who remained in the AVID class through the entire Grade 9 to Grade 12 period. The scheduling of BC AVID classes is then reviewed, with an explanation of the complexities of the BC school timetable and the difficulties faced by BC educators in delivering the expected balance of curriculum, tutorial, and motivational activities. The implementation of the AVID elective class in BC schools is then described, including school experience with the AVID strategies across sites. The considerable challenges faced by BC sites with delivering AVID tutorials are documented followed by a review of AVID motivational activities. How BC schools have interpreted ‘rigour’ in order to deliver a rigorous curriculum is examined in light of differences between US and BC high schools and post-secondary education entrance requirements. The overview of AVID implementation ends with a review of the mentoring of BC AVID students and an outline of their reported future plans. Finally, the requirements for AVID certification are examined, noting the limitations of this method for examining the effectiveness of BC AVID program delivery.

Chapter Summary

- **Recruitment of BC AVID staff took place in 2004 and 2005 with training provided primarily at Summer Institutes.** All BC AVID sites received resources to deliver the AVID program and to pay for AVID staff training. Subsequent recruitment and training was required due to staff turnover. Core AVID team members included: AVID elective teacher, AVID counsellor, AVID coordinator, and

⁹ AVID is a program designed to help middle-achieving middle and high school students prepare for and succeed in four-year university programs. The AVID curriculum is defined by the AVID Center, a San Diego-based non-profit organization established in 1992 to promote the AVID program. There are some key differences between AVID as promoted by the AVID Center and the version of AVID implemented in British Columbia (referred to as BC AVID), as explained in Chapter 1. The differences include: BC AVID’s focus on four streams of post-secondary education, the merger of BC’s Planning 10 curriculum with the AVID curriculum, BC educators’ interpretation of ‘rigorous’ in identifying “rigorous courses,” and a focus on meeting BC’s post-secondary entrance requirements (rather than US four-year college entrance requirements). A modified set of program delivery expectations was thus developed for the pilot project and the project implementation is assessed against those expectations in Chapter 4.

AVID administrator. An AVID district director was engaged in each school district to oversee the AVID program.

- **Recruitment and selection of BC AVID students took place in 2004 (Cohort 1) and in 2005 (Cohort 2).** The project used a standardized recruitment and selection process to identify AVID-eligible students; a randomized lottery determined which students would be offered a place in the AVID class. The broad objectives of recruitment and selection were met: schools recruited and selected students according to the guidelines provided. Additional procedures for research purposes were included in the recruitment process for data collection, informed consent, and surveys.
- **Maintaining membership in BC AVID classes was challenging for AVID staff; attrition increased over time.** Approximately half (51.3 per cent) of students offered BC AVID 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.
- **The size and composition of AVID classes changed over time from an average size of 28 students in Grade 9 to 17 students in Grade 12; schools often combined grade levels or added additional (non-research participant) students to maintain a viable class size in Grade 12 due to declining AVID enrolment.** Attrition reduced the likelihood of sufficient numbers of AVID students being enrolled in common courses and may have affected the ability of classes to form functioning tutorial groups.
- **The BC school timetable made it very difficult for schools to meet AVID requirements for full implementation.** BC AVID class members attended an average of 116 hours of AVID per year rather than the recommended 150 hours. Some sites held one semester rather than full-year AVID classes in Grade 12 due to scheduling difficulties.
- **While the AVID Center recommends that the AVID elective class comprise 40 per cent curriculum, 40 per cent tutorial, and 20 per cent motivational activities, BC AVID classes included much more curriculum and much less tutorial time than recommended: 58 per cent curriculum, 24 per cent tutorial, and 18 per cent motivational.** BC sites varied greatly in the proportion of time allotted to each type of class activity. Due to an overlap in course content, BC staff combined the AVID Grade 10–11 curriculum and the Planning 10 course, which is mandatory for all BC students.
- **BC AVID staff delivered the WIC-R (writing, inquiry, collaboration, and reading) strategies in the AVID elective classes as expected:** The delivery of these core curricular program requirements varied across BC AVID sites. The variety of writing strategies increased over time; inquiry was taught in both curriculum and tutorial classes with Costa's three levels of inquiry being the primary tool; most AVID educators had used collaboration previously but became more focused in delivery of this strategy; many considered reading strategies the weakest area of WIC-R for Grade 9–11 but used a recently developed reading module to a much larger extent in Grade 12. BC AVID students also learned organizational skills and used agendas and a standardized binder system as recommended.

- **BC AVID tutorials varied greatly between sites throughout Grade 9–12.** While the AVID Center recommends tutorials have at least one tutor for every seven students, only 34 per cent of tutorials in random assignment sites met this (or more) ideal ratio while an equivalent proportion had no tutor present. Only 29 per cent of active BC tutors were post-secondary students; over half (52 per cent) of active tutors were high school students. The duration, breadth, and format of tutor training varied considerably across sites and over time. However, most BC AVID tutorials followed the recommended small group ideal with groupings primarily organized by subject area, being collaborative and student-led, using students’ questions as the basis for discussion.
- **BC AVID schools offered a variety of motivational activities including team-building activities, guest speakers, and field trips to post-secondary institutions.** The mean number of hours of field trips at the four case study sites was considerably greater than at the 14 random assignment sites, due to their greater distance from post-secondary institutions.
- **BC AVID staff struggled with how to best interpret rigour.** While the primary goal of AVID in the United States is four-year college, BC AVID interpreted a broader range of post-secondary education options as successful outcomes including university, college, private technical or vocational institute, or apprenticeship programs. While students were encouraged to “keep the door open” during most of the program, BC staff considered student post-secondary education goals in determining how to counsel students regarding course and program choices at the senior levels.
- **BC AVID mentoring was primarily carried out by AVID teachers, often with assistance from an AVID counsellor.** BC AVID staff frequently commented on the importance of the relationship between AVID student and teacher in assisting students to perform better in school work. AVID 12 students appeared confident in making plans about their future and indicated their future included post-secondary education; and teachers indicated that the majority of their AVID 12 students had met the entrance requirements for a post-secondary education program of their choice.

Staff Recruitment and Participation Over Time

Two AVID Essentials guide the recruitment of AVID staff and their participation in implementing the AVID program over time. Essential 11 requires that schools maintain an active interdisciplinary site team to help AVID students succeed in courses that meet university entrance requirements. The AVID Center requires that the site team receive training,¹⁰ complete annual site plans, meet certification standards, collaborate on program implementation, and assist the AVID elective teacher in program implementation. The AVID Center also recommends that the team provide ongoing mentoring of AVID students. Essential 2 requires staff participation to be voluntary.

¹⁰ AVID training includes more comprehensive initial training at Summer Institutes in San Diego and a few other key US venues but also Path training on a variety of AVID topics which is offered in more locations at different times of the year.

Site Team Recruitment

The recruitment of BC AVID site team staff often coincided with the school's involvement in the project selection of pilot sites during the spring of 2004. Administrators recruited interested educators to become part of their school's site team and to take the Summer Institute training in August 2004. Staff trained in a variety of roles including AVID administration, AVID coordination, and AVID tutorology as well as subject areas such as science, math, and languages. Schools continued their recruitment and training during the 2004–05 school year and participated in the Summer Institute training in August 2005. Some BC AVID educators attended additional Path training in Chilliwack in August 2006 and 2007 and other BC locations in 2008 to 2010. Path training is designed to cover instructional strategies that will lead students to success and that will assist them with a rigorous curriculum (Dunn et al., 2008).

AVID Elective Teacher Recruitment

The AVID teacher plays a key role in AVID program implementation: teaching the AVID strategies to students, mentoring students, communicating with site team members and assisting with coordination of the program. BC AVID teachers were often recruited by school administrators; a background in teaching English was often considered advantageous due to the overlap in curriculum. Approximately two-thirds of AVID classes experienced turnover of the AVID teacher between Grade 9–11 due to school transfers, staff leaving, or the teacher taking on a new position; one-third of BC AVID student groups experienced AVID teacher turnover for Grade 12. Despite this turnover, the large majority of AVID teachers were fully trained. While the AVID Center does not require that an AVID elective teacher remain with the same cohort of students throughout the length of the program, it does recommend that AVID teachers develop a strong mentoring relationship with students to better assist them with difficult transitions. However, the high turnover of AVID teachers may have made effective implementation of long-term teacher mentoring difficult.

Core AVID Team Roles

The core AVID team includes an AVID elective teacher, an AVID administrator, an AVID counsellor, and an AVID coordinator. The core team is supplemented with AVID trained subject area teachers whose role is to use the AVID strategies in their classes. The AVID teacher role is to teach AVID strategies and provide students with ongoing support to improve study habits and perform well in challenging courses. The AVID administrator role is to provide leadership for the program at the school level; BC administrators have assisted with staff recruitment, budgetary decisions, and communication at staff meetings. The AVID counsellor role is to provide academic and personal support for AVID students; BC counsellors have often assisted students with course selection and provided post-secondary education and career information. The AVID coordinator role includes a variety of organizational tasks: in BC, this has often included recruiting students and teachers, communicating with school staff, organizing site team meetings, scheduling guest speakers, organizing field trips, and coordinating meetings with parents.

AVID District Directors

AVID district directors are required to oversee AVID site teams and AVID program implementation. BC directors played a key role in introducing staff to the pilot project, recruiting site team members and overseeing their initial training. At some sites, the director was frequently a principal or vice-principal at the school. Thirteen of 31 school cohorts experienced changes in director between Grades 9–11; five sites experienced turnover just before or during Grade 12. In addition, there was high turnover of school principals who occupy a position to provide administrative leadership for the program at the school level.

Site Team Participation

BC AVID site teams had limited success in implementing Essential 11. Between Grades 9–11, most BC AVID schools had partially functioning site teams (more often a smaller team of core staff members carrying out AVID tasks rather than a full active team). By Grade 12, about half of BC AVID site teams were actively involved (more often as a core team) while half were either slightly active or inactive (did not meet regularly or function as a team).

Most of the responsibility for implementing the program in BC schools has been carried out by the AVID elective teachers, with some assistance from an AVID counsellor and sometimes an AVID administrator. Some BC staff believed the AVID teacher was the best person to coordinate the program and others believe it was best to share the tasks: in either case, there was a heavy time commitment. During the early implementation of BC AVID, staff noted that the ability of the site team to function cohesively as a support to the AVID teacher could be instrumental in the overall effectiveness of program implementation. BC AVID site teams found this increasingly difficult to carry out over time. There was high turnover of team members, necessitating ongoing recruitment and training of new AVID staff. There was limited use of AVID strategies in the classes of the AVID-trained subject area teachers. While site team plans were routinely completed in the earlier grades, this was more of a challenge by Grade 12. Additional challenges included lack of a strong AVID profile within the school and AVID teachers not delegating tasks or site team members not providing support.

Support and mentoring of AVID students was largely carried out by AVID teachers often with assistance from the AVID counsellor. Site team involvement was at the level of team discussion and problem-solving rather than one-on-one with a student. Even where site teams discussed individual AVID student needs, subsequent action was most frequently taken by the AVID teacher.

BC AVID teachers often commented on the close nature of the relationship they developed with their AVID students and believed that that relationship was instrumental in assisting students to make the necessary changes to be successful in school. They also commented on the family-like atmosphere within their AVID classrooms. Results from the core sample of Grade 11 survey respondents¹¹ and from

¹¹ The core group of Grade 11 survey respondents consists of program group and waitlist students who took up a place in the AVID class on or before September 30 of their Grade 9 school year (2005 for Cohort 1 and 2006 for Cohort 2) and who did not depart from that class before May 31 of their Grade 11 school year.

the National Longitudinal Panel (Appendix 4) corroborated the information from BC AVID staff members regarding support available for AVID students.

BC AVID Student Selection and Participation Over Time

BC AVID recruitment and selection was successful in recruiting sufficient numbers of eligible students. In total, 1,522 project participants were recruited across the 18 BC AVID Pilot Project sites. The recruitment and selection process involved several stages and proved resource-intensive. AVID site teams worked in winter and spring of 2005 (and winter and spring of 2006 at sites with two project research cohorts) to recruit and select AVID-eligible students. During depth interviews, site team members commented on the intensity of the work involved, especially at the interview stage. Although all students met the project-specified criteria, site team members varied in their assessment of the suitability for AVID of the students selected as AVID-eligible.

Student Selection

The project used a standardized recruitment and selection process to identify AVID-eligible students and a random lottery trial to determine which students would be offered a place in the AVID class. A committee with members from the AVID Center, Chilliwack School District, and SRDC designed procedures for determining eligibility modeled on existing selection processes. The project provided training and support, a Project Operations Manual and standardized application documents to assist schools with implementing the procedures (Dunn et al., 2008).

Procedures for the recruitment and selection of AVID students were designed to meet the requirements of AVID Essential 1 to focus on students in the middle, with academic potential, who would benefit from AVID support to improve their academic record and begin college preparation. The BC AVID selection criteria used a points-based system that weighted student characteristics to determine their suitability for AVID (Chapter 1: Table 1.1). While the professional judgment of educators is required at several points in selection, standardized procedures ensured similar weights would be assigned to equivalent concerns. Students who scored 45 points or more (out of 100) were deemed AVID-eligible: across all sites, 91 per cent of applicants were found eligible.

AVID-eligible students were assigned to program, comparison and wait list groups that would determine whether and how they were offered a place in the class. The program group was offered a place in the upcoming Grade 9 AVID class. The wait list group would be offered a place when a vacancy arose in the class. Comparison group members would not be offered a place in the AVID class. At case study sites, site team members assigned membership of the first two groups only. At random assignment sites, SRDC undertook the assignment of students to all three research groups using a lottery-like process.

The probability of being found eligible was perceived to be high by many sites. Some staff were dissatisfied with the recommended recruitment and selection process for this reason (Dunn et al., 2008). Other staff noted that learning how to apply the procedures, scoring in particular, took time and

Cohort 1 may have been affected by this inexperience among staff. Other educators found the guidelines and criteria very appropriate and felt they worked very well in selecting suitable students.¹²

The broad objectives of recruitment and selection were met: schools received the necessary resources and recruited and selected students according to the guidelines provided. Recruitment included awareness-raising and information sessions for students and parents, teacher recommendations, phone calls and mail-outs, and a written application and intensive interview process for students. Some BC AVID staff commented that they received inappropriate referrals from Grade 8 teachers particularly for Cohort 1 (the first recruitment) due to a misunderstanding of the profile of an AVID student and a misinterpretation of grade levels between Grade 8 and 9 schools. Staff commented on how useful the interview process was to learn more about the AVID candidates.

Additional procedures for research purposes were included as part of the recruitment and selection of AVID students such as supplementary data collection, informed consent from both parents and students,¹³ a student and parental baseline survey, and random assignment procedures to create a comparison group. To accommodate operational needs of schools, the random assignment ratio varied by site according to the number of eligible participants at the site.¹⁴ Staff determined how the students (among those found eligible for AVID) would be assigned to the AVID class at case study sites. AVID staff followed procedures for filling AVID class vacancies with AVID wait list students.

The entire recruitment and selection of students took more than three months on average, with the time elapsed between the first information session to parents and the sending of assignment notification letters averaging 10 weeks.¹⁵ There was considerable variation between sites in the number of successful applicants (from 27 to 115); more often, student recommendations outnumbered student applications. Fewer students were recruited for Cohort 2. Educators had mixed views on whether Cohort 1 or 2 students represented a better selection, though the majority expressed more confidence in the selection of Cohort 2 students.¹⁶

Student Participation

Maintaining membership in BC AVID classes was challenging for BC educators. While they followed guidelines to ensure that the research requirements were met, that procedures were fair, and that student participation was voluntary, attrition increased over time. Approximately half (51 per cent) of BC AVID students departed from the class by the end of Grade 11 and an additional 13 per cent departed in Grade 12. The most frequent reason for departure was “choosing another elective,”

¹² AVID coordinators at sites typically noted that their Cohort 2 students were more appropriate candidates, even though the project procedures were still followed.

¹³ AVID staff or a trained paraprofessional administered the consent procedures.

¹⁴ If there were fewer than 45 applicants at a site, approximately two-thirds of students were allocated to the program group and no students to the wait list. If there were 45 or more eligible applicants, a maximum of 30 students would be allocated to the program group as this was the maximum class size. At one AVID site with an excess of 90 eligible applicants, two AVID classes were created.

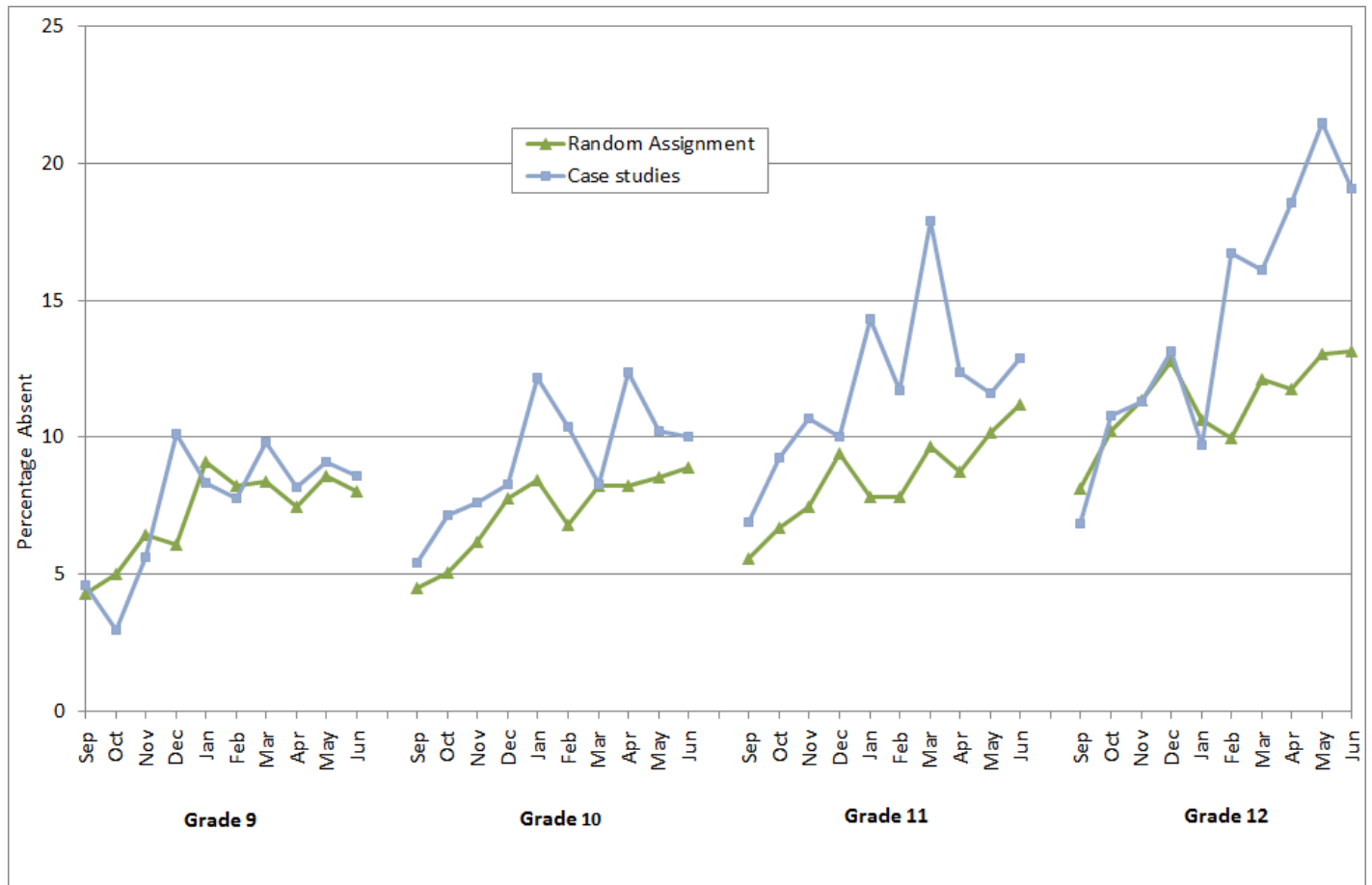
¹⁵ SRDC sent letters to all applicants to notify them of their class assignment.

¹⁶ In fact, both cohorts enrolled in post-secondary education at identical rates (61 and 62 per cent) as reported in Chapter 5.

followed by “moving to another school.” BC AVID educators indicated that scheduling difficulties were often a factor in students choosing another elective. BC AVID students from random assignment sites were significantly more likely to depart from the AVID class. There were no significant differences in rates of departure by gender. During Grade 9–11, student departures were significantly more likely to be from Cohort 1 and from lower income families. BC educators indicated that many AVID students did not have realistic expectations of the AVID program and did not anticipate the amount of work required to improve their grades and be more successful in their studies.

The size and composition of BC AVID classes changed over time. Most activity involving students moving from the AVID wait list into the AVID class occurred during Grade 9. The average size of classes decreased over time from an average of 28 students in Grade 9 to a low of 17 students in Grade 12. Due to declining enrolment and in order to maintain a viable class size, some sites merged classes or added additional students to their Grade 12 AVID classes, most frequently by adding additional (non-research) students to a Cohort 2 group. BC educators indicated that this worked well. Student absences increased over time and over the course of each school year; and case study students were more likely than those at random assignment sites to be absent each year (Figure 3.1).

Figure 3.1 BC AVID Elective Class Absences Over Time for All Participants Between Random Assignment and Case Study



Source: SRDC calculations using BC AVID class activities, departure, waitlist and student attendance forms collected from the pilot project sites.

Notes: The sample is limited to the four school years of data collection for Cohort 1 (2005–2006, 2006–2007, 2007–2008, 2008–2009) and Cohort 2 (2006–2007, 2007–2008, 2008–2009, 2009–2010).

BC AVID elective class is group of students in each site.

There are 19 BC AVID elective classes in Cohort 1. There are 13 BC AVID elective classes in Cohort 2.

There are 28 BC AVID elective classes in random assignment sites. There are 4 BC AVID elective classes in case study sites.

Who Stayed in AVID and Why Did They Stay?

During focus group discussions, senior BC AVID students commented on their reasons for staying in the AVID program throughout Grade 9–12.¹⁷ The most prominent theme concerned planning for the future

¹⁷ Seven focus groups were held at six BC AVID sites including: 1 Cohort 1 group, 2 combined Cohort 1/2 groups, and four Cohort 2 groups. All students were at the Grade 12 level except for a few Grade 11 Cohort 2 students in the combined Cohort 1/2 groups.

and receiving help with preparation for post-secondary education including program and scholarship applications: in particular, students emphasized the field trips to post-secondary education institutions and guest speakers who provided a cross-section of career options that resonated with these students. As one student said: “[AVID] gives you a look at what you actually want to do.” Another prominent theme that emerged concerned students recognizing that AVID was helping them to perform better in school and become more focused and motivated: it reduced their apathy and tendency to procrastinate and helped them to become better organized and learn life skills: “it’s not just school skills that you learn here, it’s life skills.” Students from two other sites commented:

You learn how to succeed in life.

I’ve seen where I’ve succeeded, where I was, and now where I am today. I’m more than sure that without AVID, I would have not even applied or even thought about going to university. And I’m pretty sure that if I wasn’t in AVID, I wouldn’t be in school right now, because I wouldn’t care about it. That’s just the way it was for me.

The bonds of friendship among AVID students and with the AVID teacher were also very important as indicated by this student comment: “If I dropped out, it would be like dropping out of my family.” The ‘contract’ that students signed at the start of the program to work hard and over an extended period of time deterred many from dropping out during the initial, reportedly more difficult years of the program. Although getting better grades was an important side effect of improved study habits for some students, it was not the primary focus for what kept most of these students in AVID.

Scheduling BC AVID

AVID Essential 3 requires that a school commit to full implementation of the AVID program, including year-long AVID elective classes available within the regular school timetable (where the majority of academic classes are offered). The class must be fully enrolled (that is, having roughly the same number of students as other classes at the school) and must have a balanced use of AVID curriculum, tutorial, and motivational team-building activities, with 40 per cent of the time devoted to teaching the AVID curriculum, 40 per cent to tutorials, and 20 per cent to motivational activities.

BC School Timetable

The BC school timetable made it very difficult for schools to meet AVID requirements for full implementation. Most BC high schools have a *semester system*, particularly at senior grade levels, which divides the school year into two semesters.¹⁸ Classes typically occur for one semester only. Some

¹⁸ Most schools require students to take eight courses per year and organize the timetable to provide four classes of approximately 75–80 minutes per day. The main components of each type of timetable follow:

- Semester timetable: a timetable configuration that is used in many BC high schools. Semester timetables run the same four courses every day for one semester. Typically schools require students to take four courses each semester for a total of eight courses per year. Semester 1 runs from September to January and Semester 2 runs from February to June.

schools have all their courses scheduled in a *linear system*, but few schools adopt this system at the Grade 12 level. In schools with a semester system, AVID is often scheduled as a linear course so that classes occur every second day throughout the entire school year (which meets the AVID requirement for year-long classes): in this system, however, another course must also ‘back’ (or ‘pair with’) AVID in the timetable (which AVID students would be expected to attend) since this course’s classes take place on the alternating days. Implementing AVID in this combination can be a challenge for schools (Dunn et al., 2010).

In addition to the semester and linear aspects of timetabling, many BC schools have a *rotating timetable*, where the same class meets on different days and times during the school week, so that no one course receives preferential time slots. A rotating timetable makes it particularly difficult to schedule tutors (Dunn et al., 2010).

BC AVID Delivery of Class Activities

BC AVID staff faced considerable challenges in scheduling AVID class activities to meet the suggested amount of AVID class time and the recommended balance of class activities. BC AVID students typically attend eight courses per year to produce an average of about 116 hours of AVID class time annually, while the AVID Center estimates that students should attend approximately 150 hours of AVID class time per year (Dunn et al., 2010).

The average exposure of program group members to AVID was less than the 600 hours that might be assumed from constant attendance at classes run to meet the AVID Center expectation of 150 hours annually for four years. In fact, it was little more than half this amount (303 hours), as illustrated in Figure 3.2. There are at least two additional reasons why this average falls short of the ideal, besides the structure of the BC timetable:

- **Student attrition:** some program group members left the AVID class (and sometimes the AVID school) and so did not receive AVID in every year;
- **Student non-attendance:** nearly all program group members were absent from class when they might otherwise have been expected to attend, for reasons such as illness.

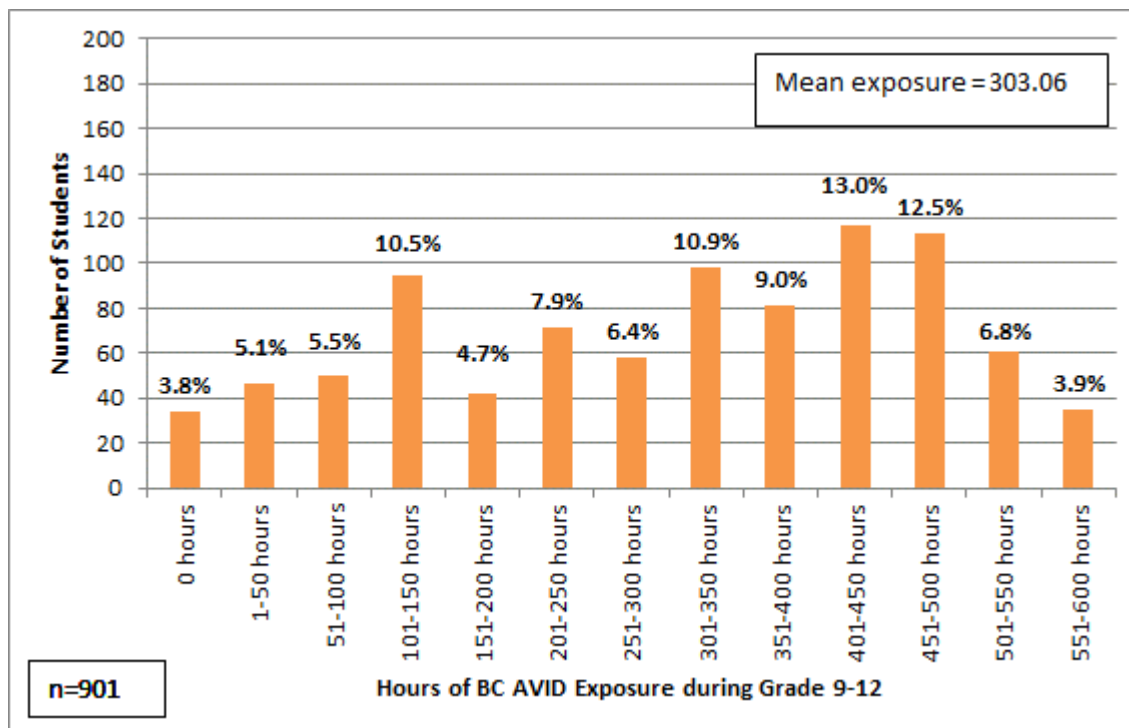
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- **Linear timetable:** a timetable configuration that is used in many BC middle schools and high schools. Linear timetables run the same courses year long (both semesters) using a Day 1/Day 2 system where the courses occur every second day for the entire school year.

It is possible to schedule a school timetable that combines linear and semester formats. To run a linear course in a semester timetable format requires linking two classes (such as AVID and English) and having the classes meet every other day for both semesters (so students could have either English or AVID each day all year).

- **Block:** an individual period in the school timetable into which a course is scheduled; most BC high schools have four blocks per day averaging 75–80 minutes per block.
- **Rotating block timetable:** a system for scheduling the course blocks in a school timetable so that the blocks rotate through all time slots in the timetable. Rotating block timetables are common in BC high schools.
- **Fixed block timetable** – a system for scheduling the course blocks in a school timetable so that the blocks occur at the same time each day; also referred to as ‘static’ block.

As might be expected, the core group of AVID program group students who did not depart the program prior to the end of Grade 11 had considerably more exposure to AVID over the four years. On average each member attended 427 hours (Figure 3.3) which is not far short of the maximum the typical BC school timetable would allow (4x116 hours, or roughly 464 hours). But this total is still considerably short of the AVID ideal of 600 hours.

Figure 3.2 Cumulative Exposure to BC AVID for Program Group Students (4 Years Combined)



Source: SRDC calculations using BC AVID class activities, departure, waitlist and student attendance forms collected from the pilot project sites.

Notes: The sample is limited to the four school years of data collection for Cohort 1 (2005–2006, 2006–2007, 2007–2008, 2008–2009) and Cohort 2 (2006–2007, 2007–2008, 2008–2009, 2009–2010).

BC AVID elective class is group of students in each site.

There are 19 BC AVID elective classes in Cohort 1. There are 13 BC AVID elective classes in Cohort 2.

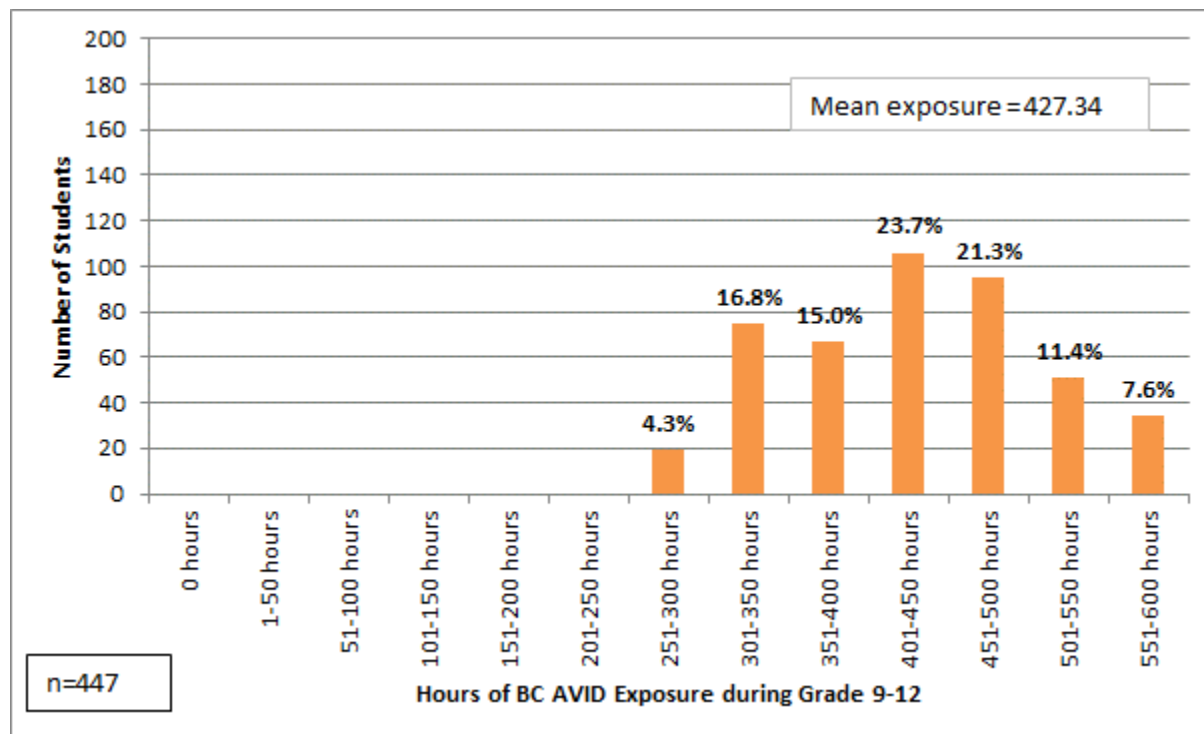
There are 28 BC AVID elective classes in random assignment sites and 4 BC AVID elective classes in case study sites.

The AVID Center recommends that the AVID elective class include 40 per cent curriculum, 40 per cent tutorial, and 20 per cent motivational activities. However, BC AVID classes on average included much more curriculum and much less tutorial time than recommended: 58 per cent curriculum, 24 per cent tutorial, and 18 per cent motivational (Figure 3.4). BC AVID educators at more than half of sites reported that meeting the suggested breakdown of AVID class activities was challenging. Lack of tutors was frequently given as a reason for less tutorial time.

There was also considerable variation between the classes receiving BC AVID (32 “classes” in Grades 9–11; 30 “groups” of AVID students in Grade 12) in the proportion of time allotted to each class activity

(curriculum, tutorial, and motivational). The range of *tutorial time* in BC AVID classes varied from 3 to 55 hours (Grade 9), 9 to 42 hours (Grade 10), 6 to 52 hours (Grade 11), and 5 to 67 hours (Grade 12). Only one-third of Grade 9 and Grade 10 AVID classes, and one quarter of Grade 11 classes received at least 75 per cent of the recommended proportion of tutorial time. Approximately 30 per cent of Grade 12 classes received a similar proportion. The proportion of curriculum class time varied from 36 to 76 per cent in Grade 9; from 41 to 82 per cent in Grade 10; from 35 to 85 per cent in Grade 11; and from 31 to 95 per cent in Grade 12. The range of motivational activities also varied greatly between AVID classes: 31 per cent of Grade 9 classes, 41 per cent of Grade 10 classes, 44 per cent of Grade 11 classes, and 37 per cent of Grade 12 groups experienced at least the recommended time for motivational activities (20 per cent).

Figure 3.3 Cumulative Exposure to BC AVID for "Core" Program Group Students (4 Years Combined)



Source: SRDC calculations using BC AVID class activities, departure, waitlist and student attendance forms collected from the pilot project sites.

Notes: The sample is limited to the four school years of data collection for Cohort 1 (2005–2006, 2006–2007, 2007–2008, 2008–2009) and Cohort 2 (2006–2007, 2007–2008, 2008–2009, 2009–2010).

BC AVID elective class is group of students in each site.

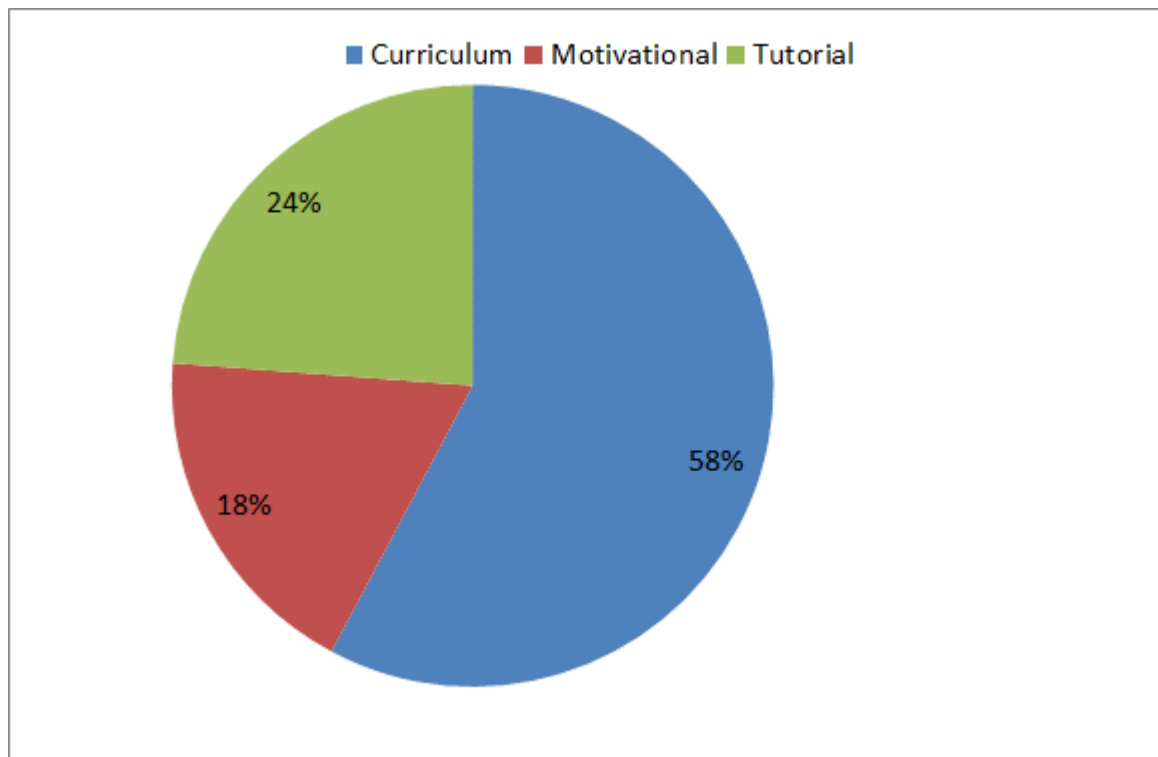
There are 19 BC AVID elective classes in Cohort 1. There are 13 BC AVID elective classes in Cohort 2.

There are 28 BC AVID elective classes in random assignment sites and 4 BC AVID elective classes in case study sites.

Core group students are students who responded to Grade 11 survey and registered in the AVID class between the first day of October of their Grade 9 and the last day of May of their Grade 11 year without any departures.

While in a few schools it was possible to exempt AVID from the rotating timetable by according it “priority” status so that it would be placed in a fixed “static” block, this caused friction among school staff who saw this as giving AVID preferential treatment compared to other courses or programs. Finding a suitable class to “back” AVID in a linear timetable proved difficult and by Grade 12, some schools switched the AVID class to a single semester in part to avoid that difficulty. This meant students at these schools experienced an entire semester without AVID classes.

Figure 3.4 Share of BC AVID Class Activities by Type of Activity (Cohorts 1 and 2)



Source: SRDC calculations using BC AVID class activities forms collected from the pilot project sites.

Notes: The sample is limited to the four school years of data collection for Cohort 1 (2005–2006, 2006–2007, 2007–2008, 2008–2009) and Cohort 2 (2006–2007, 2007–2008, 2008–2009, 2009–2010).

BC AVID elective class is group of students in each site.

There are 19 BC AVID elective classes in Cohort 1. There are 13 BC AVID elective classes in Cohort 2.

There are 28 BC AVID elective classes in random assignment sites. There are 4 BC AVID elective classes in case study sites.

Duration of field trip is adjusted to 16 hours maximum.

Another challenge faced by BC staff concerned the overlap in curriculum between AVID and the Planning 10 course, which is mandatory for all BC students. Both courses include content for preparing students for post-secondary transitions, such as education and career goals, future planning, health and financial well-being, time management, post-secondary education entrance requirements, choosing a post-secondary education institution, the post-secondary education application process, and preparing

a portfolio of work. BC sites combined the AVID and Planning 10 curricula for Grades 10 and 11; BC teachers reported that this worked well (Dunn et al., 2010).

The scheduling of AVID classes in Grade 12 was particularly difficult for many BC sites. BC students have only one *required* course at the Grade 12 level (Language Arts). Students choose from a variety of academic and non-academic electives, many of which have little flexibility within the timetable. This led to more scheduling conflicts between AVID and other academic courses. Students often had to choose between AVID and another course of importance to them; and it was often difficult to schedule tutorials alongside a sufficient number of academic subjects. Also, with declining AVID enrolment in Grade 12, schools often combined grade levels and cohorts to reach a viable class size. This increased the likelihood that students in the AVID class were enrolled in a large number of different courses, which in turn affected the ability of classes to form functioning tutorial groups.¹⁹

Delivery of WIC-R to BC AVID Students: Grade 9–12

The core of the AVID curriculum class is the WIC-R methodology, which stands for Writing, Inquiry, Collaboration, and Reading. For each of these four strategies, the AVID Center provides extensive and detailed curricular resources to AVID elective teachers about the methods to be used in the classroom. AVID methodologies are often based on well-known and highly regarded teaching practices. AVID teachers typically choose from a broad selection of curricula to determine which techniques to use based on their training and professional development. The delivery of these core curricular program requirements varied across BC AVID sites.

Writing Strategy

The AVID writing program (Essential 5) focuses on different stages and types of writing that are intended to help students clarify and organize their thoughts and experiences with the aim to lead to greater understanding. The curriculum includes specific writing-to-learn techniques such as Cornell Notes,²⁰ Learning Logs,²¹ letter writing and essays. The AVID writing curriculum was implemented extensively across BC AVID sites. Students reported frequent use of Cornell note-taking and essay-writing techniques such as pre-writes and outlines. BC AVID teachers gradually adapted the timeline for implementing writing strategies when they found the recommended timelines unrealistic for their students. Teachers often commented on the overlap between the AVID writing and reading curriculum and the English curriculum. AVID teachers with a background in English found themselves in a more advantageous position.

¹⁹ Tutorial groups are subject orientated, so groups cannot be formed for subjects that too few AVID students are taking.

²⁰ 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.

²¹ 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?’*

The focus of the writing program within BC AVID changed over time. AVID teachers focused initially on fundamental writing skills (such as note-taking, brainstorming, and reflections). In Grades 10 and 11, consistent with program expectations, teachers emphasized a wider variety of writing activities and writing forms included autobiographical essays, poetry and Quick Writes.²² In Grade 12, BC AVID teachers used a wide variety of AVID writing activities such as learning logs, essays, letters, timed writing, reflections, Quick Writes, and redrafts. While most BC AVID classes continued to use the Cornell note-taking method in Grade 12, there was less instructional time spent on note-taking than in earlier grades due to students' familiarity with the note-taking system. While AVID recommends the use of standardized testing to prepare students for university or college, SATs²³ are not a requirement for entrance to post-secondary education in BC and were therefore not emphasized. However, BC AVID teachers did incorporate a post-secondary education focus into their Grade 12 curriculum: students completed research on Canadian post-secondary education options, wrote post-secondary education application letters, and applied for student aid. They also followed the AVID program recommendation to focus writing on leaders and leadership qualities.²⁴

Inquiry Strategy

The AVID program is deliberately based on inquiry rather than lecture, "*because it is the process of posing and answering questions that teaches students to think.*"²⁵ A key concept is that levels of questioning correspond to a hierarchy of cognitive skills, such that increasingly complex types of questions correspond to higher levels of intellectual functioning.²⁶

BC AVID teachers said they emphasized Inquiry (Essential 6) in order to develop their students' critical thinking skills, and Costa's three-level model was viewed as the fundamental concept in the inquiry curriculum. Many teachers reported that their Grade 9 students found it very difficult to move beyond the easier Level 1 questioning and that Level 3 questioning was too difficult for most Grade 9 students' capabilities. BC AVID staff varied their methods for implementing inquiry: some teachers focused on

²² Quick Writes are timed writing exercises, aimed at helping students learn to write with ease.

²³ SATs are standardized achievement tests that play a major role in determining entrance to US colleges and universities.

²⁴ Students did research, wrote essays and made presentations on their chosen leaders.

²⁵ Swanson et al., 2004, p. 90.

²⁶ Two models are recommended in the AVID curriculum, one by Arthur Costa, and the other by Benjamin Bloom. In Costa's three-part Model of Intellectual Functioning, Level One questions ask a student or reader 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 reader to evaluate and apply information, deriving answers from his or her own prior knowledge or experience. See Costa, Arthur L. (1985). *Developing Minds: A Resource Book for Teaching Thinking*. Alexandria: Association for Supervision and Curriculum Development. Bloom's taxonomy, on the other hand, entails six levels of cognitive skills. See Bloom, Benjamin Samuel. (1956). *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain*. New York: David McKay Co. Inc. BC AVID teachers preferred Costa to Bloom because it seemed to them to be much simpler and easier for students to understand.

one level at a time, gradually moving to a higher and more difficult level while others introduced Costa's three levels of questioning as a unit.

Grade 11 survey responses provide support that considerable attention was given to the Inquiry curriculum in Grade 9–11. Nearly all students (96 per cent) reported being taught different types of questions; more than two-thirds (68 per cent) reported having been often taught Costa's Levels of Questions and more than half (53 per cent) often used Costa's levels in their notes or in class, primarily in English, social studies, and science classes.

The pattern of strong inquiry use continued during Grade 12; students frequently used Costa's Level 3 questions, the highest level of inquiry on the scale. BC AVID teachers indicated that their Grade 12 students were very skilled at questioning and that they generally enjoyed the inquiry process, engaged in critical thinking, and asked insightful questions.²⁷

While a few teachers viewed tutorials as the primary vehicle for implementing inquiry, most also taught inquiry within their curriculum classes. Several teachers said they found Socratic Seminars and Philosophical Chairs (or modified versions of these) to be particularly effective ways to teach Inquiry and noted they were very popular with students, albeit also quite time consuming to implement.²⁸ In particular, they believed that the format of the Socratic Seminar lent itself to inclusive, exploratory and respectful discussion. BC teachers indicated that Grade 12 students appeared very comfortable with controversial topics and stating their viewpoints.

Collaboration Strategy

BC AVID teachers frequently commented during early implementation that collaboration or group work had been used in schools for a long time and that it was just good teaching practice. The majority of these teachers were already using collaboration in their classrooms before implementing AVID.

Most BC AVID teachers found it easier to implement collaboration (Essential 7) in Grades 10 and 11 than in Grade 9. During observations, SRDC staff observed Grade 9 students in a variety of classes and interaction varied from engaged and interested to indifferent and sometimes disruptive. While some students initially resisted collaboration, this was less of a problem after Grade 9. However, not all students liked collaboration, particularly if they were more quiet or shy or if it didn't fit their learning style.

BC teachers found ways to engage students in collaborative activities, sometimes assigning seating arrangements or supervising closely. Teachers who had previously used collaboration often did more of it or the collaboration became more focused with AVID. They noted that over time their students

²⁷ Teacher comments about their use of inquiry and about student participation in activities that emphasized critical thinking were supported in Support and Feedback reports (Chapter 2): the reports indicate that in the large majority of Grade 12 AVID classes, teachers asked questions appropriately and students were able to analyze, probe for information, and apply their learning.

²⁸ Socratic Seminars employ the widely known method of using constant questioning to explore a complex issue. Philosophical Chairs are a kind of structured dialogue in which the discussion is organized using a modified debate format. It has specific ground rules (for example, each speaker must summarize what the previous speaker said) and students try to convince other participants to "join their side" of the debate.

became more effective at collaborating, would work with students they previously had not, were more supportive of each other, and were more willing to take risks expressing their opinions. Based on responses of the core sample to the Grade 11 survey, small group work was a predominant feature of collaboration.

While tutorials were an important vehicle for collaboration, students engaged in many collaborative activities in curriculum classes as well. Collaboration took place in a variety of formats — pairs, triads, small groups, teams, or large groups — and involved a large number of learning processes, including: problem-solving discussion, presentations, partner interviews, peer editing of written work, group problem solving, cooperative research and organizing events.

The majority of BC AVID teachers indicated that their Grade 12 students liked to collaborate and did it well; they discussed ideas and concepts and were very comfortable working with each other. Students tended to be tolerant and respectful towards each other and would collaborate within class even if they did not socialize outside of class.

Reading Strategy

BC AVID teachers indicated that the reading component of WIC-R (which forms Essential 5 along with the writing strategy) received the least attention both initially and in Grades 10 and 11 (Dunn et al., 2010). It was the most difficult to implement and the ‘weakest’ area of the program. Factors that contributed to this included limited time, needing to prioritize, and the fact that reading was already a focus in English classes.

However, reading strategies became much more of a focus in Grade 12, particularly for Cohort 2 students. More than two-thirds of Grade 12 BC AVID teachers made strong use of AVID reading strategies such as “chunking” and summaries, pre-reading, highlighting, summarizing, and literature circles. BC AVID teachers were introduced to the critical reading strategies developed by the AVID Center during Summer Institute training as well as through AVID training provided within BC: they spoke very positively about these strategies.²⁹

BC AVID Tutorial Experience

The AVID tutorial (Essential 8) is a core feature of AVID implementation. It is intended to support students’ learning in rigorous courses and to provide role models for their own transition to post-secondary education in the form of regular contact with post-secondary students. The effectiveness of AVID tutorials relies, in part, on the qualities and capabilities of the tutors who guide AVID students as they attempt to navigate a rigorous post-secondary-focused curriculum. Ideally the tutors are post-secondary students. Alternatively for Grade 9–11, tutors could be senior high school students enrolled in demanding highly academic courses leading to post-secondary education.

²⁹ Much of this training in critical reading strategies occurred when BC AVID students were at the Grade 12 level, in particular prior to Cohort 2 students entering Grade 12.

How Many Tutorials Were Held, How Often, and For How Long?

The AVID Implementation Guide recommends that tutorials should be held for periods of approximately 45–50 minutes at least twice a week. BC AVID tutorials were far less frequent and varied markedly between sites throughout Grade 9–12, as indicated in the large differences between minimum and maximum values for all characteristics in Table 3.1.

The mean duration of tutorials for Grade 9–12 averaged 63 minutes at random assignment sites: this is more than recommended but not surprising considering the longer class times typical of the semester system used by BC schools. Case study tutorials averaged 45 minutes, which is within the recommended time frame.

The mean number of tutorials offered each year in random assignment classes was only 28.6, at an average of 3.5 tutorials per month which is well below the AVID Center recommendation of twice per week. Case study sites fared slightly better with a mean number of 35.1 tutorials, an average of 4.0 tutorials per month.

The mean number of tutorial hours at random assignment sites was only 30.1 hours per year, half the recommended amount. US schools should average about 150 hours of AVID class time per year (Dunn et al., 2010). Tutorial time (based on the recommended 40 per cent) would be approximately 60 hours per year.

While some of the range in variability in BC AVID tutorials can be attributed to some sites scheduling both curriculum and tutorial time in an elective class, most of this variability relates to the significant challenges faced by sites implementing tutorials.

How Much Exposure Did Students Have to Tutorials?

While the number of tutorial hours was considerably lower than recommended by AVID Center, class members' attendance at the tutorials offered was high. Using attendance data, number of students expected in class, and hours of tutorial time offered, students' exposure to tutorials can be calculated. A total of 70,997 hours of tutorials were offered at random assignment sites from Grade 9–12 while 64,995 of the offered hours were attended for an average attendance rate of 91.5 per cent. The attendance rate at case study sites was slightly lower (90.3 per cent).

How Many Tutors Led Tutorials and What Was the Ratio of Tutors to Students?

The total number of people recruited as tutors at BC AVID sites between 2005 and 2010 was 705. During Grade 9–12, a total of 531 were “active tutors”, meaning that they tutored at least once in an AVID classroom. Some of the others tutored younger AVID students in lower grades who were not part of the pilot project, or did not tutor the project sites' AVID classes after training, usually because of scheduling problems.

Table 3.1: Overview of BC AVID elective class tutorials by site type (Cohort 1 and Cohort 2)

		Grade9			Grade10			Grade11			Grade12			Grade 9-12 combined		
		RA	CS	all sites	RA	CS	all sites	RA	CS	all sites	RA	CS	all sites	RA	CS	all sites
Number of tutorials																
	minimum	5	28	5	8	32	8	6	17	6	4	16	4	4	16	4
	maximum	61	46	61	59	54	59	58	40	58	74	35	74	74	54	74
	mean	29.6	37.0	30.6	29.0	42.8	30.7	27.9	32.5	28.4	28.0	28.0	28.0	28.6	35.1	29.4
	median	27	37	29	29	43	29	27	37	28	25	31	27	27	35	29
Number of tutorial hours																
	minimum	3.3	25.2	3.3	8.7	25.3	8.7	6.0	12.7	6.0	5.0	9.3	5.0	3.3	9.3	3.3
	maximum	55.0	35.5	55.0	41.8	38.0	41.8	52.0	34.7	52.0	67.2	34.4	67.2	67.2	38.0	67.2
	mean	30.6	30.3	30.5	30.4	31.4	30.5	29.6	23.3	28.8	29.8	20.7	28.6	30.1	26.4	29.6
	median	33	30	32	34	31	33	32	23	31	28	20	28	32	28	31
Duration of tutorials (min)																
	minimum	25	15	15	20	30	20	15	20	15	10	15	10	10	15	10
	maximum	90	80	90	150	80	150	120	76	120	85	77	85	150	80	150
	mean	61.9	49.1	60.0	62.9	44.1	59.6	63.8	43.0	60.8	64.0	44.4	61.4	63.1	45.2	60.4
	median	70	40	60	65	40	64	75	40	65	75	45	65	70	40	65
Frequency of tutorials per month																
	minimum	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	maximum	11	9	11	10	9	10	10	9	10	10	6	10	11	9	11
	mean	3.6	4.4	3.7	3.4	4.8	3.5	3.4	3.7	3.4	3.7	3.3	3.7	3.5	4.0	3.6
	median	3	4	4	3	4.5	3	3	4	3	3	3	3	3	4	3
Total number of tutorial n=		830	148	978	812	171	983	780	130	910	727	112	839	3149	561	3710

Source: SRDC calculations using BC AVID class activities forms collected from the pilot project sites.

Notes: The sample is limited to the four school years of data collection for Cohort 1 (2005-2006, 2006-2007, 2007-2008, 2008-2009) and Cohort 2 (2006-2007, 2007-2008, 2008-2009, 2009-2010).

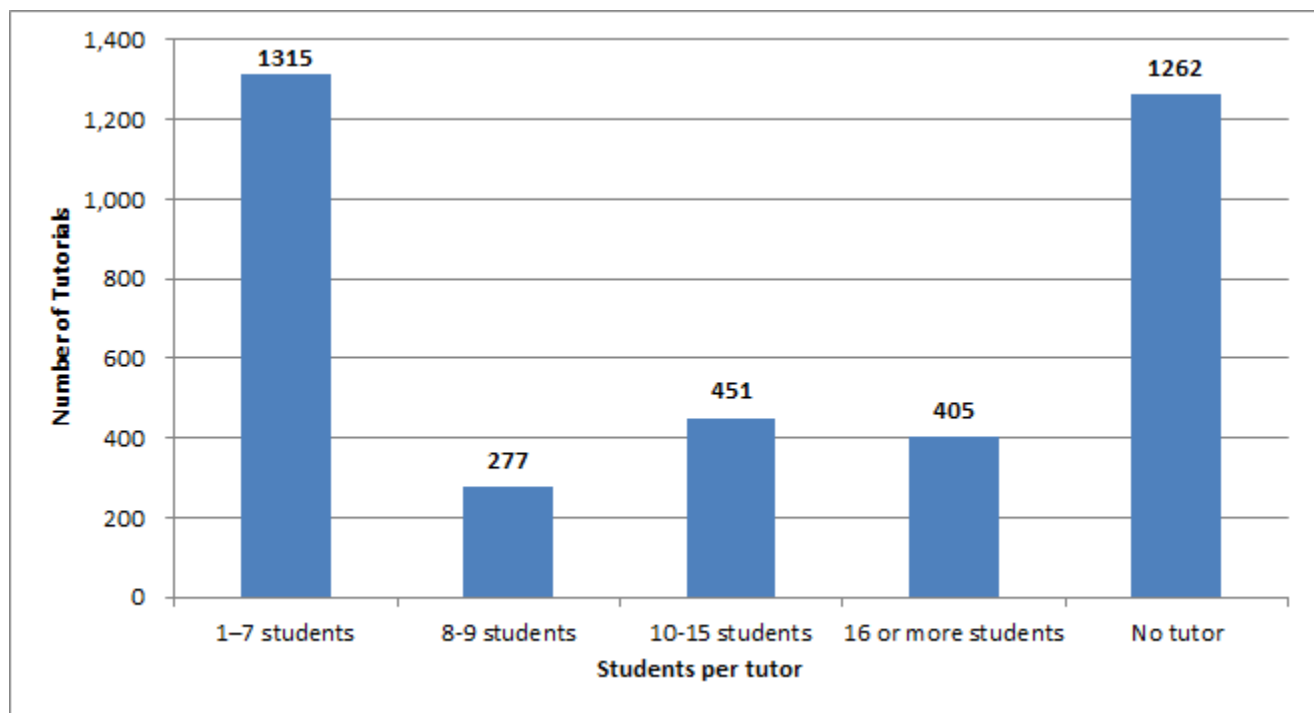
BC AVID elective class is group of students in each site.

There are 19 BC AVID elective classes in Cohort 1. There are 13 BC AVID elective classes in Cohort 2.

There are 28 BC AVID elective classes in Random assignments sites There are 4 BC AVID elective classes in Case study sites.

The AVID Center recommends tutorials have at least one tutor for every seven students: during Grade 9-12, only 34.0 per cent of tutorials in random assignment sites achieved this target ratio while an equivalent proportion (33.9 per cent) had no tutor present (see Figure 3.5). The primary reasons for this shortfall were difficulties the AVID site teams had recruiting sufficient tutors and matching their schedules to those of the AVID elective classes.

Figure 3.5 Four-year Student Tutor Ratio for BC AVID Elective Class Tutorial Activities (Cohorts 1 and 2)



Source: SRDC calculations using BC AVID class activities, departure, waitlist, student attendance, and tutor attendance forms collected from the pilot project sites.

Notes: The sample is limited to the four school years of data collection for Cohort 1 (2005–2006, 2006–2007, 2007–2008, 2008–2009) and Cohort 2 (2006–2007, 2007–2008, 2008–2009, 2009–2010).

BC AVID elective class is group of students in each site.

There are 19 BC AVID elective classes in Cohort 1. There are 13 BC AVID elective classes in Cohort 2.

There are 28 BC AVID elective classes in random assignment sites. There are 4 BC AVID elective classes in case study sites.

Who Were the BC AVID Tutors and How Were They Recruited?

The AVID Center recommends that AVID tutors be post-secondary students who ideally have graduated from the high school in which they tutor. As noted in the AVID Implementation Guide (Swanson et al., 2004 p.25), they are expected to be advocates for the students' academic and social growth. More

recently, the AVID Center has broadened their recommendation to include high school students in a more senior grade and different class than those they tutor.

In BC AVID, 29 per cent of active tutors during Grade 9–12 were post-secondary students. More than half (51.6 per cent) of active tutors were in high school: most often, these tutors were senior students in the same high school. BC AVID tutors were typically female and did not have previous tutoring experience. Recruiting post-secondary tutors for case study sites was difficult (as anticipated): however, it was also difficult for random assignment sites. A major obstacle was the difficulty matching the schedule of potential post-secondary education tutors with the schedule for tutorials. A rotating timetable often made the scheduling of tutors particularly difficult.

The AVID Implementation Guide notes that AVID tutors should present as role models of motivated, successful organized college students. While BC AVID staff generally supported this ideal, they also indicated that their lack of access to post-secondary students who could serve as tutors was a challenge.

The most reliable tutors — used by every site — were senior students in the same school. One high school experimented with using video conferencing technology to conduct online tutorials with post-secondary students at a distant post-secondary institution, while some schools used student teachers, educational assistants, First Nations support workers, or library staff as tutors. The fact that high school tutors were close in age to AVID students meant tutors sometimes felt uncomfortable acting as role models and found it challenging to manage tutorial dynamics (Dunn et al., 2010).

Case study sites tended to be smaller and located in more rural or remote areas than random assignment sites. As expected, case study sites had more difficulty recruiting post-secondary tutors due to their distance from post-secondary education institutions.

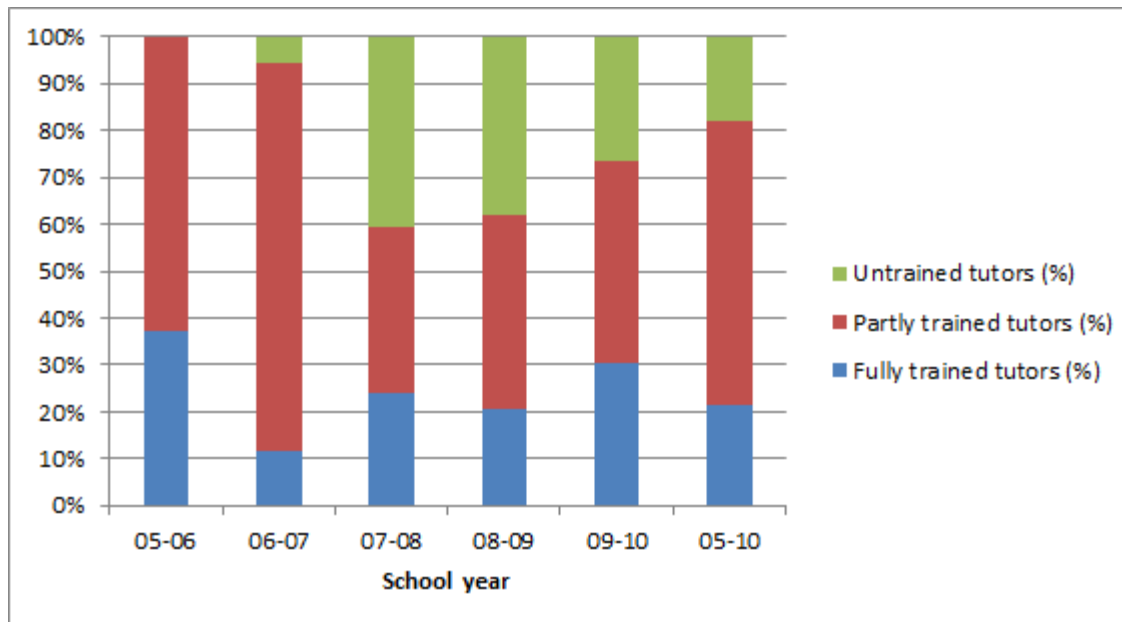
What Training Did Tutors Receive?

All of the 18 sites had designated tutor trainers/coordinators for at least the first years of the project and most continued to integrate this position into the site team over the duration of the project. The majority of tutor trainers had been trained in tutorial techniques, either at AVID Summer Institutes or at specialized two-day training sessions the project organized in BC each summer.

Both basic and intermediate level tutor training was provided for BC AVID tutors. Interviews with BC staff indicated that the duration, breadth, and format of tutor training varied considerably across sites and over time. Many BC sites found the time frame of 16 hours tutor training initially recommended by the AVID Center as neither realistic nor appropriate. BC staff preferred the modified program put forward by AVID in 2007 whereby tutor training could occur in smaller chunks of time. In addition, most tutor trainers said it was important to provide ongoing training support to tutors, such as through debriefing after tutorials or one-on-one coaching.

Figure 3.4 indicates that most tutors received some training: 61 per cent of BC AVID tutors were partly trained, 21 per cent were fully trained, and 18 per cent were untrained. However, only a minority of tutors in any given year received the full complement of training.

Figure 3.6 BC AVID Active Tutors by Level of Training



Source: SRDC calculations based on data collected from schools re: BC AVID tutor cover sheet and tutor attendance.

Notes: The sample is limited to the four school years of data collection for Cohort 1 (2005–06, 2006–07, 2007–08, 2008–09) and Cohort 2 (2006–07, 2007–08, 2008–09, 2009–10).

How Did BC AVID Tutorials Function?

The AVID Implementation Guide provides a description of ideal tutorial functioning and articulates three different models of tutoring: a student-centred model, a collaborative model, and a teacher-centred model.³⁰ The student-led model is considered ideal but the Guide suggests moving between the three models while maintaining the following four principles of tutoring: tutors model academic skills and personal success while maintaining rapport with students; students (not tutors) do the work of finding the answers to questions; students' learning needs are prioritized and focus is placed where the need is greatest; and tutors need not be subject area experts.

Ideally, students should come to tutorials prepared to participate, with two or three challenging questions already formulated on a Tutorial Request Form and with the required notes, binders, and books. Students form small groups based on the subject area of the questions posed. Students take turns posing questions to the group and then work collaboratively to develop an answer, written

³⁰ In the *student-centred model*, students direct the session and tutors play a limited role, using questions to facilitate students' discovery of a subject; in the *collaborative model*, the tutor identifies the problem areas for discussion, but shares in the discussion and problem-solving equally with the student; in the *teacher-centred model*, the tutor briefly provides information about a subject or issues directives for the work to be done, and students generally listen or clarify ideas.

versions of which are handed in to the teacher or tutor for marking. Tutors also often grade students on their participation.

Data from interviews, focus groups, tutorial observations (usually at least two tutorials were observed for each class), and student responses to the Grade 11 survey were used to determine the extent to which BC AVID tutorials demonstrated the characteristics of an ideal tutorial — small groups, organized by subject area and on the basis of students' questions, and student-led, collaborative discussions.

Most BC AVID tutorials followed the small group ideal. As recommended, groupings were primarily organized by subject area, and students' questions were the basis for discussion. While teachers at most sites generally expected tutorial questions to be prepared in advance, a few said they became more lenient over time. All sites used the tutorial request forms at least during the early years of implementation. Having a sufficient number of students to maintain tutorial groups was a challenge particularly during senior grades when fewer students took the same courses.

Evidence indicates that BC AVID tutorials were collaborative and student-led. Elective teachers made an effort to ensure that the tutorial groups functioned well for both students and tutors in terms of personalities and ability to work together; however, the degree of collaboration and student leadership often depended on the quality of the questions students brought to class. At times, students were disappointed that they were expected to find answers on their own; teachers noted that tutors, too, sometimes found it difficult to resist answering a question directly and tended to move between the teacher-led model and student-led discussions. Faced with either an existing or anticipated lack of tutors, a few elective teachers deliberately encouraged student-led tutorials. However, with no tutor or teacher present, students could more easily wander off-topic.

While tutorials were not intended as a means for completing homework, how this was understood and carried out varied across sites: most teachers did not find it appropriate for students just to do their homework but thought they should be able to use homework content as a basis for tutorial discussion if the questions posed involved higher level thinking and formed the basis for appropriate student-led discussion.

BC AVID teachers commented on various ways that they believed tutorials helped students succeed in rigorous courses, such as students assisting one another with difficult material, providing them with the confidence that support would be there when they needed it, as well as engaging with difficult material several times and in different ways so that the material became clearer to them.

BC AVID Motivational Activities

AVID Essential 3 prescribes full implementation of the AVID program, which includes the AVID curriculum, tutorials, and a set of motivational activities intended to encourage AVID students to participate in post-secondary education and enhance their educational and cultural experience. The activities can be broadly categorized into team-building activities, presentations by guest speakers, and field trips. While all high school students will likely be exposed to some of each of these activities during their high school years, AVID motivational activities are intended to be much more frequent,

implemented more systematically, and have a more explicit focus on team building and success in post-secondary education.

The AVID Center recommends about 20 per cent of AVID class time be devoted to motivational activities. BC AVID classes at random assignment sites averaged between 17 per cent and 19 per cent during Grades 9–12.

Team-building Activities

Team-building activities occurred both within BC AVID classrooms and as part of field trips at all BC AVID schools. These took the form generally of a challenge that required students to work together in groups in order to reach a solution, sometimes involving competition. Team-building activities often served as an introduction to effective collaboration and inquiry among students. They also appear to have helped build social cohesion within the AVID class: teachers believe they helped students be more accepting of each other and improved their communication with one another.

Guest Speakers

While not specifically mandated by the AVID Implementation Guide, all BC AVID schools reported having had at least one presentation by a guest speaker for each cohort during Grade 9–12, although there were 11 occurrences of no presentation during a year among both cohorts of random assignment sites' classes. The most common topic among guest speakers was "career-related," including presentations on a career field such as medicine, engineering or the trades; another popular theme was post-secondary experience and admissions.

The mean duration of special presentations at random assignment sites was 66 minutes for Cohort 1 and 67 minutes for Cohort 2. The mean number of hours of special presentations at random assignment sites was 13.3 hours for Cohort 1 and rose to 18.0 hours for Cohort 2. The mean duration of presentations at case study sites was just under one hour (59 minutes), but the mean number of hours of presentations at case study sites overall was greater (20.1 hours).

Field Trips

The AVID Implementation Guide encourages field trips as a way of motivating students to work towards future goals of post-secondary education. All BC AVID sites reported field trips for their AVID elective classes during Grade 9–12, with the majority participating in at least one trip per year. Six random assignment sites reported no field trips during a year.³¹ BC AVID staff believed campus visits to colleges and universities to be especially valuable for students.

The mean duration of a field trip at random assignment sites for Cohort 1 was 6.4 hours and for Cohort 2 was 5.5 hours; the mean duration of a field trip at case study sites was greater (7.7 hours) which reflects the longer distances from those schools to post-secondary education institutions. The mean number of hours at random assignment sites was 51.1 hours (Cohort 1) and 55.7 hours (Cohort 2); the mean number of hours at case study sites was considerably greater (87.3 hours).

³¹ One of those sites reported no field trips during a Cohort 1 and a Cohort 2 year.

Organizational Skills

AVID students are required to learn organizational skills and to use agendas and a standardized binder system for containing notes and class materials (Swanson et al., 2004 pp.115–116). BC AVID staff believed that these organizational skills were an important element in student success. They reported doing binder checks with students beginning early in the implementation of the program. More than 90 per cent of all students and almost 94 per cent of the core Grade 9–12 group of BC AVID students agreed or strongly agreed that AVID helped them to organize their school materials.

In Grade 12, students at almost all sites organized their notes by subject and date as expected and there was evidence of assignments completed. However, binder checks did not appear to be as frequent at several sites in Grade 12 compared with earlier grades. This is likely due to binder organization being routine at this grade level and/or other priorities taking precedence.

Maintaining Rigour

AVID is designed to support students' enrolment in a rigorous curriculum that meets university entrance requirements (Essential 4). To meet basic AVID certification standards, all AVID students must be registered in courses that meet these entrance requirements and students must participate in the standardized testing that is an entrance requirement for university enrolment in the United States.

BC AVID staff struggled with how to best interpret this Essential. BC AVID considers a broader range of post-secondary education options as “successful” than would the AVID Center. The BC AVID definition of rigour includes four streams of post-secondary programs: university, community college, private technical or vocational institutes, and apprenticeship programs. The courses required to be completed to meet the entrance requirements of these programs varies considerably. Staff struggled to find a balance between encouraging students to take the most rigorous courses offered at their schools and meeting the career needs and abilities of their students.³²

AVID program material often recommends schools placing AVID students in Advanced Placement (AP) or honours courses. However, BC schools do not use AP courses as extensively as US schools do. Some staff questioned whether they should encourage students to take the more rigorous courses if they were not required for the student's chosen post-secondary education program. Other staff felt that many of the courses offered in the BC curriculum were rigorous at the same time as meeting entrance requirements for many types of post-secondary education.

BC AVID staff reported that they made considerable effort to ensure that AVID students “keep the door open” with respect to their post-secondary education options and encouraged their students to take challenging courses. This was supported by student response in the Grade 11 survey (reported in Dunn et al., 2010). Some staff used site team meetings to examine ways to assist students with difficult

³² BC AVID counsellors did not always attend AVID counsellor training at Summer Institutes due to the lack of applicability of much of the content to BC, nor was there any prescribed BC alternative. As a result, there was some variation on how BC counsellors interpreted rigour and counseled BC AVID students to prepare for post-secondary education.

coursework. At the same time, teachers could act as gatekeepers to keep some AVID students out of a rigorous course if they considered the course too difficult for the student.

Rigorous courses are available in BC schools including the smaller case study sites. The major considerations concerning the appropriate level of rigour were student post-secondary education goals and perceived student ability. Staff pointed out that all or most of their Grade 12 AVID students qualified for a post-secondary education program of their choice.

Mentoring BC AVID Students

Mentoring students is an important aspect of the AVID program. The objectives of mentoring include assisting students to perform better in school and to meet post-secondary education requirements. Most of the BC AVID mentoring was carried out by AVID teachers, often with assistance from an AVID counsellor. BC AVID educators frequently commented on the importance of the relationship between AVID student and AVID teacher in assisting students to perform better in school; the AVID teacher role in effect includes that of counsellor. There was some disagreement among BC AVID educators as to whether it is better for one AVID teacher to remain with a particular cohort of AVID students throughout high school, or whether a change of AVID teacher can provide benefits such as new positive energy.

BC AVID teachers helped students to navigate academic decision-making as well as personal life matters; they helped to resolve issues such as scheduling of classes and course choices. BC AVID educators indicated that over time their AVID students became more confident and well-spoken, improved their grades and study habits, tackled difficult academic subjects, responded well to tutor assistance and learned to work well with other students. A large majority (91 per cent) of the core Grade 9–12 students agreed or strongly agreed that their AVID teacher helped them to understand difficult material. Students' responses in the Grade 11 survey also indicated that they felt supported academically and personally.

BC AVID teachers indicated that the close relationships that developed among students played an important part in helping students perform well in school. They spoke of a sense of stability not necessarily found elsewhere in a high school setting, including a sense of family, nurturing, and bonding. In focus groups, students spoke about the friendships they had developed with other members of the AVID class and how comfortable it was to work with them.

Students' Future Plans

Most core Grade 9–12 students at random assignment sites appeared confident in making plans about their future and indicated that their future included post-secondary education. They agreed or strongly agreed that they knew enough about the different kinds of jobs that existed to make a choice about their future (84 per cent); they believed it was important to decide about a future career (82 per cent); and they believed they knew their own interests and abilities well enough to decide on a future career (88 per cent). During a focus group, one student indicated that he found the help received through field trips to universities and looking at different job possibilities particularly helpful:

“The field trips to the universities... really helped me decide... And then probably the biggest thing is when we looked into different jobs that we might want to do, or areas of interest, because... not really in any other classes do you really focus on what you want to do after high school.”

Almost all core Grade 9–12 random assignment sites’ program group members agreed or strongly agreed that they were smart enough to do well in post-secondary education (99 per cent) and most believed they needed to go to post-secondary education to achieve what they wanted in life (93 per cent). A majority of core Grade 9–12 random assignment sites’ program group members (61 per cent) indicated that a university degree was the highest level of education that they would like to get; a college certificate or diploma was the second most popular goal and random assignment site students were significantly more likely than case study students to choose this goal (22 per cent).

A majority (73 per cent) of the core Grade 9–12 students at random assignment sites indicated that nothing stood in their way in going as far in school as they would like to go; however, about one-fifth of students (19.6 per cent) indicated that a financial barrier stood in their way. The financial barrier might relate not only to insufficient funds available to the student through personal and/or family savings but also parental and/or student concerns surrounding borrowing money for educational purposes. Two BC AVID teachers indicated that, although they had discussed student loans as a means of financing post-secondary education, some of their students did not consider this method viable. Some AVID staff believed this could have been related to parental concerns:

“In talking to the kids — not just the one year but between the two years — I think in some cases it comes from the parents — ‘You don’t have the money and we don’t have the money to put you there’ — I think for some of the kids the idea of debt this early in their life scares them.”

“Half of our current cohort 2... parents have prepared well... it’s all being paid or a good portion of it being paid, so that’s not a stress on them. But the other half have parents that are wary of student loans for their students; they don’t want their son or daughter to incur some debt... [The parents] feel that... that’s going to be something that they’re going to have to incur themselves.”

A large majority of core Grade 9–12 random assignment students (93 per cent) indicated that they spent a lot of time thinking about what they would be doing in a year’s time and most indicated their plans would likely or very likely include post-secondary education (93 per cent).

Student Preparation for Post-secondary Education

BC AVID teacher comments mirrored student survey responses. Teachers indicated that the majority of their AVID 12 students had met the entrance requirements for a post-secondary education program of their choice. At the time of teacher interviews, most students had applied to a program at a local college or a four year program at a smaller university and many students had received a conditional acceptance. Students were considering a wide variety of post-secondary education programs such as: business, nursing, pre-engineering, art, trades, Canadian Armed Forces, culinary arts, health services, athletics, and oceanography.

Many staff believed that their AVID students were well-prepared for post-secondary education, often more prepared than other Grade 12 students: they pointed to their organizational skills, improved work habits, and familiarity with good study strategies. Students had received assistance with graduation portfolio requirements, career options, post-secondary education applications, and scholarship applications. Two AVID teachers commented:

“Even though they’re not maybe the most ideal kids, AVID-wise, I think both cohort 1 and 2 are on average more prepared for post-secondary than the typical [school] kid, because it’s been a focus, because it’s been talked about, because we’ve actually spent time looking into post-secondary or visiting post-secondary.”

“I believe that they are university-ready... looking at their writing strategies and their reading strategies that they’re using and just judging the way they’re acting as students, I believe they will be quite successful... in getting through university, not just getting into university. I think that these students have had to work for their education — and I think that’s what holds a lot of university students back. Nothing as far as education has really been given to them; they’ve had to work for everything, and that’s exactly what they’re going to need [to do] to be successful in university.”

While some staff commented on how difficult the transition to post-secondary education is in general for Grade 12 students, they believed that most AVID students were well prepared for the challenge. A few staff members indicated that they considered their Cohort 2 students better prepared for post-secondary education, usually due to the larger number of rigorous academic courses they had taken.

Annual Site Certification

The AVID Center requires schools to have sufficient resources for program implementation and certification, as well as a trained district director to oversee program development (Essential 10), including: staff training, tutor recruitment and training, student recruitment and selection, AVID curriculum, parent involvement, site visitations, and data collection. All BC AVID sites received financial resources from the Canada Millennium Scholarship Foundation through the BC Ministry of Education to pay for the training, deliver the program, and participate in the AVID certification process. AVID directors often noted that oversight of the AVID program was only one part (and often a small part) of their responsibilities and that the work required much more time than they had anticipated. Schools used project funding for training, field visits, and AVID curriculum and materials. Funding for AVID post-project was increasingly a major issue as schools approached the end of the research project timeline, in part because this coincided with constraints on other funding and the high cost of travelling to US locations for AVID training.

BC AVID staff participated in Summer Institute training in August 2004 in preparation for initial recruitment and selection of AVID students and then in August 2005 prior to the start of the first AVID classes. Other staff attended subsequent Summer Institute training. Staff trained in a variety of areas including AVID elective teacher, AVID administration, AVID coordination, AVID tutorology and subject area training such as science and math. Additional “Path” training using AVID instructional strategies was offered at BC locations between 2006 and 2009.

The AVID Center conducts an annual certification process to recognize the implementation level of the AVID program that sites have achieved. AVID Essential 9 requires schools to provide program implementation and student progress data to be monitored through the AVID Data System to inform the AVID certification process. Sites must participate in this process in order to use the AVID curriculum, trade name and logo. It includes the Initial Self-Study (ISS) and the Certification Self-Study (CSS) completed in the fall and spring respectively. The process is overseen by the district director and involves the AVID coordinator and site team at the school level. The process is intended to measure each site's conformity with the AVID model and next steps for implementation. The four levels of certification are: affiliate (partial implementation), certified, certified with distinction, and demonstration site (the highest level for those showing exemplary AVID implementation). Certification allows the AVID Center to have access to a wide array of data to gauge trends in implementation. However, there are limitations to the use of this data as the outcomes rely on the judgments of individual site team members and district directors regarding results achieved. It was difficult to draw conclusions from certification about the experience of BC AVID participants: some sites were late submitting forms; data on the first year of implementation was not validated by the AVID Center (though it was an important year for the project cohorts); the assignment of outcomes was subjective; and certification standards apply to school-wide implementation and so do not necessarily reflect the experiences of project participants.

More directly appropriate measures of the level of program implementation achieved by BC AVID sites implementing the program *for research participants in Cohorts 1 and 2* are included in Chapter 4.

Conclusion

This chapter has examined the implementation of BC AVID including recruitment of staff and students, use of the WIC-R strategies, the tutorial experience, motivational activities and the mentoring of AVID students. The implementation of BC AVID was compared to expectations set by the AVID Center using data from interviews with BC AVID staff, observations by SRDC researchers, administrative data, focus groups with students, and responses of Grade 11 and Grade 12 survey respondents.

Overall, BC AVID staff were challenged to meet the demands of the program. Challenges arose in part due to the differences between the BC school system and the US system from which the program originated but also due to the varying interests and goals of BC AVID students and staff as well as the complexities of the program. While both BC AVID students and staff volunteered to participate (as required), they also left the program in high numbers. By Grade 12, the attrition of students had reached almost two-thirds (64 per cent); by Grade 11, two-thirds of AVID classes had experienced AVID teacher turnover while an additional one-third of AVID groups in Grade 12 experienced similar turnover. Site team involvement also diminished over time: by Grade 12, about half of BC AVID site teams were still actively involved while half were either slightly active or inactive.

While BC staff worked diligently to implement the program, the BC school timetable made it difficult for BC AVID classes to meet as regularly as recommended. The consequences were particularly problematic for the implementation of tutorials. Overall, BC AVID sites delivered a higher share of curriculum activities and a lower share of tutorial activities than expected.

A distinct difference between BC AVID and the program promoted by the AVID Center was the extent of the post-secondary education focus. While AVID Center material presents four-year college as the primary post-secondary education goal, BC AVID considers four streams of post-secondary education experience ‘successful’ — including university, college, private technical or professional institute, and apprenticeship programs. The prerequisites for these programs vary greatly and this affected how the AVID Essential of ‘rigour’ was interpreted for BC students. Prior to and at the Grade 12 level, BC staff sought to find a balance between what they considered an appropriate level of rigour for the student’s post-secondary education goals alongside their perception of the student’s ability.

BC staff spoke very highly of the strengths of the AVID program to provide long-term mentorship for students and a ‘family-like’ learning environment rarely found in a high school setting; they believed this could help students to perform well academically. In focus group discussions, BC AVID core group students also indicated how important the bond with other students and AVID teacher was for them. What emerged as most important in keeping these students in the program to Grade 12, however, was the opportunity to plan for their future and to prepare for post-secondary education which they indicated was not available to them elsewhere in their high school experience.

Chapter 4: Did the Project Give BC AVID a Fair Test?

Assessing Program Delivery to Research Participants

Introduction

With any program delivered across many schools on a large scale, there will be variations in how the program is implemented. Some implementations will adhere more closely to the program model and some will depart from it for a variety of reasons. The departures might include adaptations made necessary by the specifics of the education system or local school conditions (including student characteristics) or more pragmatic adjustments due to unexpected turnover of staff or shortage of resources. More subtly, implementation may vary by the amount of time elapsed since educators were trained in specific program components or due to interactions with other programs at the school. These departures may be modest and have no substantive consequences for the ability of the program to bring about its intended effects, or they may cause deviations from or omissions of critical elements that mean the program could not be expected to change student behaviour as intended.

Since the objective of a demonstration project like the BC AVID Pilot Project is to determine the effectiveness of introducing AVID to schools in BC, it is important to establish whether the program as delivered met expectations for what should constitute delivery of AVID in the province, sufficient for the program to be expected to achieve its impacts. Although the project schools were provided with substantial resources and AVID training, the previous chapter reported that they still found elements of the program difficult to put in place. If AVID components are found missing sufficiently frequently in the experiences of the program group, it may not be appropriate to consider the resulting changes in their behaviour relative to the control group to be due to AVID, rather they would be attributable to some alternate program made up of different components (those actually delivered). This chapter presents the results of data collection and analysis on whether the program as delivered in the project's 18 sites gave the AVID program a "fair" test.

Chapter Summary

- **There has been no formal definition of what precisely should comprise AVID programming in BC** prior to the assessment reported in this chapter. The project has invested considerable effort and resources in training, developing and guiding school site teams to deliver new programming as part of the project. These many training resources — and especially the advice of the AVID Project Leader — have been used to define the BC AVID program intended to be delivered.
- **AVID Certification could not be used for the fair test assessment for several reasons.** It nonetheless provided a very useful framework for considering the requirements of the program and it guided the development of the BC AVID Criteria.
- **SRDC established criteria for a "minimum necessary" level of delivery anticipated for each project AVID elective class over each year of the project following discussions with the Project Leader.** Use of these criteria permits SRDC researchers to determine whether or not what was delivered to each class over each year met the minimum criteria necessary for the "offer of four

years in the BC AVID elective class” to be considered a genuine one, satisfying the conditions for the fair test.

- **Only one school delivered programming that totally met these fidelity criteria and it did so for one year only.** Given the four years from Grade 9 to Grade 12, delivery meeting the 11 Essentials would have been expected 44 times. For each enrolling class, the range of “fidelity” experienced was between a “low” of programming meeting criteria on 27 of these 44 opportunities to meet an essential and a “high” of 37 out of 44.
- **No class cohort had consistently high fidelity, nor consistently low.** Over the four years, experiences varied for each class cohort by year. No clear pattern explains the experience of program fidelity over the four years.
- **The requirement schools found most difficult to meet overall and in each cohort year concerned the provision of AVID tutorials.** Schools were consistently unable to offer a sufficient number of tutorials that met BC AVID requirements. Schools also had great difficulty delivering full implementation of the program, largely due to the structure of the BC school timetable which indirectly contributed to insufficient scheduled tutorial time and insufficient student numbers in class for student tutorials.
- **Schools were highly successful in meeting the criteria for student selection, student and teacher voluntary participation, AVID staff training, student collaboration, and student completion of coursework and provincial examinations required for BC graduation.** In addition, schools were moderately successful in meeting the criteria for delivery of a rigorous program and a strong focus on the writing, inquiry and reading components of the WIC-R curriculum and strategies. While schools were largely successful maintaining site team involvement during Grades 9 and 10, they experienced difficulty with this requirement during Grades 11 and 12.
- **The school delivery has not given BC AVID a “fair” test.** There was a marked change in educational experience — or “treatment differential” — produced for program group members by the BC delivery. This change in educational experience did typically resemble BC AVID, except for its insufficiently frequent provision of AVID-style tutorials. It is not possible to know how closely what BC schools delivered matches what other programs that carry the label “AVID” deliver elsewhere. AVID Center certified BC programming as meeting AVID requirements at the school level for 16 of the 18 school sites (28 of 32 class cohorts) in 2008–09.

Rationale for a Fair Test

A key objective of the BC AVID Pilot Project is “determining whether the program intervention has had a fair test in a real-world setting.” This objective is part of the research plan because interpreting impacts on education outcomes requires knowledge of to what extent the treatment received by the program group represented the intended program intervention implied by the research design.

“The BC AVID Pilot Project is especially focused on the impact of offering the AVID Elective to students who are identified as middle-achieving in Grade 8. The program group comprises students selected to receive the program intervention — i.e. being offered a place in the class and receiving accompanying support to engage in rigorous and advanced courses offered within the high school.” (Dunn et al., 2008, p. 4)

The program intervention is “offering a place in a four-year AVID Elective class”. The primary research question answered in the following chapter is what is the effect of this offer on the subsequent achievement of the project’s target group: “middle-achieving” Grade 8 students in BC high schools. The program group is intended to represent a random sample of this target group.³³ SRDC is very confident that the offer itself was made to the program group. Each student who volunteered for the project was notified of the outcome of their application. SRDC provided a list to each participating school of all those assigned to the program group and staff were provided with procedures for notifying students. In addition, SRDC sent letters to every program group member to notify them of their status.

Given that the offer was made clearly, the implementation fair test question becomes one of whether the offer made was one of four years of AVID (interpreted as “BC AVID” programming; see Text Box 4.1) or, alternatively, an offer of something else? This question takes at least four years to answer for each student, as the programming delivered in the name of AVID has to be assessed over time to determine how well it adheres to the intent for programming carrying the BC AVID label. This assessment, reported in this chapter, is critical to the evaluation because without it there is an open question about what treatment was tested and whether it is fair to consider the BC AVID Pilot Project to have tested “AVID.” In short, this chapter determines whether the program had a “fair test.”

³³ “Middle-achieving” is used here as shorthand to describe a complex range of selection criteria used to identify the target group described in Chapters 1 and 3. The students amenable to the effects of a program intervention such as the AVID-elective class were identified as those with several characteristics which carry different weight in the selection decision (see Dunn et al., 2008, p. 38). The target group of “AVID suitable” Grade 8 students thus identified is the group likely to need the intervention and upon whom the intervention is anticipated to have its effect. The research design was focused on determining the impact of the school establishing and running an AVID-Elective class on the post-secondary outcomes of two cohorts of students identified as AVID suitable in Grade 8.

Box 4.1 AVID or BC AVID?

The project was concerned with developing evaluation criteria for the BC AVID Pilot Project. It was not establishing criteria for AVID in any other environment, so for simplicity, SRDC researchers have used the term BC AVID to describe the program that BC school sites were expected to deliver. The use of the term BC AVID is not meant to imply that there is something particularly unique about the AVID program expectations in the province. “Adaptations” to local course availability, to schools’ timetables and PSE enrolment requirements (including the nature of the standardized tests to sit in order to meet post-secondary entry requirements) would be expected in any new jurisdiction implementing AVID, whether this was Australia or Wyoming, and it is doubtful that each adaptation of the program should be differentiated by a different name. Most educators in BC’s AVID schools, if asked, would say they were implementing “AVID” in BC. As the previous chapter has documented, adaptations were nonetheless intentionally made in the project to accommodate AVID in the BC education system. “BC AVID” is a term of convenience invented by the researchers to describe this intended version of the program.

The version of AVID had some specific features of interest. For example, project schools were asked to deliver a *four-year program* from Grade 9 through Grade 12. They were asked to recruit and select participants using a *standardized set of procedures* and to *handle class departures and additions in specific ways* that respected the initial assessment of students’ AVID eligibility and the selected students’ initial consent to participate.

Beyond the documented requirements, the version of AVID also lacked some specificity. This lack of specificity may be faced in some other jurisdictions but probably not all. For example, teachers experienced difficulty interpreting which were *the most appropriate rigorous courses* for AVID students. In some US states, the appropriate courses can be readily identified as Advanced Placement courses developed by The College Board.

Taken together, the version of AVID tested in the project was a specific subset of all possible implementations (which include Grade 4 AVID or Post-secondary AVID, for example). For convenience, the researchers label this subset “BC AVID.”

In addition to the explicit project requirements, the sites have made further adaptations intentionally and unintentionally, as documented in the previous chapter. This is why the fair test instrument was developed to determine whether these requirements and adaptations have moved the program delivery outside acceptable limits for it to still carry the BC AVID label.

Defining the Intent for AVID Delivery in BC

Before the assessment reported in this chapter, there has been no formal definition of what precisely should comprise AVID programming in BC. Nonetheless, the project has involved considerable investment in effort and resources in training, developing and guiding school site teams in the province to deliver new programming as part of the project. It is logical to look to these training resources to define the program intended to be delivered. The sources that have influenced site team members’ understanding of what they should deliver to their AVID students have included:

- **Attendance at AVID Summer Institute.** This has been the most widespread influence since BC sites were given resources to send teams at least twice to the Summer Institute and all site teams have attended. Most of this activity took place in 2004 and 2005, so it is a project assumption that the educators primarily based their program delivery (to the two research cohorts starting AVID in Grade 9 in September 2005 and in September 2006) on the instruction and documentation made available at Summer Institutes in 2004 and 2005.
- **The AVID curriculum library and implementation guides; other AVID literature.** These documents were also made available to all schools and there is evidence of teachers consulting and using the guides.
- **Training in BC AVID project recruitment.** The project ran two mandatory training events in 2004 and 2005 on its standardized approach to recruiting and selecting AVID eligible students. Sections of the operation manual were provided. Combined with site visits and meetings with SRDC at the time of recruitment, there was strong adherence to the project's planned procedures.
- **Project-organized annual conferences and regional meetings.** The project ran an annual provincial conference 2004–2009 and organized several regional meetings with voluntary attendance. Nearly all sites attended and participated in activities intended to update teams on developments in the program and in the province, including sessions devoted to the sharing of experiences between sites and lesson plans. Regional meetings also allowed local site teams to network once or twice a year. These project-initiated events were considered necessary to prevent “isolation” of sites. With the BC sites distributed across a physically large province, the local AVID school networks that new sites might typically draw on in an urbanized state like California would not exist for most of the BC project schools, and the project-stimulated networking was important to overcome some of this isolation.
- **Path training.** There were several AVID Path training events in the province during the project, which helped to bring non-project school educators and project school educators from AVID districts up to speed on the basics of the program. Path training is typically two days — considerably shorter than the week-long Summer Institute — with the goal of “deepening” awareness and use of AVID curriculum in schools. New site team members might attend such Path training as a preliminary introduction before attending Summer Institute.
- **AVID Center site certification requirements.** Sites participated annually in the AVID Center's certification process. It is very likely that the indicators in the certification instrument provided guidance to site teams as to the features of the program they should emphasize in delivery.
- **The BC AVID Support and Feedback process.** Sites participated twice annually from 2007 onwards in the pilot project's support and feedback process. It is very likely that the indicators in the Project Leader's checklist and his feedback on progress and recommendations for meeting shortfalls in delivery also provided guidance to the program sites' delivery.
- **The research requirements issued at the project outset.** These requirements, to which sites were contractually committed, included a delivery section which stated: “Schools who agree to take part in the AVID Pilot are undertaking the following: to deliver the AVID program conforming to the AVID ‘essentials’ to each recruited cohort of students through Grades 9, 10, 11 and 12.”

- **The BC AVID Operations Manual.** This document was developed by the steering committee as a resource for sites in BC. It included procedures for several of the additional features imposed by the pilot project — mainly standardized recruitment and selection and procedures for handling students' entry into and exit from the class — made necessary because the classes were subject to research observation and for data collection. It also included a chapter on managing tutorials and another on the program delivery. Both these 'program' chapters (delivered in 2006, after program implementation began) drew heavily on existing AVID Center material. For example, the program delivery chapter began "The BC AVID Pilot Project aims to implement the AVID program as Mary Catherine Swanson and her colleagues in San Diego developed it...." However, it mentioned two additional adaptations likely to be necessary in BC. The first was on the definition of post-secondary institutions.³⁴ The second was integration of AVID with a course provincially-required for graduation called Planning 10, necessary due to the heavy overlap between the two courses' curricula. There was a widespread concern that if the two courses were not combined, most AVID students might drop AVID in Grades 10 or 11 when most schools required Planning 10 to be taken. The operations manual was supplied to sites, in instalments as sections were completed between 2004 and 2006. However, in practice it was most influential only at the project start-up. At that time, it included only the added research procedures. Its existence would have had only a weak influence on classroom activities relative to other sources. In interviews, teachers rarely referred to it as one of their program resources.
- **Formal and informal discussions between educators.** Discussions between educators are potentially very important influences on school practices. These could occur between and within AVID sites, and between sites and the Project Leader. Several schools held informational and professional development meetings that could include various aspects of the program. The frequency and content of these communications would be likely to vary a great deal between sites, and would be expected for virtually all courses, not just AVID.

The assumption for the research project design with respect to program intent was thus that educators on site teams took the lessons learned from the above ten sources and applied them to the delivery of AVID to students in their BC high schools. Each source provides additional information with different emphases. None provided contradictory information. As is common in educational practice in North America and elsewhere, teachers were expected to exercise some professional judgement and discretion about how best to use what they learned to fulfil their AVID roles. In interviews, teachers reported the most influential sources on AVID delivery to have been AVID Center products and normal teaching practice. There is thus no *a priori* reason to expect AVID implementation to be influenced by inputs in BC that differed dramatically from inputs common in other jurisdictions. In the project context, of course, the range of sources with respect to program intent may have been greater than normally occurs with AVID implementation. Also, the level of enthusiasm collectively among project

³⁴ The chapter contained two sentences about the definition of post-secondary education: "British Columbia has one of the most integrated public post-secondary education systems in Canada, with elaborate credit transfer arrangements that allow students to move easily from one institution to another. As a result, it seems more appropriate for the BC AVID Pilot Project to emphasize PSE institutions rather than four-year colleges, as is usually the norm in documents produced by the AVID Center in San Diego."

partners to adhere to project expectations may also have been greater. Access to the above sources was supported by project infrastructure and financially as well as being promoted in project communications.

Making Adaptations Within Boundaries

At the project outset, it was very clear that some adaptation of the program as presented in some sources (for example, program resources focused on US post-secondary application processes and funding sources, or on California high school schedules and standardized tests) would be necessary for jurisdictions where these features did not apply. It was also clear that such adaptation would need to take place within some broadly defined framework of “boundaries” for the project and program to be a success. For example, sites were contractually obligated to adhere to the AVID Essentials; their performance was supported and monitored with advice and feedback via twice annual visits from the Project Leader using a “Support and Feedback” checklist based on the Essentials; sites undertook self-certification each year and had the results endorsed by their district director and AVID Center.

Thus, the “intent” for BC AVID delivery was that it would be the product of the inputs (the many sources supplying understanding of what is expected in program delivery) and the framework (adaptations following teachers’ individual professional judgements within boundaries set on such adaptations by AVID Center and the project) described above. The inputs and framework were either acknowledged or established by the BC AVID Pilot Project steering committee and thus implicitly supported by it. The “intent” for what students should receive is the expected product of the inputs and framework: adaptations within boundaries.

But what should comprise this expected product? A range of possible delivery could be expected given the various inputs and interpretations of boundaries. The range of what actually has been delivered is documented in earlier research reports (Dunn et al., 2008; Dunn et al., 2010) and the preceding chapter, but to determine whether the actual delivery comprises BC AVID requires the setting of some minimum thresholds for what sites could be *expected* to deliver.

Following discussions with the Project Leader in early 2010, SRDC established criteria for a “minimum necessary” level of delivery anticipated for each project AVID elective class over each year of the project. Within the constraints of available data, use of these criteria permits SRDC researchers to determine whether or not what was delivered to each class over each year met the minimum criteria necessary for the “offer of four years in the BC AVID elective class” to be considered a genuine one, satisfying the conditions for the fair test.

It is important to recognize that the choice of thresholds of minimum criteria is subjective, based on assessments of what school teams should have known were the minimum requirements for their program to carry the BC AVID label. These criteria will be applied objectively to answer the questions consistently for each class, each site and each year.

The fundamental requirement underlying the districts’ contracts and other sources of program information is respect for the AVID Essentials, so these form the basis for the BC AVID criteria. Because the focus of the project is on the impact of offering AVID on students, the focus of the criteria is on the student experience. The criteria emphasize the program content that should result if the Essentials that

most influence the student experience are in place. Fundamentally this content comprises the curricular, tutorial and motivation components of the AVID curriculum, delivered by an AVID-trained teacher with support from members of the site team. BC AVID criteria focus on ensuring this content is in place. The criteria are nonetheless based on the belief that the program experience comprises many interconnected parts and each part must be present frequently over time for an effective program experience to be delivered consistently to students.

While AVID Certification cannot be used for the fair test assessment (see Text Box 4.2), it provides a very useful framework for considering the requirements of the program and guided the development of the BC AVID Criteria.

Box 4.2 Why Not Use AVID Center Certification to Determine the Fair Test?

AVID Center certifies each site from year two of its implementation onwards based on the school district's submission of a form reporting progress on several indicators of fidelity to the program model. Sites can be accepted as "non-certified," "affiliate" (both with one or more Essentials rated as "not AVID") or "certified" for each subsequent year.

The AVID Center certification is not used in the fair test because it serves a different purpose. The Center seeks to certify the entire school on its adoption of AVID programming requirements, many of which are concerned with the ongoing sustainability of the program. The fair test is concerned narrowly with the experiences of *at most* two cohorts of students (the research participants) as they made their way through each grade year of AVID at 21 BC schools between 2005 and 2010. The fair test asks: "Did these students receive BC AVID?" AVID certification asks: "Is the school doing enough to implement and sustain the program?" It is possible for one cohort of class members to receive adequate programming when another at the same school does not. Overall the school might not meet AVID certification standards, while some students within it (who happen to be research participants) do. The reverse might also apply.

There are a few other challenges with using certification results:

- Certification is not independently audited, so one site's opinion of their progress may differ from another's. It was important for the project that students' program experiences were assessed equivalently across all schools.
- Certification requirements change from calendar year to calendar year. What constitutes a certified program is thus changing over time. Although changes are typically minor, the changing criteria could in theory allow Cohort 1's program experience to be certified as AVID when the same program experienced by Cohort 2 would not be certified. The project is seeking to draw conclusions about an intended program model across two cohorts, so the fair test looks for the same criteria in every Grade year (9, 10, 11 and 12) and academic year.
- The certification document includes requirements which may not be relevant to a students' individual experience or to the BC education context — e.g., the certification indicators that record "AVID is a component of the school improvement plan" and "Funding for AVID is defined in school and/or district budgets" have no direct bearing on a students' classroom experience. What matters to students in fair test terms is that a budget has purchased the staff training, tutors and other requirements that are already captured in different indicators which reflect on their classroom experience.

- AVID certification considers an Essential to be in place even if one indicator for that Essential is “not AVID” provided there is a plan to bring that indicator to “AVID” levels by the following school year. This was not acceptable for the project since it might allow the research cohort to miss out for a whole year on a key program feature, such as AVID-trained tutors. While there might be room for compensation across *some* indicators (e.g., a program falling short on ‘collaborating to solve problems each week’ might meet minimum requirements provided ‘collaborating on projects’ were still occurring during the year), in general the project sought **absolute** minimum thresholds for the program as a whole. If **any** of these thresholds were missed through the year of classes, the program experience would not be called BC AVID for that year because the students would be missing out on something that was “essential” to “AVID.”
- AVID certification indicators include *outcomes*. For example, one indicator for Essential 9 is “At least 70 per cent of AVID high school students, who have taken a state mandated high school exit exam, scored proficient and/or above.” The project’s implementation research needs to assess whether the program has been delivered to students independently of outcomes (otherwise the evaluation is tautological: one cannot evaluate the impact of a program on outcomes if the program’s existence is defined by the presence of those outcomes), so achievement on outcomes is excluded from criteria for the fair test.

AVID certification indicators are not very precisely defined in some cases. For example, one indicator for Essential 3 is “AVID class instruction provides a balance between use of AVID curriculum, tutorials, and motivational team building activities” without specifying what the minimum criteria for “a balance” would be. One indicator for Essential 9 is “Tutors have received at least 16 hours of tutor training in AVID methodologies” but specifies neither the proportion (from 0 to 100 per cent) of the tutors that meet this training requirement nor the proportion of AVID classes they need to be present in. The BC AVID Criteria are more explicitly linked to objective measurement and so minimum thresholds are specified.

Assessing Delivery for BC AVID

SRDC developed criteria based on the AVID Essentials to assess whether schools met requirements for delivery of the BC AVID program for each year (Grade 9–12). The criteria were defined as those program elements sufficiently necessary that if any were absent for a class in a given grade year, the program experience for that year would be judged “not BC AVID.” The criteria are listed in Table 4.1, ordered by Essential and described in more detail in Appendix 5. An assessment of whether schools met the criteria overall for BC AVID delivery follows.

Table 4.1 Criteria for Assessing Whether BC AVID Received a Fair Test

Requirement to be met for class cohort in each school year by fair test indicator group (AVID Essential)		% of annual project class cohorts meeting requirement
SELECTION: AVID student selection must focus on students in the middle (with a GPA of 2.0 to 3.5 GPA as one indicator) who have untapped academic potential and would benefit from AVID support to improve their achievement and post-secondary preparation. [Essential 1]		
Students receive BC AVID only if:	Students selected according to project operations manual procedures	100%
PARTICIPATION: AVID program participants, both students and staff, must choose to participate. [Essential 2]		
Students receive BC AVID in a given year only if:	AVID students participate voluntarily, sign contracts with the school	99%
	AVID elective teachers participate voluntarily	97%
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. [Essential 3]		
Students receive BC AVID in a given year only if:	AVID elective class scheduled within the regular academic school day	93%
	AVID elective class has sufficient students for multi-student course-based tutorials to run	34%
	AVID elective comprises at least 25% AVID curriculum, at least 25% tutorials, and at least 10% motivational activities	31%
RIGOUR: AVID students must become enrolled in a rigorous course of study that will enable them to meet requirements for university enrolment. [Essential 4]		
Students receive BC AVID only if:	At least 90% of students are enrolled in a set of courses that meet requirements for enrolment at a BC university.	82%
WRITING: A strong, relevant writing curriculum must provide the basis for instruction in the AVID elective class. [Essential 5]		
Students receive BC AVID in a given year only if four or more of the following apply to their regular AVID class time:	Students receive instruction in writing-to-learn strategies and/or use AVID writing curriculum at least twice every two weeks	90%
	Students received instruction in the writing process and/or participated in timed writing	88%
	Students produce or use reflections (e.g. AVID learning logs) at least twice every two weeks and are graded on them	88%
	Students produce or use Cornell Notes and/or textbook notes at least twice every two weeks; receive training in their use and are graded on them	80%
	Students receive instruction in reading-to-learn strategies including connecting to prior knowledge and/or understanding text structure at least twice every two weeks	66%
INQUIRY: Inquiry must be used as a basis for instruction in the AVID classroom. [Essential 6]		
Students receive BC AVID in a given year only if three or more of the following apply to their regular AVID class time:	Students take part in philosophical chairs discussions or Socratic seminars	51%
	Students develop Costa's Level 1, 2 and 3 questions (or Bloom's levels 1-6) for their notes and tutorial group discussions	86%
	Students participate in the AVID tutorial process	84%
	Students include questions in their CN and/or on their TRFs and are graded at least monthly for inclusion of them	81%

Table 4.1 Criteria for Assessing Whether BC AVID Received a Fair Test

Requirement to be met for class cohort in each school year by fair test indicator group (AVID Essential)		% of annual project class cohorts meeting requirement
COLLABORATION: Collaboration must be used as a basis for instruction in the AVID classroom. [Essential 7]		
Students receive BC AVID in a given year only if two or more of the following apply to their regular AVID class time:	Students participate in collaborative study groups	98%
	Students collaborate to solve problems at least twice every two weeks	97%
	Students collaborate on projects such as research papers, presentations, and/or community service	74%
TUTORIALS: A sufficient number of trained tutors must be available in the AVID class to facilitate student access to a rigorous curriculum. [Essential 8]		
Students receive BC AVID in a given year only if the following apply to their regular AVID class time:	Students use tutorial request forms	83%
	Students take part in the AVID tutorial process at least twice every two weeks	34%
	At least half of tutors in tutorials held at least twice every two weeks (a) have received at least initial tutor training (or a plan is in place to complete training) and (b) demonstrate AVID methodologies with students	8%
	The student/tutor ratio in the AVID elective class is higher than 7:1 in at least three tutorials per month, or equivalent	3%
DATA: AVID program implementation and student progress must be monitored through AVID Center Data System, and results must be analyzed to ensure success. [Essential 9]		
Students receive BC AVID only if:	At least 70% of students in AVID class complete coursework and provincial exams for graduation in examinable courses	100%
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. Commitment to ongoing participation in AVID staff development is also required. [Essential 10]		
Students receive BC AVID in a given year only if:	At least another six members of the site team besides the elective teacher must have attended AVID Summer Institute or Path training at least once	99%
	AVID elective teacher has attended AVID Summer Institute at least once; any substitution with non-AVID trained teachers must be unplanned and rectified such that an AVID-trained teacher is in place for the majority of every year	98%
SCHOOL SITE TEAM: An active interdisciplinary site team must collaborate on issues of student access to, and success in, rigorous post-secondary preparation courses. [Essential 11]		
Students receive BC AVID in a given year only if:	The AVID site team has developed and written a site plan	100%
	At least core members of AVID site team meet quarterly or more frequently; they collaborate on planning, logistical issues and student access to rigorous curriculum and advanced courses	75%

BC schools programming to each project class cohort varied. When all four years of the program offer are considered together, the 11 Essentials would have been expected in each of the four years from grade 9 to Grade 12. In fact, BC schools programming met BC AVID criteria for between 27 and 37 of these 44 Essentials for each enrolling class (as shown in Figure 4.1). At one school, one class cohort received programming that met BC AVID criteria with respect to only 5 of the 11 Essentials. At another school, one cohort in one year received programming that met BC AVID Criteria for 11 of 11 Essentials.³⁵

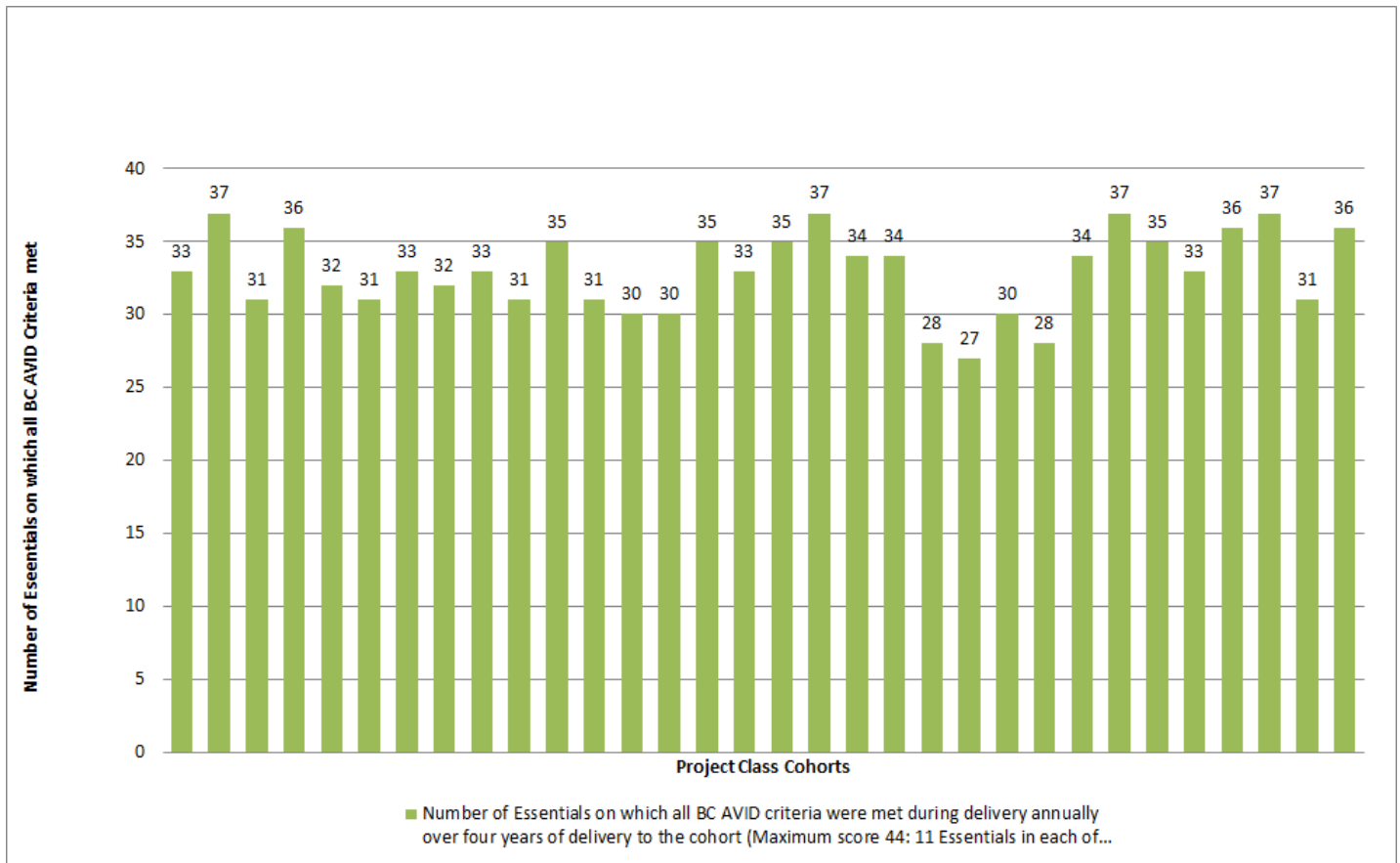
No class cohort had consistently high fidelity nor consistently low, over the four years: experiences varied for each class cohort by year. And within schools with two or three class cohorts, there was little consistency between cohorts: experiences varied by class cohort and by year. When the 32 Grade 9 class cohorts that were supposed to be offered BC AVID are ranked by the number of essentials that were delivered to them with fidelity over the four years to Grade 12, no clear pattern emerges. Of the top ten, there are five class cohorts from Cohort 1 and five from cohort 2. Just one of the four case study sites is in the top ten, but just one case study site is in the bottom ten also. At one school, one class cohort ranked number 1 in terms of fidelity score and another class cohort at number 12. Another school had cohorts ranked at 2 and 24. By these expectations, no class cohort in any site consistently received an offer of BC AVID for the duration of the program. The experience of case study sites was varied also and not distinctively different from random assignment sites.

As seen in Table 4.1, the requirement schools found most difficult to meet overall and in each cohort year concerned the provision of AVID tutorials (Essential 8): schools were consistently unable to offer a sufficient number of tutorials that met BC AVID requirements.³⁶ Schools were expected to provide tutorials in which trained tutors would be available to assist students with the rigorous curriculum that was anticipated necessary to meet post-secondary entrance requirements. Schools also had great difficulty with delivering full implementation of the program (Essential 3), largely due to the structure of the BC school timetable which indirectly contributed to insufficient scheduled tutorial time and (in later years) insufficient student numbers in class for student tutorials featuring support for multiple courses to function.

³⁵ In each case, this occurred during a Grade 12 cohort year.

³⁶ Schools failed to meet these criteria even though the minimum number of tutorials that were required fully to meet BC AVID requirements (3 per month — or the equivalent for incomplete months — totalling 17 tutorials for the school year) was considerably lower than the number required to meet AVID Center's certification requirement (requiring tutorials held twice a week for an annual total closer to 80). [AVID Certification Report and Self-Study Continuum, 2005–2006, AVID Center, 2005, p. 17]

Figure 4.1 BC AVID Fair Test Scores per Class Cohort G9–G12



At the same time, schools were highly successful in meeting the criteria for student selection, student and teacher voluntary participation, AVID staff training, student collaboration, and student completion of coursework and provincial examinations required for BC graduation. In addition, schools were moderately successful in meeting the criteria for delivery of a rigorous program and a strong focus on the writing, inquiry and reading components of the WIC-R curriculum and strategies. While schools were largely successful maintaining site team involvement during Grades 9 and 10, they experienced difficulty with this requirement during Grades 11 and 12 (there was a sharp decline in meeting Essential 11 criteria from 88 per cent of class cohorts at the Grade 9 level to 63 per cent at the Grade 12 level).

What Do We Know About Program Fidelity Elsewhere?

The most comprehensive data collection on AVID schools is that undertaken through the AVID Center's certification process discussed earlier in this chapter. These data (covering many years from 2000 onwards) are available online from the AVID Center in a variety of report formats. They have some limitations for the purposes of measuring fidelity of programming as experienced by each student, but they do represent the AVID implementation data that have received the most analysis.

An example of the utility of such data is the analysis presented in Johnston et al. (2010) which focused on certification data from 2008–09 which also happened to be the last year of implementation of BC AVID across all project sites.³⁷ For that year, 1,367 valid certification submissions were received from high schools implementing AVID worldwide (but mostly from the United States). To be accepted in the Johnston et al. study, implementation had to have been ongoing for two or more years and the 2008–09 submission had to have had district or regional AVID director and AVID Center approval. Of these 1,367 high school submissions:

- Four per cent (n=56) achieved “AVID Demonstration School” status indicating the strongest level of adherence to the certification criteria;
- Five in every six (83 per cent, n=1,137) were “AVID Certified” high schools, meeting certification requirements on all 11 Essentials; and
- An additional 13 per cent (n=174) were either considered “AVID affiliated” sites (because they had previously achieved certification but had one of more of the AVID Essentials rated as “not AVID”) or were “AVID non-certified” (because the school had yet to be recognized as implementing all 11 AVID Essentials sufficiently to meet AVID certification requirements).

Note therefore that 87 per cent of schools implementing AVID and submitting certification forms for 2008–09 met or surpassed AVID certification criteria.³⁸ Similarly BC AVID schools all submitted certification forms in 2008–09 and looked very similar, with 16 of 18 sites (89 per cent, representing 28 of 32 class cohorts) meeting AVID certification criteria.

In their analysis, Johnston et al. (2010) grouped affiliated and non-certified together as “Non-AVID high schools.” They found significant differences between the three fidelity groups above in the average percentage of AVID *seniors* completing college entrance requirements, in the average percentage of AVID *seniors* taking at least one Advanced Placement (AP) or International Baccalaureate (IB) course, in the average percentage of AVID *seniors* taking at least one AP/IB exam, in the average percentage of AVID *seniors* who took either the SAT or ACT exam, in the average percentage of AVID *seniors* completing the Free Application for Federal Student Aid, in the average percentage of AVID *seniors* applying to a four-year college or university, and in the average percentage of AVID *seniors* who applied to a four-year college or university and were accepted, in the average percentage of AVID *seniors* who planned to attend the four-year college or university to which they were accepted. In all cases, the demonstration schools seniors were more likely to achieve the outcome than the seniors at certified and non-AVID schools, and the seniors at certified schools were usually found more likely to achieve the outcome than the seniors at non-AVID schools.

The same analysis cannot be undertaken using certification outcomes for BC sites because nearly all schools have the same status. Only two would be considered non-AVID (in 2008–09) under Johnston et al. criteria. Incidentally, the four class cohorts at these schools did rank relatively low on the project’s fair test also (at ranks 10, 23, 29 and 31), although it must be noted that eight of the ten lowest-fidelity

³⁷ Note some BC sites with a second project cohort also delivered AVID to project participants in 2009–2010.

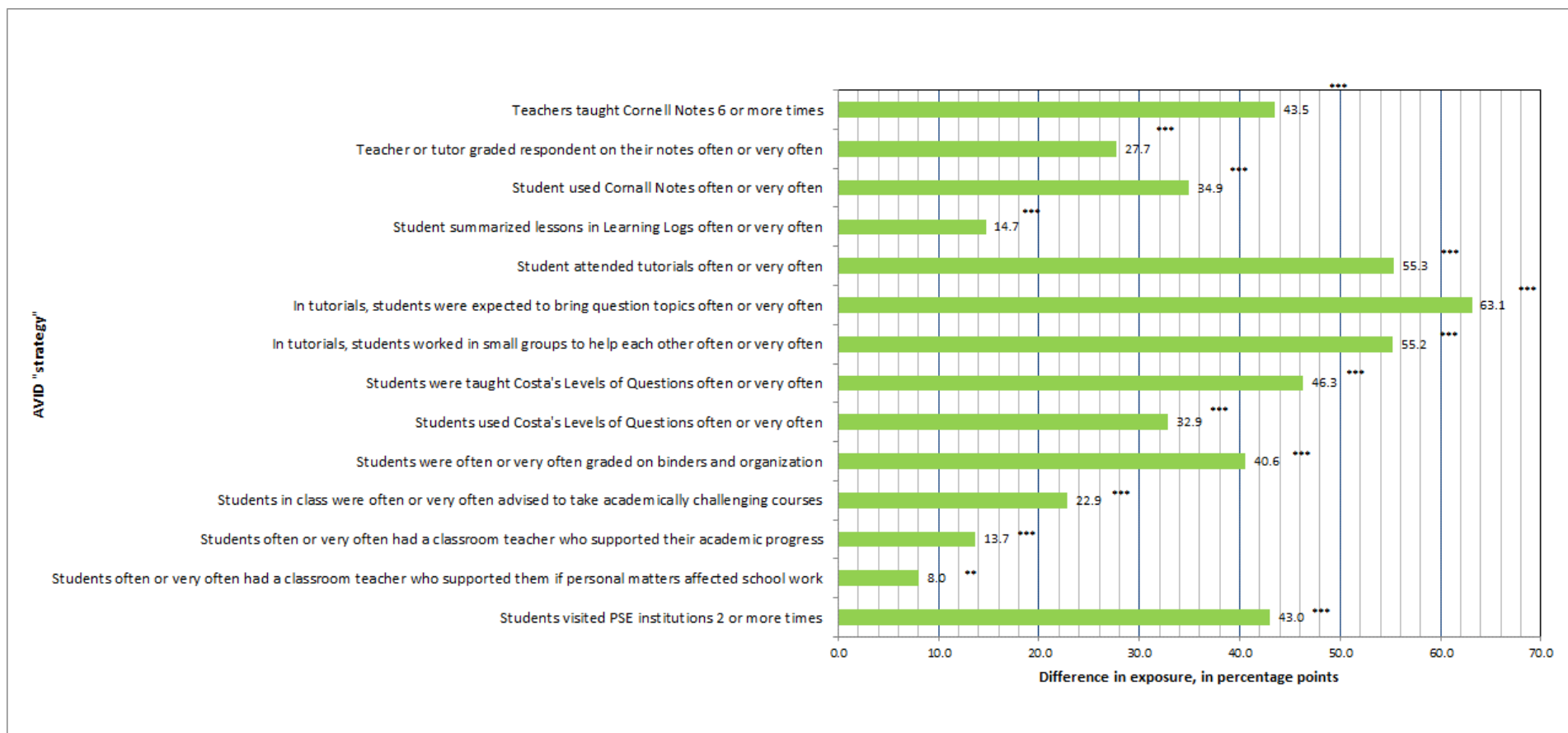
³⁸ Of course an unknown additional number of schools may be attempting to implement AVID but do not submit their certification forms. Such schools are not permitted to use the AVID name.

schools on the project's fair test criteria were still certified as AVID schools. In the next chapter, there is a similar analysis of student outcomes to that of Johnston et al. but for subgroups defined by the project's fair test fidelity scores.

Delivery Produced a Treatment Differential

SRDC's analysis presented in this chapter indicates that BC AVID was not given a fair test in BC high schools due to the insufficient fidelity of delivery by the participating schools implementing the program, especially with respect to tutorials. However, it is not clear to what extent this lack of fidelity to the BC AVID model would affect program outcomes, as SRDC's analysis has also shown the program as implemented still brought about considerable change in the education experiences of students selected as academically in the middle in the participating schools. Program group members, many of whom left the class at some point after the first year, still reported a set of experiences that differed markedly from those of similar students in the same schools and from students in non-AVID schools. As Chapter 5 of the interim impacts report concluded: "The Grade 11 "How do you learn?" survey showed that program group members were much more likely to have been taught AVID techniques than control group members. These differences, known as treatment differentials, were sometimes more than 60 percentage points. For example, the program group was 62 percentage points more likely to have frequently received exposure to 8 or more of the 17 AVID techniques." Specifically, as shown in Figure 4.2, large treatment differentials existed in students' reports of experience of AVID strategies such as being taught AVID techniques often, attending AVID classes, being taught and using Cornell Notes, and attending tutorials. Smaller, but still important, differentials existed for other techniques such as often working in small groups. Only occasionally, as with most writing techniques, were there only small treatment differentials. Substantial treatment differentials are important because they mean a difference in education experiences was created by attempts to deliver the program, even if it was not sufficiently different in each case to be labelled AVID.

Figure 4.2 Increase in Program Group's Exposure to AVID Strategies and Techniques



The Grade 11 survey also showed that, for the most part, the level of exposure to specific AVID techniques among the control group was similar to that found among students at non-AVID schools. This implies that, for the most part, exposure to AVID techniques among the control group (and subsequently lower treatment differential created by program delivery) was due to experience of these techniques being widespread among BC high school students rather than due to delivery of the program to control students.

Conclusion

The BC AVID Pilot Project was designed to test a particular program intervention: offering a place in a four-year AVID Elective class to middle-achieving Grade 8 students. As already noted, SRDC is confident that the program group received the initial offer of the AVID program. In order to accommodate the research requirements as well as conditions unique to the BC school system, a specific subset of AVID referred to as BC AVID has been created: BC sites were expected to deliver the BC AVID program. The fair test question is whether or not the adaptations schools made in delivering BC AVID to their students moved the program implementation outside acceptable limits for program delivery. Was what BC AVID staff delivered to students 'BC AVID' or was it another version of the program?

In order to answer this question, SRDC considered the extent to which the requirements for each AVID Essential were met. As noted above, schools clearly met BC AVID requirements for Essential 1 (selection), Essential 2 (voluntary participation), Essential 7 (collaboration), Essential 9 (prerequisites for post-secondary education), and Essential 10 (staff training). They were moderately successful in meeting the requirements for three other Essentials: writing, reading and inquiry (Essentials 5 and 6) and rigor (Essential 4). Clearly, BC AVID staff offered a broad cross-section of AVID strategies and curriculum to their students over time. While there were exceptions made to the AVID criteria for rigour (in particular, students taking less rigorous courses if this still allowed them to meet the entrance requirements for their choice of a non-university PSE program), students were encouraged "to keep the door open" on PSE options as long as possible. The definition of "rigour" was not clearly defined for BC AVID; however, the offer of BC AVID remained true to the broader intention of AVID — meeting PSE entrance requirements and voluntary student participation. Even though site team involvement (Essential 11) was difficult to maintain, this lack of involvement did not prevent BC AVID elective teachers from offering the majority of components of BC AVID to their students.

The Essentials that bring the fair test question more clearly into focus are those concerned with tutorial activity. All cohort classes (with one exception) did not meet the requirements for delivering a sufficient number of tutorials to students (Essential 8). More than two-thirds of class cohorts did not meet the minimum requirements for a balance of curriculum, tutorial and motivational activities largely due to insufficient tutorial time and there were an insufficient number of students to make multi-course tutorials viable (Essential 3).

BC AVID Pilot Project schools were provided with substantial resources and with access to two years of AVID summer institute training for a full site team: more than is available to many other schools. It appears they still may have found elements of the program difficult to put in place. In line with the language in the introduction to this chapter, AVID components were found missing sufficiently frequently in the experiences of the program group to make it inappropriate to consider them as having

received a program that carries the BC AVID label. Furthermore, it cannot reasonably be considered ‘an adaptation within boundaries’: it is more clearly a failure to deliver a key program component with sufficient fidelity. For this reason, while the project may not be considered to be a fair test of “BC AVID,” there is evidence that it could be considered a fair test of another program. Most AVID certification requirements and many BC AVID fair test requirements were met. Schools produced a marked treatment differential with respect to the educational experiences of the program group. BC staff delivered to students a classroom experience that was identifiably “AVID” — an AVID elective class delivered by AVID-trained staff that included AVID curriculum and strategies, a considerable amount of rigour, tutorials (that frequently did not meet AVID requirements) and the students completed graduation requirements.

There has been no previous study of AVID that has gone beyond the AVID Center’s certification data (that consider program fidelity at the level of the whole school) to examine the fidelity of program delivered class by class to individual students over the full duration of their four years of high school. It is thus not possible to know how closely what BC schools delivered matches programs that carry the label “AVID” elsewhere. BC schools’ programming may have been lacking elements present elsewhere. They may have included elements lacking elsewhere. This study can only report on the experience recorded in BC schools. The conclusion remains that despite being well resourced, monitored and supported, BC delivery fell short of the expectations for the program model and did not fairly test that model. The next chapter considers whether there is any relationship between adherence to these components and program impacts.

Chapter 5: The Impacts of the BC AVID Program Offer

Introduction

Offering the AVID program to middle-achieving students is expected to help raise their marks and their attendance at university (four-year college in the US). Dunn et al. (2008) identified four mechanisms through which AVID might operate to accomplish these goals. First, the study skills that AVID delivers to students may help them perform better in their other courses. Second, students who are equipped with better skills can be encouraged to take more challenging courses, which are often required for university. Third and fourth, students may also be more motivated to aim higher through mentoring and peer effects. The AVID teacher will commonly be a mentor to the student throughout the duration of the period he or she is in the AVID program, which facilitates customized support for their learning over time. AVID students are also tutored by older students (ideally from nearby colleges and universities). Students may build a close bond with these near-peers as well as their peers, who can act as role models. Many may also remain with them for the duration of the AVID program. Students in the class will share some common qualities given the AVID selection criteria. They may thus also identify with being part of a ‘club’, or a group of students with a common goal, to enrol in post-secondary education.

In this chapter, the impacts of offering the BC AVID program are presented. Two types of results are included: final high school results — those not previously presented in the BC AVID Interim Impacts Report (Dunn et al., 2010) — and post-secondary education results. Results are estimated for random assignment sites only.³⁹

The Interim Impacts report found that offering BC AVID had significant impacts on high school course choices. Indeed, in line with AVID Essential 4, students who were offered BC AVID were encouraged to take more challenging courses – including those usually required for university attendance. Moreover, the new findings in this report suggest that offering AVID also raised high school engagement, reduced the incidence of boys dropping out of high school, improved knowledge of career options, and increased familiarity with student financial aid. Combined, these results paint a picture of a group of students who are primed to go further in their education pathways. However, impacts on later secondary and post-secondary outcomes newly presented here also suggest that impacts on academic orientation in high school were temporary. High school marks and performance on provincial grade 12 exams were not improved for those in the AVID program group. Consequently, the offer of the program did not result in any change in the main objective of the AVID program, namely university applications and enrolment. In fact, there were no impacts on overall post-secondary applications and enrolment for any type of post-secondary education for the sample as a whole or any of the defined subgroups, including a “high program exposure” subgroup.

These results are presented in approximate chronological sequence, followed by a discussion of the many possible reasons why this study did not find any significant program impacts for the main

³⁹ Outcome data were collected for case study sites. At these sites, there are no control group outcomes to compare to program group outcomes. The main outcomes are included in a footnote in the relevant section.

objectives of AVID. In many cases, the possible explanations can be readily dismissed. However, some explanations remain plausible. Nevertheless, these explanations provide a basis for suggesting improvements to the AVID program delivery model. Finally, the chapter is summarized in the conclusion.

Chapter Summary

- **Offering BC AVID to students initially led to an increase in the number of rigorous courses taken.** In Grade 10, students who were offered BC AVID were 6.2 percentage points more likely to have taken four to eight rigorous courses. However, this impact disappeared by Grade 11. The offer also increased the proportions taking and passing Grade 10 Principles of Math and Grade 11 Social Studies, both commonly sought university entrance requirements, but not any other provincially-examinable courses.
- **Overall, the offer of BC AVID raised academic identification in the program group.** Scores on an index derived from survey responses were 2.2 percentage points higher for program group members. 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).
- **The offer of BC AVID also encouraged boys to remain in the AVID school throughout high school.** Boys offered AVID were 6.4 percentage points less likely to drop out than boys not offered the program. But there was no impact on high school graduation.
- **The program offer raised students' self-reported familiarity with student financial aid.** The proportion who reported being familiar with student financial aid increased by 8.9 percentage points as a result of the offer of BC AVID. The impact was particularly large among boys (13.7 percentage points).
- **Offering BC AVID did not raise applications to post-secondary programs nor enrolment in post-secondary education.** There was no impact on enrolment in all types of post-secondary combined, nor on enrolment in any one type of post-secondary education program. Offering BC AVID did not increase university enrolment (its primary post-secondary target in US implementations of the program). This set of findings applies for virtually all subgroups examined, including those in high- and low-fidelity schools with respect to BC AVID program delivery and a high program exposure subgroup.
- **The post-secondary attendance rate observed for students meeting the eligibility criteria for BC AVID was quite high (about 62 per cent), even for those not offered the program.** It could be argued that the selection of students eligible to receive the program was problematic. It remains plausible that “middle-achieving” students in British Columbia high schools may differ in characteristics typical among middle-achieving students from (generally) lower-income neighbourhoods in US urban areas.

Results

This section presents estimates of the impacts of offering the BC AVID program to “middle-achieving” BC students. The results are considered in more or less chronological order. The first part considers

high school outcomes, beginning with high school engagement. Then results on the number of rigorous courses taken by BC AVID participants are presented. This is followed by high school marks and results from the Grade 12 provincial language arts exam, which is required for high school graduation. To complete the transition to post-secondary education requires a student to be ready to make decisions about where to go. Thus, results pertaining to knowledge of career options and familiarity with student financial aid are presented.

The section then moves on to post-secondary outcomes. This includes applications and enrolment, both overall and by type of program. It also includes results on how students financed their post-secondary education.

Final High School Results

The first set of results concerns the high school engagement index of academic identification (Table 5.1). A scale was developed from questions originally used in Statistics Canada's Youth in Transition Survey to measure high school engagement and also included in the BC AVID Pilot Project Grade 12 survey of all students. Academic identification was measured as the percentage of all relevant items that students related to positively. The index includes items such as getting along with teachers, being interested in learning in class, and the importance of school.⁴⁰ Overall, the offer of BC AVID raised academic identification in the program group slightly by 2.2 percentage points. 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).

⁴⁰ This is the full list of AVID Grade 12 survey questions included in the academic identification score: I get along with teachers; I am interested in what I am learning in class; I feel proud to be part of my school; I am treated with as much respect as other students in my class; School is one of the most important things in my life; I think that many of the things we are learning in class were useless (reverse code); Most of my teachers don't really care about me (reverse code); Most of the time, I would have liked to be any place other than school (reverse code); Most of what I am learning in school will be useful when I get a job; School is often a waste of time (reverse code); School is more important than most people think; Most of my teachers do a good job at teaching; Most of my teachers really listen to what I have to say; If I need extra help, I receive it from my teachers; Most of my teachers treat me fairly; My school is a place I do not want to go (reverse code); My school is a place where I often feel bored (reverse code); I was given interesting homework.

Table 5.1 Impacts on High School Engagement Index: Academic Identification Score¹

	Offered AVID	Control Group	Impact (s.e.)	
Percentage of items classified as a positive academic identification (%)				
ALL	83.21	80.99	2.22 (1.01)	**
Boys	83.16	78.44	4.72 (1.71)	***
Girls	83.25	83.11	0.14 (1.34)	
Parents with high school or less (FGF)	82.31	81.00	1.30 (1.31)	
Parents with any PSE	84.50	81.18	3.32 (1.63)	**
Lowest quartile, equivalent family income	81.08	82.02	-0.93 (2.53)	
Upper three quartiles, equivalent family income	83.93	80.75	3.18 (1.30)	**
FSA Grade 7 numeracy, per cent score quartiles (%)				
First quartile	85.01	81.65	3.37 (3.24)	
Second quartile	81.26	80.97	0.28 (2.54)	
Third quartile	82.42	78.84	3.59 (2.21)	
Fourth quartile	83.91	82.91	1.00 (2.02)	
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	82.89	81.07	1.83 (1.88)	
At or above median	83.58	80.32	3.26 (1.42)	**
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	82.08	79.09	2.99 (2.72)	
Second quartile	82.50	80.29	2.21 (2.44)	
Third quartile	83.18	79.36	3.81 (2.22)	*
Fourth quartile	83.80	83.40	0.40 (1.55)	
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	82.40	80.82	1.58 (1.43)	
At or above median	83.89	81.92	1.97 (1.27)	
FSA grade 7 writing, per cent score above/below median (%)				
Below median	82.94	79.98	2.96 (3.36)	
At or above median	83.02	81.51	1.51 (1.11)	
Sample size	636	343		

Source: AVID grade 12 survey. Baseline survey and school records data to define subgroups.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

1 AVID Grade 12 survey questions included in the academic identification score: I get along with teachers; I am interested in what I am learning in class; I feel proud to be part of my school; I am treated with as much respect as other students in my class; School is one of the most important things in my life; I think that many of the things we are learning in class were useless (reverse code); Most of my teachers don't really care about me (reverse code); Most of the time, I would have liked to be any place other than school (reverse code); Most of what I am learning in school will be useful when I get a job; School is often a waste of time (reverse code); School is more important than most people think; Most of my teachers do a good job at teaching; Most of my teachers really listen to what I have to say; If I need extra help, I receive it from my teachers; Most of my teachers treat me fairly; My school is a place I do not want to go (reverse code); My school is a place where I often feel bored (reverse code); I was given interesting homework.

An earlier report (Dunn et al., 2010) concerned with students' experience during Grades 9 through 11 found offering BC AVID to students initially led to an increase in the number of rigorous courses taken. In Grade 10, students who were offered BC AVID were 6.2 percentage points more likely to have taken 4 to 8 rigorous courses. However, this impact disappeared by Grade 11 (Table 5.2). Despite the fact that students in the program group had ceased to take more rigorous courses than their counterparts in the control group, the offer of BC AVID did encourage students to remain in the AVID school throughout high school. This may indicate that the students (or their parents) were attached to the program, since by leaving the school they would have had to forego participation in AVID. An alternative explanation is that students stayed on in school due to increases in high school engagement already mentioned.

Table 5.2 Impacts on "Rigorous" Courses Taken in Grades 10, 11 and 12

Outcome Measure	Grade 10			Grade 11			Grade 12		
	Offered AVID	Control Group	Impact (s.e.)	Offered AVID	Control Group	Impact (s.e.)	Offered AVID	Control Group	Impact (s.e.)
ALL									
<i>Number of rigorous courses</i>									
Zero	1.08	0.77	0.30 (0.56)	3.12	3.40	-0.28 (0.90)	6.13	8.33	-2.19 (1.59)
1–3	17.47	19.08	-1.61 (2.27)	43.78	40.15	3.63 (2.90)	56.10	48.94	7.16 (3.19) **
4–8	71.38	65.21	6.17 (2.80) **	38.24	37.45	0.78 (2.70)	18.57	20.25	-1.68 (2.25)
over 8	0.00	0.22	-0.22 (0.25)	0.14	-0.02	0.15 (0.15)	0.91	1.07	-0.16 (0.52)
missing	0.89	1.33	-0.44 (0.67)	0.41	0.17	0.24 (0.31)	1.18	0.37	0.81 (0.50)
left the AVID school	9.19	13.40	-4.21 (2.03) **	14.31	18.84	-4.53 (2.40) *	14.31	18.84	-4.53 (2.40) *

Table 5.2 Impacts on "Rigorous" Courses Taken in Grades 10, 11 and 12

Outcome Measure	Grade 10				Grade 11				Grade 12			
	Offered AVID	Control Group	Impact (s.e.)		Offered AVID	Control Group	Impact (s.e.)		Offered AVID	Control Group	Impact (s.e.)	
Total number of rigorous courses taken	4.25	4.20	0.06 (0.07)		3.15	3.12	0.03 (0.09)		2.30	2.37	-0.08 (0.10)	
<i>Taking rigorous courses</i>												
Known to have taken Principles of Math	61.59	53.30	8.29 (2.68)	***	46.09	42.99	3.09 (2.76)		22.35	18.27	4.08 (2.21)	*
Not known to have taken Principles of Math	28.33	31.98	-3.64 (2.63)		39.19	38.00	1.20 (3.02)		59.36	60.32	-0.95 (3.03)	
No course information	0.89	1.33	-0.44 (0.67)		0.41	0.17	0.24 (0.31)		1.18	0.37	0.81 (0.50)	
Left the AVID school	9.19	13.40	-4.21 (2.03)	**	14.31	18.84	-4.53 (2.40)	*	17.11	21.04	-3.94 (2.53)	
Known to have taken English	86.67	82.77	3.90 (2.27)	*	79.21	73.22	5.99 (2.77)	**	73.40	66.99	6.41 (2.72)	**
Not known to have taken English	3.25	2.50	0.75 (0.81)		6.07	7.77	-1.70 (1.28)		8.32	11.60	-3.28 (1.73)	*
No course information	0.89	1.33	-0.44 (0.67)		0.41	0.17	0.24 (0.31)		1.18	0.37	0.81 (0.50)	
Left the AVID school	9.19	13.40	-4.21 (2.03)	**	14.31	18.84	-4.53 (2.40)	*	17.11	21.04	-3.94 (2.53)	
Known to have taken Science	84.60	80.63	3.97 (2.15)	*	72.03	68.27	3.76 (2.71)		38.45	38.63	-0.18 (2.69)	
Not known to have taken Science	5.32	4.64	0.68 (1.22)		13.25	12.71	0.53 (1.86)		43.26	39.95	3.31 (2.94)	
No course information	0.89	1.33	-0.44 (0.67)		0.41	0.17	0.24 (0.31)		1.18	0.37	0.81 (0.50)	
Left the AVID school	9.19	13.40	-4.21 (2.03)	**	14.31	18.84	-4.53 (2.40)	*	17.11	21.04	-3.94 (2.53)	
Known to have taken Social Studies	85.57	81.15	4.42 (2.45)	*	75.86	70.43	5.43 (2.57)	**	23.79	25.30	-1.51 (2.40)	
Not known to have taken Social Studies	4.36	4.12	0.23 (1.21)		9.42	10.56	-1.14 (1.66)		57.93	53.29	4.64 (2.97)	
No course information	0.89	1.33	-0.44 (0.67)		0.41	0.17	0.24 (0.31)		1.18	0.37	0.81 (0.50)	
Left the AVID school	9.19	13.40	-4.21 (2.03)	**	14.31	18.84	-4.53 (2.40)	*	17.11	21.04	-3.94 (2.53)	
Known to have taken a Foreign Language	54.85	51.81	3.04 (2.93)		39.65	37.63	2.02 (2.82)		11.26	9.53	1.73 (1.74)	

Table 5.2 Impacts on "Rigorous" Courses Taken in Grades 10, 11 and 12

Outcome Measure	Grade 10			Grade 11			Grade 12		
	Offered	Control	Impact	Offered	Control	Impact	Offered	Control	Impact
	AVID	Group	(s.e.)	AVID	Group	(s.e.)	AVID	Group	(s.e.)
Not known to have taken a Foreign Language	35.07	33.46	1.61	45.62	43.36	2.27	70.45	69.05	1.40
			(2.69)			(2.82)			(2.73)
No course information	0.89	1.33	-0.44	0.41	0.17	0.24	1.18	0.37	0.81
			(0.67)			(0.31)			(0.50)
Left the AVID school	9.19	13.40	-4.21	**	14.31	18.84	-4.53	*	17.11
			(2.03)			(2.40)		21.04	-3.94
									(2.53)
Sample size	791	450		791	450		791	450	

Source: SRDC's calculations using course participation records from BC AVID Pilot project schools and BC Ministry of Education and Baseline.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

Students who were offered BC AVID were more likely initially to experience additional academic struggle in their classes (Table 5.3). Being offered BC AVID was associated with a 5.1 percentage point increase in the proportion of students with a credit-weighted GPA between 0.01 and 2.00 in Grade 9. From Grade 10 onwards, no impacts were detected on high school marks overall. Students were taking more rigorous courses and obtaining the same marks as they would have in less rigorous courses. However, no impacts were detected on Grade 12 provincial exams (Table 5.4).

Table 5.3 Impacts on Marks Achieved and GPA in Grades 9, 10, 11 and 12

Outcome Measure	Grade 9			Grade 10			Grade 11			Grade 12		
	Offered AVID	Control Group	Impact (s.e.)	Offered AVID	Control Group	Impact (s.e.)	Offered AVID	Control Group	Impact (s.e.)	Offered AVID	Control Group	Impact (s.e.)
ALL												
<i>Proportion of grades that are As (credit weighted):</i>												
Zero	36.56	28.40	8.17 (2.52)	***	30.19	29.59	0.60 (2.41)		28.01	29.65	-1.64 (2.41)	
0.01 – 0.25	33.69	33.00	0.70 (2.75)		34.05	31.04	3.01 (2.49)		32.17	27.67	4.51 (2.75)	
										25.25	19.61	5.64 (2.49)
												**

Table 5.3 Impacts on Marks Achieved and GPA in Grades 9, 10, 11 and 12

	Grade 9			Grade 10			Grade 11			Grade 12					
	Offered	Control	Impact	Offered	Control	Impact	Offered	Control	Impact	Offered	Control	Impact			
Outcome Measure	AVID	Group	(s.e.)	AVID	Group	(s.e.)		AVID	Group	(s.e.)	AVID	Group	(s.e.)		
0.26 – 0.50	15.45	15.51	-0.07 (2.00)	17.99	18.16	-0.18 (2.19)		17.22	16.83	0.39 (2.11)	22.33	22.31	0.02 (2.46)		
0.51 – 1.00	8.71	10.47	-1.77 (1.72)	7.70	6.25	1.45 (1.43)		7.62	6.83	0.79 (1.50)	12.40	10.20	2.21 (1.88)		
Missing	3.26	6.71	-3.44 (1.27)	***	0.89	1.56	-0.67 (0.71)	0.66	0.17	0.49 (0.36)	1.18	0.37	0.81 (0.50)		
Left the AVID school	2.33	5.91	-3.59 (1.23)	***	9.19	13.40	-4.21 (2.03)	**	14.31	18.84	-4.53 (2.40)	*	17.11	21.04	-3.94 (2.53)
Proportion of grades that are Bs (credit weighted):															
Zero	10.06	8.76	1.30 (1.63)		12.96	9.66	3.31 (1.90)	*	11.75	13.80	-2.05 (1.93)	12.34	11.19	1.15 (1.98)	
0.01 – 0.25	31.97	32.70	-0.73 (2.65)		29.43	26.71	2.73 (2.79)		31.34	27.13	4.21 (2.67)	26.33	27.50	-1.17 (2.74)	
0.26 – 0.50	33.45	28.54	4.91 (2.79)	*	34.07	32.77	1.30 (2.78)		29.95	27.57	2.38 (2.77)	31.09	30.23	0.86 (2.64)	
0.51 – 1.00	18.93	17.39	1.55 (2.28)		13.45	15.91	-2.45 (2.22)		11.99	12.48	-0.49 (1.86)	11.95	9.67	2.28 (1.82)	
Missing	3.26	6.71	-3.44 (1.27)	***	0.89	1.56	-0.67 (0.71)		0.66	0.17	0.49 (0.36)	1.18	0.37	0.81 (0.50)	
Left the AVID school	2.33	5.91	-3.59 (1.23)	***	9.19	13.40	-4.21 (2.03)	**	14.31	18.84	-4.53 (2.40)	*	17.11	21.04	-3.94 (2.53)
Proportion of grades that are Cs (credit weighted):															
Zero	13.67	13.97	-0.31 (2.06)		10.70	9.87	0.83 (1.82)		8.51	7.93	0.58 (1.55)	10.18	10.32	-0.14 (1.83)	
0.01 – 0.25	17.19	18.22	-1.03 (2.10)		16.57	17.10	-0.53 (2.19)		16.17	13.13	3.03 (2.10)	18.56	14.04	4.52 (2.11)	**
0.26 – 0.50	22.57	20.32	2.25 (2.29)		26.25	27.19	-0.93 (2.78)		25.76	27.83	-2.06 (2.72)	29.18	27.15	2.03 (2.61)	
0.51 – 1.00	40.97	34.86	6.11 (2.53)	**	36.41	30.89	5.51 (2.61)	**	34.59	32.09	2.49 (2.83)	23.79	27.07	-3.29 (2.44)	
Missing	3.26	6.71	-3.44 (1.27)	***	0.89	1.56	-0.67 (0.71)		0.66	0.17	0.49 (0.36)	1.18	0.37	0.81 (0.50)	
Left the AVID school	2.33	5.91	-3.59 (1.23)	***	9.19	13.40	-4.21 (2.03)	**	14.31	18.84	-4.53 (2.40)	*	17.11	21.04	-3.94 (2.53)

Table 5.3 Impacts on Marks Achieved and GPA in Grades 9, 10, 11 and 12

Outcome Measure	Grade 9			Grade 10			Grade 11			Grade 12		
	Offered AVID	Control Group	Impact (s.e.)	Offered AVID	Control Group	Impact (s.e.)	Offered AVID	Control Group	Impact (s.e.)	Offered AVID	Control Group	Impact (s.e.)
<i>Proportion of grades that are Fs (credit weighted):</i>												
Zero	79.75	74.48	5.28 (2.68)	**	67.09	65.85	1.24 (2.65)			59.31	53.53	5.78 (2.92)
0.01 – 0.25	12.03	8.63	3.41 (1.73)	**	16.93	14.46	2.48 (2.13)			20.77	19.71	1.06 (2.28)
0.26 – 0.50	1.84	2.98	-1.14 (0.93)		4.86	3.45	1.41 (1.20)			3.88	6.97	-3.09 (1.52)
0.51 – 1.00	0.78	1.30	-0.52 (0.59)		1.04	1.29	-0.25 (0.62)			1.07	0.78	0.30 (0.53)
Missing	3.26	6.71	-3.44 (1.27)	***	0.89	1.56	-0.67 (0.71)			0.66	0.17	0.49 (0.36)
Left the AVID school	2.33	5.91	-3.59 (1.23)	***	9.19	13.40	-4.21 (2.03)	**		14.31	18.84	-4.53 (2.40)
<i>Credit weighted GPA</i>												
Zero	0.26	0.43	-0.18 (0.35)		0.65	0.19	0.46 (0.35)			0.14	0.20	-0.06 (0.21)
0.01 – 2.00	21.67	16.57	5.10 (2.27)	**	23.37	19.36	4.01 (2.51)			23.55	23.04	0.51 (2.42)
2.01 – 3.00	45.01	42.44	2.57 (2.94)		41.34	42.00	-0.66 (3.13)			40.15	39.20	0.95 (3.04)
3.01 – 4.00	27.47	27.93	-0.46 (2.42)		24.56	23.50	1.06 (2.38)			21.18	18.54	2.64 (2.36)
Missing	3.26	6.71	-3.44 (1.27)	***	0.89	1.56	-0.67 (0.71)			0.66	0.17	0.49 (0.36)
Left the AVID school	2.33	5.91	-3.59 (1.23)	***	9.19	13.40	-4.21 (2.03)	**		14.31	18.84	-4.53 (2.40)
Sample size	791	450			791	450			791	450		

Source: SRDC's calculations using course participation records from BC AVID Pilot project schools and BC Ministry of Education and Baseline.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

Table 5.4 Impacts on Grade 12 Provincial Exams

Provincial Examination Courses	Offered AVID	Control Group	Impact (s.e.)
ALL			
English 12			
Proportion that took the course/exam	79.91	76.66	3.25 (2.56)
Proportion that did not take the course/exam	9.94	10.76	-0.82 (1.74)
Proportion missing (i.e., no data on MOE file)	10.16	12.59	-2.43 (1.87)
Proportion that passed the course (A, B, or C)	76.76	73.08	3.68 (2.61)
Proportion that failed the course (F)	3.15	3.58	-0.43 (1.11)
Proportion that passed the exam (A, B, or C)	71.96	71.74	0.22 (2.68)
Proportion that failed the exam (F)	7.95	4.92	3.03 (1.48)
Proportion with a blended mark of A, B, or C	78.26	74.44	3.82 (2.59)
Proportion with a blended mark of F	1.65	2.22	-0.57 (0.92)
Best mark course/exam (A, B, or C)	78.65	74.87	3.78 (2.61)
Best mark course/exam (F)	1.26	1.79	-0.53 (0.79)
Language Arts 12*			
Proportion that took the course/exam	84.17	81.83	2.34 (2.26)
Proportion that did not take the course/exam	5.67	5.59	0.09 (1.28)
Proportion missing (i.e., no data on MOE file)	10.16	12.59	-2.43 (1.87)
Proportion that passed the course (A, B, or C)	80.89	78.26	2.63 (2.32)
Proportion that failed the course (F)	0.00	0.00	0.00 (0.00)
Proportion that passed the exam (A, B, or C)	76.20	76.95	-0.75 (2.45)
Proportion that failed the exam (F)	0.00	0.00	0.00 (0.00)

**

Table 5.4 Impacts on Grade 12 Provincial Exams

Provincial Examination Courses	Offered AVID	Control Group	Impact (s.e.)
Proportion with a blended mark of A, B, or C	82.24	79.66	2.59 (2.33)
Proportion with a blended mark of F	0.00	0.00	0.00 (0.00)
Best mark course/exam (A, B, or C)	82.78	80.05	2.73 (2.32)
Best mark course/exam (F)	0.00	0.00	0.00 (0.00)
Sample size	791	450	

Source: SRDC's calculations using course participation records from BC AVID Pilot project schools and BC Ministry of Education and Baseline.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

* At least one Language Arts course.

Despite the general lack of improvement in high school marks and exam performance, some students were less likely to drop out of high school as a result of BC AVID (Table 5.5). Specifically, boys who were offered BC AVID were 6.4 percentage points less likely to report dropping out of school than their counterparts who were not offered the program. This is a substantial finding as high school dropout rates are generally below 10 per cent. Recall from Table 5.1 that boys (but not girls) were more engaged (in terms of their expressed academic identification) as a result of being offered AVID.

Table 5.5 Impacts on Dropping Out From High School

	Offered AVID	Control Group	Impact (s.e.)	
Ever dropped out from high school (%)				
ALL	7.46	8.45	-1.00 (1.85)	
Boys	4.62	10.97	-6.35 (2.83)	**
Girls	9.84	6.68	3.16 (2.64)	
Parents with high school or less (FGF)	8.14	8.88	-0.74 (2.64)	
Parents with any PSE	7.02	7.50	-0.48 (2.67)	

Table 5.5 Impacts on Dropping Out From High School

	Offered AVID	Control Group	Impact (s.e.)	
Lowest quartile, equivalent family income	13.22	9.74	3.48 (5.35)	
Upper three quartiles, equivalent family income	5.67	4.22	1.45 (1.92)	
FSA Grade 7 numeracy, per cent score quartiles (%)				
First quartile	61.94	49.47	12.47 (8.28)	
Second quartile	54.16	58.20	-4.04 (6.03)	
Third quartile	58.40	57.56	0.84 (6.49)	
Fourth quartile	67.72	76.68	-8.96 (4.50)	**
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	7.32	9.10	-1.77 (3.18)	
At or above median	7.09	7.58	-0.50 (2.41)	
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	8.86	6.12	2.74 (4.00)	
Second quartile	8.91	10.39	-1.48 (4.74)	
Third quartile	4.76	12.38	-7.62 (3.69)	**
Fourth quartile	7.02	4.21	2.81 (3.23)	
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	8.87	8.39	0.48 (3.16)	
At or above median	6.03	8.22	-2.19 (2.36)	
FSA grade 7 writing, per cent score above/below median (%)				
Below median	14.57	9.88	4.70 (8.99)	
At or above median	6.01	8.30	-2.29 (2.01)	
Sample size	586	335		

Source: AVID 66-month main survey. Baseline survey and school records data to define subgroups.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

Students were also more informed about career options as a result of being offered BC AVID (Table 5.6). Approximately 31 per cent of control group members agreed or strongly agreed 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" but students who were offered BC AVID were less likely to agree: the difference was somewhat large, at 6.0 percentage points. It was particularly large among girls (12.0 percentage points), but not among boys (1.8 percentage points, which was not statistically significant). It is interesting that boys experienced an increase in academic identification and a decline in dropping out of high school while offering AVID seems to have had a larger influence on girls' career education.

Table 5.6 Impacts on Career Options Information

	Offered AVID	Control Group	Impact (s.e.)	
Strongly agree or agree 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" (%)				
ALL	25.23	31.22	-5.99 (3.18)	*
Boys	25.87	27.62	-1.75 (4.64)	
Girls	23.70	35.68	-11.97 (4.26)	***
Parents with high school or less (FGF)	27.24	34.62	-7.38 (4.75)	
Parents with any PSE	22.85	27.29	-4.45 (4.72)	
Lowest quartile, equivalent family income	25.92	40.80	-14.88 (9.37)	
Upper three quartiles, equivalent family income	26.23	30.61	-4.38 (3.93)	
FSA Grade 7 numeracy, per cent score quartiles (%)				
First quartile	34.31	31.49	2.82 (11.00)	
Second quartile	25.43	28.48	-3.05 (6.90)	
Third quartile	19.01	37.75	-18.75 (7.00)	***
Fourth quartile	26.68	23.31	3.37 (5.31)	
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	28.45	30.57	-2.11 (5.38)	
At or above median	23.93	29.18	-5.25 (4.16)	
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	23.02	25.92	-2.90 (8.08)	

Table 5.6 Impacts on Career Options Information

	Offered AVID	Control Group	Impact (s.e.)	
Second quartile	22.53	42.30	-19.77 (8.14)	**
Third quartile	24.70	26.42	-1.73 (6.25)	
Fourth quartile	29.05	28.77	0.28 (6.10)	
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	22.39	35.18	-12.79 (4.89)	***
At or above median	27.42	26.62	0.80 (4.23)	
FSA grade 7 writing, per cent score above/below median (%)				
Below median	32.51	34.92	-2.42 (17.86)	
At or above median	24.08	30.52	-6.45 (3.23)	**
Sample size	584	332		

Source: AVID 66-month main survey. Baseline survey and school records data to define subgroups.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

The BC AVID program offer raised students' self-reported familiarity with student financial aid (Table 5.7). The proportion who reported being familiar with student financial aid was 61.3 per cent in the control group but increased by 8.9 percentage points as a result of the offer of BC AVID. The impact was particularly large among boys (13.7 percentage points). The impact for girls (5.6 percentage points) was not statistically significant. Other subgroups reported increased familiarity as well, including those whose parents had some post-secondary education (10.4 percentage points) and those were in the upper three quartiles of the family income distribution at baseline (9.9 percentage points).

Table 5.7 Impacts on Familiarity With Student Financial Aid (SFA)

	Offered AVID	Control Group	Impact (s.e.)	
Percentage of students familiar with SFA (%)				
ALL	70.21	61.28	8.93 (3.43)	***
Boys	67.60	53.94	13.66 (5.46)	**
Girls	72.59	67.02	5.57 (4.45)	
Parents with high school or less (FGF)	70.47	63.33	7.14 (4.55)	
Parents with any PSE	69.89	59.45	10.43 (5.05)	**
Lowest quartile, equivalent family income	74.83	69.91	4.91 (8.10)	
Upper three quartiles, equivalent family income	69.49	59.66	9.83 (4.66)	**
FSA Grade 7 numeracy, per cent score quartiles (%)				
First quartile	70.37	60.69	9.69 (9.35)	
Second quartile	67.70	63.86	3.84 (7.06)	
Third quartile	71.56	55.59	15.97 (7.85)	**
Fourth quartile	70.45	69.57	0.87 (6.38)	
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	69.84	60.82	9.02 (4.82)	*
At or above median	70.78	63.14	7.64 (4.83)	
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	74.42	56.51	17.91 (7.84)	**
Second quartile	64.91	53.75	11.16 (8.15)	
Third quartile	69.43	68.22	1.21 (6.77)	
Fourth quartile	71.27	65.76	5.51 (5.43)	
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	69.36	58.44	10.92 (4.32)	**
At or above median	71.40	67.08	4.32 (4.41)	

Table 5.7 Impacts on Familiarity With Student Financial Aid (SFA)

	Offered AVID	Control Group	Impact (s.e.)	
FSA grade 7 writing, per cent score above/below median (%)				
Below median	62.70	60.03	2.68 (11.06)	
At or above median	71.50	62.74	8.76 (3.80)	**
Sample size	635	343		

Source: AVID grade 12 survey. Baseline survey and school records data to define subgroups.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

Post-secondary Education Results

Results presented so far in this chapter imply that offering BC AVID to middle-achieving students produced a mixture of modest effects for students 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 significant results on rigorous course choices did not extend beyond increasing the proportions who took and passed Grade 10 Principles of Math and Grade 11 Social Studies. By Grade 12, the majority of students offered AVID did not appear to be in a much better position academically than they would have been without the offer to gain entry into university (the ultimate goal of the AVID program in the US), or any other level of post-secondary studies for that matter.

Given the findings on high school academic impact, it is perhaps not surprising that making BC AVID available to middle-achieving students did not raise their rates of applying to post-secondary programs nor of enrolling in post-secondary education (Tables 5.8, 5.9, 5.10 and 5.11). There was no impact on enrolment in all types of post-secondary combined, nor on enrolment in any one type of post-secondary education program. Offering AVID did not increase university enrolment (its primary post-secondary target in US implementations of the program) and this result holds for all subgroups examined. This means offering AVID produced no post-secondary impact for any of the many groups where a difference could have been hypothesized (not all of which could be accommodated in these tables): Aboriginal youth; those living in lower-income families; those scoring very high on AVID eligibility in initial student selection; those in high-fidelity or low-fidelity schools with respect to AVID delivery.⁴¹ There is one apparent large difference observed in post-secondary enrolment for the subgroup

⁴¹ It is not possible to estimate the effect of AVID on outcomes at case study sites. There was no control group at these sites. Post-secondary enrolment among AVID program group members at case study sites was 56 per cent (24 per cent at universities). Among waitlist group members who would have entered the AVID class at a later date, if at all, at these sites, post-secondary enrolment was also 56 per cent (23 per cent at universities).

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. In general, therefore, post-secondary applications and enrolment did not improve as a result of offering BC AVID.

Table 5.8 Impact on PSE Applications

	Offered AVID	Control Group	Impact (s.e.)	
PSE applications (%)				
ALL	68.19	66.74	1.45 (2.94)	
Boys	66.03	61.77	4.26 (4.07)	
Girls	70.22	70.61	-0.38 (3.59)	
Parents with high school or less (FGF)	63.85	60.44	3.41 (4.26)	
Parents with any PSE	74.73	74.24	0.48 (4.07)	
Lowest quartile, equivalent family income	67.69	64.47	3.22 (7.13)	
Upper three quartiles, equivalent family income	69.00	71.44	-2.44 (3.78)	
FSA Grade 7 numeracy, per cent score quartiles (%)				
First quartile	67.34	54.78	12.56 (8.45)	
Second quartile	65.81	65.37	0.44 (6.27)	
Third quartile	66.64	63.41	3.24 (6.38)	
Fourth quartile	72.68	78.08	-5.40 (4.65)	
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	66.90	60.48	6.42 (4.54)	
At or above median	70.27	70.42	-0.15 (3.74)	
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	65.27	64.06	1.20 (6.49)	
Second quartile	60.08	64.82	-4.74 (7.23)	
Third quartile	68.86	58.73	10.12 (5.94)	*
Fourth quartile	72.59	73.41	-0.82 (4.08)	
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	64.71	62.55	2.16 (3.67)	
At or above median	73.13	66.74	6.39 (3.93)	

Table 5.8 Impact on PSE Applications

	Offered AVID	Control Group	Impact (s.e.)
FSA grade 7 writing, per cent score above/below median (%)			
Below median	54.30	54.26	0.04 (9.20)
At or above median	69.81	69.49	0.33 (2.95)
Sample size	701	409	

Source: AVID 66-month main and proxy surveys. Baseline survey and school records data to define subgroups.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

Table 5.9 Impacts on PSE Applications by Type of Institution

	Offered AVID	Control Group	Impact (s.e.)
APPLIED TO UNIVERSITY (%)			
ALL	31.38	33.08	-1.70 (2.80)
Boys	30.46	26.96	3.51 (3.95)
Girls	32.33	37.78	-5.46 (3.64)
Parents with high school or less (FGF)	25.60	28.04	-2.44 (3.66)
Parents with any PSE	38.72	40.96	-2.24 (4.22)
Lowest quartile, equivalent family income	31.76	30.82	0.94 (5.95)
Upper three quartiles, equivalent family income	32.31	34.73	-2.42 (3.57)
FSA Grade 7 numeracy, per cent score quartiles (%)			
First quartile	32.70	19.29	13.40 (9.00)
Second quartile	23.77	25.48	-1.72 (7.06)
Third quartile	39.50	31.03	8.47 (8.29)
Fourth quartile	52.81	54.76	-1.95 (6.97)

Table 5.9 Impacts on PSE Applications by Type of Institution

	Offered AVID	Control Group	Impact (s.e.)
FSA Grade 7 numeracy, per cent score above/below median (%)			
Below median	27.18	23.35	3.82 (4.64)
At or above median	46.64	44.53	2.12 (4.87)
FSA Grade 7 reading comprehension, per cent score quartiles (%)			
First quartile	24.33	17.01	7.31 (7.49)
Second quartile	24.46	31.00	-6.53 (9.22)
Third quartile	38.72	31.11	7.62 (6.99)
Fourth quartile	55.25	54.60	0.65 (7.85)
FSA Grade 7 reading comprehension, per cent score above/below median (%)			
Below median	22.98	25.84	-2.85 (4.72)
At or above median	47.01	43.67	3.34 (5.30)
FSA grade 7 writing, per cent score above/below median (%)			
Below median	18.15	19.22	-1.07 (13.24)
At or above median	40.54	38.63	1.91 (3.86)
Sample size	699	404	
APPLIED TO COLLEGE (%)			
ALL	35.10	32.13	2.96 (3.04)
Boys	30.79	28.75	2.04 (4.26)
Girls	39.22	34.66	4.56 (3.99)
Parents with high school or less (FGF)	35.27	29.41	5.86 (4.13)
Parents with any PSE	35.98	33.98	2.00 (4.72)
Lowest quartile, equivalent family income	32.78	25.32	7.46 (6.64)
Upper three quartiles, equivalent family income	35.11	38.99	-3.89 (4.05)
FSA Grade 7 numeracy, per cent score quartiles (%)			
First quartile	48.44	32.68	15.76 (10.13)
Second quartile	45.30	49.35	-4.05 (7.39)

Table 5.9 Impacts on PSE Applications by Type of Institution

	Offered AVID	Control Group	Impact (s.e.)	
Third quartile	45.93	50.52	-4.59 (7.51)	
Fourth quartile	47.74	68.66	-20.91 (7.09)	***
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	46.84	42.17	4.67 (5.00)	
At or above median	47.38	58.10	-10.73 (4.60)	**
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	44.13	44.38	-0.26 (8.11)	
Second quartile	40.46	54.08	-13.62 (8.82)	
Third quartile	54.51	44.90	9.61 (7.10)	
Fourth quartile	45.22	61.32	-16.10 (7.80)	**
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	42.54	48.58	-6.04 (4.85)	
At or above median	50.74	52.00	-1.26 (4.67)	
FSA grade 7 writing, per cent score above/below median (%)				
Below median	34.64	39.38	-4.75 (11.49)	
At or above median	48.54	52.67	-4.13 (3.54)	
Sample size	691	403		
APPLIED TO PRIVATE COLLEGE OR VOCATIONAL INSTITUTE (%)				
ALL	7.64	7.95	-0.31 (1.76)	
Boys	4.39	4.68	-0.29 (2.07)	
Girls	10.23	11.25	-1.03 (2.72)	
Parents with high school or less (FGF)	6.61	8.76	-2.14 (2.36)	
Parents with any PSE	9.61	6.23	3.38 (2.70)	
Lowest quartile, equivalent family income	7.56	8.20	-0.64 (3.72)	
Upper three quartiles, equivalent family income	8.28	6.84	1.44 (2.24)	

Table 5.9 Impacts on PSE Applications by Type of Institution

	Offered AVID	Control Group	Impact (s.e.)
FSA Grade 7 numeracy, per cent score quartiles (%)			
First quartile	18.83	13.07	5.76 (13.02)
Second quartile	7.75	13.70	-5.96 (6.87)
Third quartile	8.63	8.02	0.61 (5.32)
Fourth quartile	15.46	18.03	-2.57 (8.16)
FSA Grade 7 numeracy, per cent score above/below median (%)			
Below median	12.03	14.38	-2.35 (5.15)
At or above median	13.25	10.21	3.05 (4.08)
FSA Grade 7 reading comprehension, per cent score quartiles (%)			
First quartile	12.49	19.66	-7.16 (9.11)
Second quartile	6.54	17.31	-10.77 (9.87)
Third quartile	10.16	11.69	-1.53 (6.05)
Fourth quartile	17.54	6.85	10.69 (12.06)
FSA Grade 7 reading comprehension, per cent score above/below median (%)			
Below median	10.73	16.87	-6.14 (5.58)
At or above median	13.19	9.94	3.25 (4.61)
FSA grade 7 writing, per cent score above/below median (%)			
Below median	4.17	15.85	-11.68 (13.06)
At or above median	13.19	13.61	-0.42 (3.63)
Sample size	696	400	
APPLIED TO BE APPRENTICE (%)			
ALL	7.87	8.78	-0.91 (1.77)
Boys	14.27	16.00	-1.72 (3.27)
Girls	2.30	2.54	-0.24 (1.31)
Parents with high school or less (FGF)	7.87	7.72	0.14 (2.27)
Parents with any PSE	7.71	10.02	-2.31 (2.67)

Table 5.9 Impacts on PSE Applications by Type of Institution

	Offered AVID	Control Group	Impact (s.e.)
Lowest quartile, equivalent family income	9.60	15.91	-6.31 (4.71)
Upper three quartiles, equivalent family income	7.52	6.08	1.44 (2.08)
FSA Grade 7 numeracy, per cent score quartiles (%)			
First quartile	11.72	3.41	8.31 (8.79)
Second quartile	12.65	17.07	-4.43 (7.45)
Third quartile	17.50	20.22	-2.72 (7.76)
Fourth quartile	13.35	22.51	-9.16 (9.84)
FSA Grade 7 numeracy, per cent score above/below median (%)			
Below median	12.53	10.72	1.82 (4.10)
At or above median	15.63	20.33	-4.70 (5.36)
FSA Grade 7 reading comprehension, per cent score quartiles (%)			
First quartile	12.83	18.71	-5.88 (7.60)
Second quartile	13.75	19.70	-5.95 (9.52)
Third quartile	16.34	10.60	5.74 (6.85)
Fourth quartile	10.83	15.10	-4.27 (10.67)
FSA Grade 7 reading comprehension, per cent score above/below median (%)			
Below median	14.48	17.25	-2.78 (4.66)
At or above median	13.73	13.12	0.62 (5.18)
FSA grade 7 writing, per cent score above/below median (%)			
Below median	18.32	13.25	5.07 (13.22)
At or above median	12.49	17.21	-4.72 (3.58)
Sample size	695	402	

Source: AVID 66-month main and proxy surveys. Baseline survey and school records data to define subgroups.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

Table 5.10 Impacts on PSE Enrolment

	Offered AVID	Control Group	Impact (s.e.)	
Enrolled in PSE institution (%)				
ALL	60.71	61.72	-1.01 (2.93)	
Boys	60.20	59.95	0.26 (4.26)	
Girls	61.08	63.29	-2.21 (3.62)	
Parents with high school or less (FGF)	54.33	57.80	-3.47 (4.27)	
Parents with any PSE	69.47	67.44	2.03 (4.12)	
Lowest quartile, equivalent family income	62.41	62.65	-0.24 (6.74)	
Upper three quartiles, equivalent family income	60.32	65.72	-5.41 (3.78)	
FSA Grade 7 numeracy, per cent score quartiles (%)				
First quartile	61.92	48.88	13.04 (8.27)	
Second quartile	54.16	58.20	-4.04 (6.03)	
Third quartile	58.40	57.56	0.84 (6.49)	
Fourth quartile	67.72	76.68	-8.96 (4.50)	**
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	57.47	54.45	3.01 (4.41)	
At or above median	63.92	66.96	-3.04 (3.74)	
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	54.29	59.46	-5.17 (6.60)	
Second quartile	50.77	61.01	-10.24 (7.44)	
Third quartile	65.55	54.02	11.54 (6.05)	*
Fourth quartile	65.08	71.68	-6.61 (4.36)	
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	56.40	56.65	-0.25 (3.63)	
At or above median	66.13	63.77	2.36 (4.12)	

Table 5.10 Impacts on PSE Enrolment

	Offered AVID	Control Group	Impact (s.e.)
FSA grade 7 writing, per cent score above/below median (%)			
Below median	51.51	54.09	-2.58 (9.25)
At or above median	61.61	63.85	-2.24 (3.18)
Sample size	717	416	
Enrolled in PSE institution (%)			
Fidelity score			
AVID essential 3 - school score is below median	55.86	54.81	1.05 (4.87)
AVID essential 3 - school score is above median	63.74	66.08	-2.35 (3.69)
AVID essential 8 - school score is below median	58.50	53.89	4.61 (4.00)
AVID essential 8 - school score is above median	63.08	68.92	-5.84 (4.05)
AVID all essentials combined - school score is below median	57.52	56.58	0.94 (4.49)
AVID all essentials combined - school score is above median	63.57	66.14	-2.57 (4.02)
AVID score			
Teacher/self-referrals score is 10 and above	61.02	60.14	0.88 (4.20)
Teacher/self-referrals score is below 10	61.43	61.40	0.03 (3.96)
Student's written portion of application score is 8 and above	66.04	62.98	3.05 (3.86)
Student's written portion of application score is 7 or below	56.28	59.05	-2.78 (4.41)
Student's special circumstances score is 0	62.53	63.61	-1.08 (3.51)
Student's special circumstances score is more than 0	58.84	55.76	3.08 (5.24)
Student's oral interview score is 17 or more	63.43	64.16	-0.74 (4.23)
Student's oral interview score is 16 or less	58.93	58.40	0.53 (4.30)
Cohorts			
Cohort 1	61.88	61.38	0.50 (3.94)
Cohort 2	59.06	62.39	-3.33 (4.29)

Table 5.10 Impacts on PSE Enrolment

	Offered AVID	Control Group	Impact (s.e.)
Distance to nearest university			
40 kilometres or more	63.94	54.43	9.51 (6.49)
less than 40 kilometres	59.87	63.56	-3.69 (3.32)
Aboriginal	52.12	56.13	-4.01 (20.58)
Sample size	717	416	

Source: AVID 66-month main and proxy surveys and PSE administrative data. Baseline survey and school records data to define subgroups.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

Table 5.11 Impacts on PSE Enrolment by Type of Institution

	Offered AVID	Control Group	Impact (s.e.)
ENROLLED IN UNIVERSITY (%)			
ALL	25.12	24.98	0.14 (2.62)
Boys	25.66	20.97	4.69 (3.72)
Girls	24.90	27.78	-2.88 (3.56)
Parents with high school or less (FGF)	20.57	21.11	-0.54 (3.32)
Parents with any PSE	30.40	31.74	-1.34 (4.15)
Lowest quartile, equivalent family income	23.47	27.73	-4.26 (5.66)
Upper three quartiles, equivalent family income	26.94	26.40	0.54 (3.60)
FSA Grade 7 numeracy, percent score quartiles (%)			
First quartile	18.84	17.79	1.06 (6.03)
Second quartile	15.75	14.65	1.10 (4.28)
Third quartile	26.21	21.97	4.24 (5.64)
Fourth quartile	37.06	38.55	-1.49 (5.86)

Table 5.11 Impacts on PSE Enrolment by Type of Institution

	Offered AVID	Control Group	Impact (s.e)
FSA Grade 7 numeracy, per cent score above/below median (%)			
Below median	16.93	16.09	0.84 (3.12)
At or above median	32.01	31.21	0.80 (4.00)
FSA Grade 7 reading comprehension, per cent score quartiles (%)			
First quartile	15.02	10.82	4.19 (4.84)
Second quartile	15.39	19.23	-3.84 (5.43)
Third quartile	25.11	22.47	2.65 (5.19)
Fourth quartile	40.94	40.86	0.08 (6.48)
FSA Grade 7 reading comprehension, per cent score above/below median (%)			
Below median	14.37	16.03	-1.67 (3.16)
At or above median	32.39	32.50	-0.11 (4.23)
FSA grade 7 writing, per cent score above/below median (%)			
Below median	11.37	15.77	-4.40 (7.62)
At or above median	26.85	26.18	0.66 (3.02)
Sample size	717	416	
ENROLLED IN COLLEGE (%)			
ALL	36.41	39.90	-3.49 (2.67)
Boys	34.62	39.92	-5.30 (4.32)
Girls	38.06	39.86	-1.80 (3.49)
Parents with high school or less (FGF)	35.67	37.59	-1.92 (4.30)
Parents with any PSE	37.48	43.11	-5.63 (4.64)
Lowest quartile, equivalent family income	36.52	39.24	-2.72 (6.93)
Upper three quartiles, equivalent family income	35.71	46.32	-10.62 (3.83)

Table 5.11 Impacts on PSE Enrolment by Type of Institution

	Offered AVID	Control Group	Impact (s.e)	
FSA Grade 7 numeracy, per cent score quartiles (%)				
First quartile	37.82	27.55	10.27 (7.69)	
Second quartile	38.30	37.79	0.52 (6.31)	
Third quartile	36.21	43.65	-7.44 (6.55)	
Fourth quartile	34.73	48.27	-13.54 (5.99)	**
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	38.17	33.63	4.55 (4.50)	
At or above median	35.21	46.31	-11.09 (3.97)	***
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	36.52	37.94	-1.42 (7.30)	
Second quartile	33.12	43.66	-10.54 (8.10)	
Third quartile	46.18	36.13	10.05 (6.11)	
Fourth quartile	29.59	42.08	-12.50 (6.27)	**
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	34.77	40.77	-6.01 (4.56)	
At or above median	37.72	39.56	-1.84 (3.51)	
FSA grade 7 writing, per cent score above/below median (%)				
Below median	27.58	30.91	-3.34 (9.06)	
At or above median	37.43	42.10	-4.67 (2.96)	
Sample size	717	416		
ENROLLED IN PRIVATE COLLEGE OR VOCATIONAL INSTITUTE (%)				
ALL	5.87	5.51	0.36 (1.48)	
Boys	3.94	4.03	-0.09 (1.91)	
Girls	7.37	7.15	0.21 (2.13)	
Parents with high school or less (FGF)	4.46	6.16	-1.71 (2.15)	
Parents with any PSE	8.16	4.18	3.98 (2.28)	*

Table 5.11 Impacts on PSE Enrolment by Type of Institution

	Offered AVID	Control Group	Impact (s.e)
Lowest quartile, equivalent family income	6.15	4.26	1.89 (3.00)
Upper three quartiles, equivalent family income	6.55	4.44	2.11 (1.98)
FSA Grade 7 numeracy, per cent score quartiles (%)			
First quartile	9.24	9.19	0.06 (4.77)
Second quartile	4.18	5.63	-1.45 (3.11)
Third quartile	4.78	2.80	1.97 (2.30)
Fourth quartile	7.22	4.35	2.88 (2.64)
FSA Grade 7 numeracy, per cent score above/below median (%)			
Below median	5.76	7.91	-2.15 (2.60)
At or above median	6.19	3.56	2.63 (1.73)
FSA Grade 7 reading comprehension, per cent score quartiles (%)			
First quartile	6.24	11.71	-5.47 (3.87)
Second quartile	4.43	6.40	-1.97 (3.71)
Third quartile	5.94	4.19	1.76 (2.85)
Fourth quartile	5.92	2.79	3.13 (2.51)
FSA Grade 7 reading comprehension, per cent score above/below median (%)			
Below median	5.86	8.45	-2.59 (2.66)
At or above median	6.01	3.36	2.65 (1.91)
FSA grade 7 writing, per cent score above/below median (%)			
Below median	3.62	7.56	-3.94 (5.07)
At or above median	6.33	5.43	0.90 (1.60)
Sample size	717	416	
ENROLLED TO BE APPRENTICE (%)			
ALL	6.56	7.45	-0.89 (1.62)
Boys	11.88	13.58	-1.69 (3.02)
Girls	1.63	2.57	-0.94 (1.25)

Table 5.11 Impacts on PSE Enrolment by Type of Institution

	Offered AVID	Control Group	Impact (s.e)	
Parents with high school or less (FGF)	5.31	6.35	-1.04 (1.84)	
Parents with any PSE	7.48	9.25	-1.77 (2.87)	
Lowest quartile, equivalent family income	5.40	13.20	-7.81 (4.19)	*
Upper three quartiles, equivalent family income	6.62	5.57	1.05 (2.05)	
FSA Grade 7 numeracy, per cent score quartiles (%)				
First quartile	3.80	5.33	-1.53 (3.49)	
Second quartile	6.58	8.83	-2.25 (3.39)	
Third quartile	8.95	10.59	-1.64 (3.85)	
Fourth quartile	6.15	6.64	-0.49 (3.17)	
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	5.75	6.91	-1.16 (2.24)	
At or above median	7.42	8.43	-1.01 (2.33)	
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	7.13	11.41	-4.28 (4.06)	
Second quartile	7.23	10.90	-3.67 (4.04)	
Third quartile	8.22	5.32	2.90 (2.95)	
Fourth quartile	3.65	5.36	-1.72 (2.59)	
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	7.72	10.35	-2.64 (2.58)	
At or above median	6.01	5.24	0.78 (2.02)	
FSA grade 7 writing, per cent score above/below median (%)				
Below median	12.54	7.67	4.87 (6.64)	
At or above median	5.65	8.05	-2.40 (1.82)	
Sample size	717	416		

Source: AVID 66-month main and proxy surveys and PSE administrative data. Baseline survey and school records data to define subgroups.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

It is, however, worth noting from Table 5.9 that offering AVID significantly reduced applications to community college among students who scored at the highest levels on FSA numeracy in Grade 7 and it significantly reduced these students' enrolment in community college and post-secondary education overall (Table 5.10 and Table 5.11). This result suggests that the AVID Center's suggested selection criteria for the class to include middle-achieving students who nonetheless have high scores on standardized tests may not assist those students. Students who met selection criteria for AVID and who were in the top quartile for scores on their Grade 7 numeracy FSA consistently had higher post-secondary enrolment if they were in the control group than if they were offered AVID.

The main analysis does not directly evaluate full exposure to four years of AVID classes. As an additional "subgroup" analysis, SRDC examined outcomes for program group students with high exposure to BC AVID and compared their outcomes to those of control group members, appropriately weighted to account for their propensity to receive high program exposure. A more complete explanation and results appear in Text Box 5.1. The results find no post-secondary enrolment impacts from prolonged program exposure and thus do not change the conclusions of this chapter.

Box 5.1 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. These results take into account the effects on the target group’s outcomes of realistic participant reactions to the program such as attrition and non-compliance, as well as substituting or compensating activities that participants may engage in (for example, not taking another elective). SRDC 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 attempts to answer a different question than the policy question in the main report. It considers 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 analysis uses a state-of-the-art propensity score matching technique that requires the acceptance of more assumptions than the main experimental analysis. The technique, its assumptions and a more complete set of results are provided in Appendix 7. If the assumptions hold, the results point to more complete exposure leading to a modest amplification of the results seen in the main report. However, high program exposure does not increase post-secondary enrolment, as shown in the table below. 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 of Four Years' Exposure to AVID on Post-secondary Enrolment

	Experienced 4 Years of AVID	Weighted Control Group	Impact (s.e.)	
Enrolled in a PSE Institution (%)	64.10	62.70	1.40 (3.60)	
Enrolled in university (%)	27.40	23.70	3.70 (3.20)	
Enrolled in college (%)	42.50	41.30	1.20 (3.80)	
Enrolled in private college or vocational institute (%)	7.30	5.60	1.70 (1.90)	
Enrolled in apprenticeship (%)	3.20	8.50	-5.30 (1.80)	***
Sample size	325	430		

Source: BC AVID Pilot Project surveys and PSE administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Application rates for student financial aid did show some increases as a result of offering BC AVID, but not sufficiently to be statistically significant (Table 5.12). This finding merits some qualifications. First, offering 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.

Table 5.12 Impacts on Financial Aid Knowledge and Application

	Offered AVID	Control Group	Impact (s.e.)	
Know how to get info about student financial aid (%)				
ALL	64.99	59.28	5.71 (3.35)	*
Boys	60.50	57.29	3.21 (5.45)	
Girls	67.79	62.95	4.84 (4.96)	
Parents with high school or less (FGF)	62.63	60.03	2.60 (4.71)	
Parents with any PSE	67.69	60.63	7.06 (5.14)	
Lowest quartile, equivalent family income	70.64	56.97	13.68 (7.93)	*
Upper three quartiles, equivalent family income	62.58	62.48	0.11 (4.08)	
FSA Grade 7 numeracy, per cent score quartiles (%)				
First quartile	64.89	51.10	13.78 (10.99)	
Second quartile	62.67	54.61	8.06 (7.24)	
Third quartile	67.08	58.96	8.12 (8.01)	
Fourth quartile	65.81	67.07	-1.26 (5.55)	
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	62.73	54.75	7.98 (5.40)	
At or above median	66.30	63.21	3.08 (4.69)	

Table 5.12 Impacts on Financial Aid Knowledge and Application

	Offered AVID	Control Group	Impact (s.e.)	
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	64.66	62.88	1.79 (8.49)	
Second quartile	60.92	50.35	10.58 (7.60)	
Third quartile	61.83	57.99	3.85 (7.22)	
Fourth quartile	68.06	60.95	7.12 (5.33)	
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	62.66	54.28	8.38 (4.34)	*
At or above median	66.89	60.77	6.12 (4.95)	
FSA grade 7 writing, per cent score above/below median (%)				
Below median	54.85	64.75	-9.90 (13.02)	
At or above median	66.30	58.87	7.42 (3.66)	**
Sample size	581	328		
Ever applied for gov't-sponsored student financial aid (%)				
ALL	22.83	18.93	3.91 (2.58)	
Boys	20.22	16.49	3.73 (3.95)	
Girls	24.96	21.24	3.72 (3.77)	
Parents with high school or less (FGF)	24.77	18.78	5.99 (3.92)	
Parents with any PSE	21.10	17.73	3.37 (3.92)	
Lowest quartile, equivalent family income	34.84	31.47	3.37 (7.14)	
Upper three quartiles, equivalent family income	18.89	15.37	3.52 (3.02)	
FSA Grade 7 numeracy, per cent score quartiles (%)				
First quartile	19.73	13.45	6.28 (8.95)	
Second quartile	27.09	14.64	12.45 (5.78)	**
Third quartile	19.97	16.10	3.88 (5.50)	
Fourth quartile	24.79	25.18	-0.39 (5.82)	

Table 5.12 Impacts on Financial Aid Knowledge and Application

	Offered AVID	Control Group	Impact (s.e.)	
FSA Grade 7 numeracy, per cent score above/below median (%)				
Below median	22.86	16.14	6.73 (4.07)	*
At or above median	23.34	19.75	3.59 (3.88)	
FSA Grade 7 reading comprehension, per cent score quartiles (%)				
First quartile	20.06	12.65	7.40 (6.74)	
Second quartile	23.89	19.80	4.09 (7.16)	
Third quartile	20.66	13.78	6.88 (4.95)	
Fourth quartile	26.69	21.56	5.12 (4.49)	
FSA Grade 7 reading comprehension, per cent score above/below median (%)				
Below median	22.34	15.81	6.53 (3.41)	*
At or above median	24.97	18.41	6.56 (3.75)	*
FSA grade 7 writing, per cent score above/below median (%)				
Below median	17.83	30.16	-12.33 (12.02)	
At or above median	23.40	18.22	5.18 (2.78)	*
Sample size	584	331		

Source: AVID 66-month main survey. Baseline survey and school records data to define subgroups.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

Discussion

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 may not be 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 impact for the bottom quartile of the Grade 7 FSA numeracy distribution, which is large, positive, but statistically insignificant.

Attrition from the AVID class led 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 main impacts reported 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 (and more than 80 per cent obtained full credit for at least AVID 9), 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 its classes consistently for three or four years. Nonetheless this project has estimated an impact for the subset of the target group predisposed to extended program exposure, and the impact on post-secondary enrolment of receiving four years of AVID for such students is also zero (Text Box 5.1).

Estimates of impacts may be 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 Dunn et al. (2010) and summarized in Chapter 4 of this report. 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 background 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 (Appendix 1). That finding 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.

Program impacts may be reduced due to 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 previous chapter summarized how program fidelity scores were generated for each AVID class cohort at each school. These scores varied 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 the BC schools implementing AVID at higher fidelity according to these criteria. Table 5.13 shows post-secondary enrolment rates were 63.6 per cent for the program group versus 66.1 per cent for the control group. Similarly, 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 BC schools implemented 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.

Table 5.13 Impacts on PSE Enrolment by School Level of Implementation Fidelity and Eligibility Score

	Offered AVID	Control Group	Impact (s.e.)
Enrolled in PSE institution (%)			
By level of implementation fidelity			
AVID essential 3 – school score is below median	55.86	54.81	1.05 (4.87)
AVID essential 3 – school score is above median	63.74	66.08	-2.35 (3.69)
AVID essential 8 – school score is below median	58.50	53.89	4.61 (4.00)
AVID essential 8 – school score is above median	63.08	68.92	-5.84 (4.05)
AVID all essentials combined – school score is below median	57.52	56.58	0.94 (4.49)
AVID all essentials combined – school score is above median	63.57	66.14	-2.57 (4.02)
AVID eligibility scores at time of student's selection			
AVID score at or above sample median	59.35	59.90	-(0.55) (4.09)
AVID score Below sample median	62.49	62.87	-(0.38) (4.25)
Teacher/self-referrals score is 10 and above	61.02	60.14	0.88 (4.20)
Teacher/self-referrals score is below 10	61.43	61.40	0.03 (3.96)
Student's written portion of application score is 8 and above	66.04	62.98	3.05 (3.86)
Student's written portion of application score is 7 or below	56.28	59.05	-2.78 (4.41)
Student's special circumstances score is 0	62.53	63.61	-1.08 (3.51)

Table 5.13 Impacts on PSE Enrolment by School Level of Implementation Fidelity and Eligibility Score

	Offered AVID	Control Group	Impact (s.e.)
Student's special circumstances score is more than 0	58.84	55.76	3.08 (5.24)
Student's oral interview score is 17 or more	63.43	64.16	-0.74 (4.23)
Student's oral interview score is 16 or less	58.93	58.40	0.53 (4.30)
Sample size	717	416	

Source: AVID 66-month main and proxy surveys and PSE administrative data. Baseline survey and school records data to define subgroups.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

The initial selection of students able to benefit from the program may have been inappropriate.

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 Centre's involvement. The agreed-upon approach was implemented with fidelity. 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 2.1 in Chapter 2). 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, yet unobserved manner.

Taking up AVID possibly may have displaced or deferred 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. Dunn et al. (2010) found that offering AVID significantly reduced 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.

Possibly, AVID is offered too late to be effective.

The program implementation dip has already been documented (Table 5.3). In Grade 9, students offered AVID 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, 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) may take more than four years. 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.

Possibly, 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 this chapter 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 existing curricula and other resources they already provide help the group of students they intend to target sufficiently.

The fact that certain alternative explanations cannot be totally ruled out creates opportunity for further learning and program development. The final chapter proposes how lessons can be drawn from additionally 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 BC AVID program produced many positive impacts, including: raised high school engagement, reduced high school dropout 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 impact on high school marks and performance on Grade 12 provincial exams. Thus, offering AVID may not have left students

much 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 study, 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 readily ruled out. Nonetheless, the results appear sufficiently genuine to raise considerable doubts about the effectiveness of the AVID program as implemented to meet the objectives of raising either university or post-secondary enrolment among students selected as “middle-achieving” in British Columbia. The discussion of possible explanations has pointed to several recommendations for program delivery that may prove useful. These include taking into account local prevailing programming and existing supports in deciding whether and how to implement the program, introducing AVID learning strategies considerably earlier, reviewing student selection and promoting higher levels of program fidelity.

Chapter 6: Lessons Learned From the BC AVID Pilot Project

Introduction

This report has presented findings from the BC AVID Pilot Project, which has been testing a version of the US Advancement Via Individual Determination (AVID) program implemented in high schools in British Columbia since 2005. The program was tested as a means 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. This was the first large-scale evaluation of the program using a rigorous random assignment design and the evaluation has found that offering the program did not improve access to post-secondary education among the students selected for the program. The students would have achieved virtually identical post-secondary outcomes if they had not been offered the program. This chapter reviews what has been learned from this project.

Chapter Summary

- **There is inconsistency between earlier evaluations of AVID and the results presented in this report.** The reasons for inconsistency can be categorized into those associated with the evaluation and those associated with the approach to implementation. Given that the evaluations measured different things, it remains an open question whether AVID would generate post-secondary impacts in different settings.
- **The evidence suggests two main areas for changes to the program in order to increase the chances of post-secondary impacts.** These are increasing fidelity to the BC AVID model and adjusting the approach to selection of students eligible to receive the BC AVID program.
- **Several lessons have been learned from the project about selecting and evaluating high school interventions.** Researchers have learned: that it is possible to test the effect of offering a high school elective on student outcomes using a rigorous random assignment design; that those contemplating introducing new programs should not overlook what they take away when offering a new program (the counterfactual); to question whether acting to increase high school academic success is as obvious a policy lever to increase post-secondary access as is commonly assumed; and that it is critical to target interventions appropriately.
- **There is still potential to learn more from the BC AVID Pilot Project.** Logical next steps include: further analysis of the rich datasets the project has collected; an extension of the project to determine longer-term outcomes; developing similar tests of the program in settings where it would be anticipated to be implemented with sufficiently high fidelity among student groups most in need of this type of intervention; and design work on a modified intervention for lower-achieving students.

Explanations for the Impact Results and Implications for Future Programming

The BC AVID Pilot Project was part of a learning process intended to help policy-makers and practitioners tackle important educational challenges that Canada and other countries face in meeting

the needs of today's knowledge-based economy. The goal was to find ways to increase the engagement of young people in post-secondary education. The pilot has provided evidence that AVID in the form implemented was not effective to meet this challenge, at least within the timeframe observed for the selected target group. However, that does not mean that the program is not capable of achieving these objectives or that the project was a failure. The benefit of the extensive data collection and analysis surrounding the project is that from them can be drawn a set of directions for future programming. These are considered in more detail towards the end of this section. But first it is important to position the results in the context of existing research on AVID. It is wise to do this before drawing any conclusions related to changing the way the program is implemented. In order to accept the need to make changes to the implementation of the program (with the hope of generating post-secondary impacts in future) it is first necessary to accept the absence of post-secondary impacts in the BC AVID Pilot Project as a genuine finding and not an artefact of the evaluation.

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 main finding in Chapter 5 of a lack of program impacts on post-secondary outcomes that represent key objectives of the program is surprising, especially given that many previous (non-experimental) studies of the AVID program (e.g. Mehan et al., 1996; Freedman, 1998; Slavin and Fashola, 1998) have concluded that AVID increases post-secondary enrolment among students who are academically "in the middle." There are several types of reasons that can be put forward for why there is an inconsistency between earlier results and those presented in this report. These include two reasons associated with the evaluation and two reasons associated with the approach to implementation:

- Adequacy of the evaluation framework.
- "Spillover"/"contamination"/"resentment" effects attributable to the evaluation design producing unanticipated improvements in control group outcomes.
- Low levels of fidelity to the BC AVID model in the program schools' implementation of the program.
- Inappropriate selection of students eligible to receive the BC AVID program.

It is important to be able to accept the validity of the evaluation results in order to go on to draw conclusions about how to implement the program. Thus the first two reasons are considered below before moving on to consider the third and fourth reasons and program recommendations that would flow from them.

The first reason for differences in findings is the weak evaluation framework used in previous studies, which tended not to compare like with like. The outcomes for an identified AVID group of students were compared to students who may or may not have met the target criteria for selection into the program (the comparison groups could include AVID-ineligible groups such as low-achieving students, for example) and certainly weren't comparable in all characteristics to the group receiving AVID. Furthermore, often previous evaluations considered only AVID program completers when those who persist in the program are a very a select group of those who are targeted for AVID.

For example, Mehan et al. (1996) focused on 248 of 1,053 students who participated in AVID at eight San Diego high schools for the entire three years of the program (1990–92). The selection of

students was a function of who could be located at the time of the study, and it is not known to what extent the samples were biased by this selection method. Of the 248 AVID completers, 48 per cent reported attending a four-year college immediately after high school, 40 per cent were attending a two-year college and 12 per cent were working or “doing other things” such as travelling or volunteering. The researchers noted that these figures compared favourably with the data for San Diego public schools as a whole, where 37 per cent of students in the district went on to four-year colleges. They also found that the AVID completers compared favourably to students who participated in AVID for one year or less; 34 per cent of the latter group went on to four-year colleges. Mehan et al. considered Latino, African-American and lower-income AVID student subgroups also to compare favourably on outcomes against samples of San Diego students with the same ethnic origins and across a range of income strata.

None of the Mehan et al findings are inconsistent with AVID generating impacts on post-secondary outcomes, but they do not prove AVID caused the impacts. There are many competing and equally valid explanations for why these differences emerged that would have little to do with the AVID program. Those who apply for and who are selected into AVID may be a more motivated subgroup of all students. Those who stick with the program will be, by definition, the kinds of students who can make progress within the more rigorous AVID curriculum and thus stay on in the class and the school. Thus, they will differ from the comparison all-student sample that would include students dropping out of their allocated classes and even out of high school. These groups’ outcomes would be expected to differ regardless of AVID. Therefore, the post-secondary outcomes of AVID completers may be attributable to the different characteristics they had before entering the program rather than due to the AVID program itself.

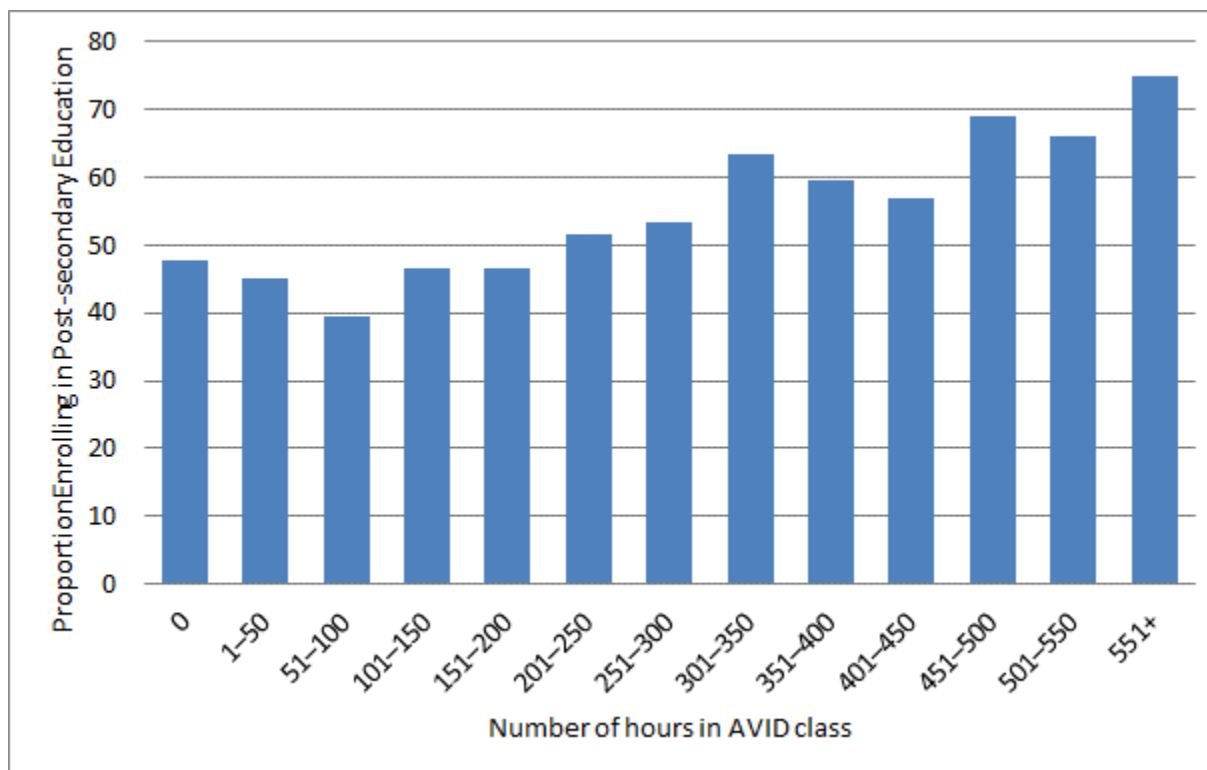
Figure 6.1 illustrates the confusion that can emerge from attributing program impact from the outcomes only of those with extensive AVID program exposure. The data come from the BC AVID Pilot program group and show that those with the longest exposure to the program (more than 550 AVID class hours over four years) were more likely to enroll in post-secondary education. Three-quarters of the subgroup who stayed with the program for 551 hours or more attended post-secondary education, which is well above the proportion (62 per cent) of the control group who attended post-secondary education, as shown in Chapter 5.

At first glance, one might conclude that being exposed to AVID for 551+ hours brought about the 15 per cent difference in post-secondary enrolment for this subgroup relative to the control group. Except, of course, the impact results in Chapter 5 indicate that the control group, who had zero exposure, fared no differently in terms of their post-secondary outcomes than the members of the program group exposed to AVID (which included this subgroup exposed to the program for a long time). A separate analysis of high exposure to AVID, albeit defined slightly differently, drew the same conclusion of no impact from prolonged program exposure on enrolment (Appendix 7). Therefore, in this case, exposure to AVID did not create the differences in post-secondary enrolment shown in Figure 6.1. Those examining the data from this project and attributing causality to AVID would be making an error.⁴²

⁴² Some may wonder why those sticking with the AVID program entered post-secondary education more often. It is hard to know for sure, but there are several earlier measured differences between those who

A weak evaluation framework does not discredit the program. For the students studied by Mehan et al., AVID may actually have had an impact. It is just that that data did not show it.

Figure 6.1 Exposure to AVID and PSE Outcomes: Program Group Members



stayed with AVID long-term and the control group that could plausibly have accounted for differences in post-secondary outcomes that would have nothing to do with AVID:

- In Grade 7, three-quarters of the program subgroup who would go on to stay in AVID long-term scored above the sample median on a standardized numeracy test. In the control group, the proportion was 50 per cent. In fact 50 per cent of the long-term program subgroup were above the 75th percentile on the numeracy test. In the control group, the proportion was 25 per cent.
- In Grade 8 when asked how often the statement “When school work is very difficult I stop trying” applied to them, 43 per cent of program long-term AVID subgroup members said “never.” In the control group, the proportion was 21 per cent.

These differences may or may not actually account for the increased post-secondary enrolment among those who chose to stay with AVID but they do illustrate how the subgroup that sticks with a program can have markedly different characteristics from those of the program’s target group as a whole, even before they come into contact with the program. Furthermore, this combination of characteristics could well be what pre-disposes the subgroup to enroll in post-secondary education, and to persist in programs they choose to do, without the program exposure itself increasing chances of post-secondary enrolment. This is called a “selection effect” because the program selects those pre-determined to achieve the outcome of interest, rather than converting those who would not achieve the outcome into those who would. Outside of an experiment, it is hard to distinguish the effect of the program from selection effects.

Chapter 5 of this report assessed the BC AVID findings critically. It concluded that the main result — offering BC AVID as implemented did not produce post-secondary impacts — appears sufficiently genuine. The assessment involved considering whether there were other evaluation-related alternative explanations for why BC AVID would show no impact in the presence of a program effect. It considered whether attrition from the AVID class led to less exposure to the program than would be sufficient for AVID to have impacts on students' learning outcomes. Researchers dismissed this explanation given the absence of post-secondary impact across subgroups.⁴³ Forty per cent of the target group entered their fourth year of AVID: a special study of those with four years' exposure (Appendix 7) found no impact over an equivalently weighted control group. Even if attrition accounted for the results, it does not point to an easy fix: AVID is a voluntary program and so it must experience attrition in every implementation.

Chapter 5 considered whether delivery of the program “spilled over” or “contaminated” the control group, or whether “resentment” at being assigned to the control group could have produced unanticipated improvements in control group outcomes. There was little evidence of the control group receiving significantly more program components than would normally occur in a BC school. Nor was there evidence of them enrolling more than expected in post-secondary education. In fact, evidence from equivalent non-AVID schools in Appendix 1 finds non-AVID school students much more likely to enroll in post-secondary education than the AVID schools' control group students.

By accepting the above arguments — that AVID as a program has the potential to affect post-secondary outcomes and yet, despite this, the lack of impact on post-secondary outcomes in this implementation of BC AVID is genuine — it becomes possible to move to two conclusions. The first is about evaluation: there is a need to adopt more appropriate evaluation designs in future studies of AVID, so that the impact of the program can actually be determined in different settings. The second conclusion is that the lack of impact in BC must be due in some way to how the program was implemented, which permits recommendations to be made for future AVID programming to improve the chances of it being effective in increasing post-secondary access for BC students. The two main areas for AVID programming recommendations concern fidelity to the program model and identification of the appropriate target group. These are addressed below.

Recommendation: Improve Program Implementation Fidelity?

Chapter 4 concluded that the implementation of the program may have been at levels too low in fidelity to the BC AVID model at many schools. It pointed out that this was despite schools having enthusiastic and committed AVID site teams, being well-resourced and having frequent access to training and monitoring support. Chapter 5 found, however, that within the range of implementation fidelity observed in the study, program impacts did not vary by the degree to which schools implemented AVID successfully. Therefore, one must conclude that quite dramatic changes in the implementation, to levels not seen in any of the schools, would be required to generate post-secondary impacts. Plausibly this

⁴³ Post-secondary impacts were zero on average. To generate a zero average in the presence of a positive impact on any subgroup, such as those with high program exposure, there would have to have been a balancing negative impact for another subgroup. In other words, for the offer of the program to have helped some, it would have to have harmed others. It appears neither helping nor harming transpired.

conclusion implies recommendations specifically to the implementation of tutorials, where no BC school implemented fully conforming AVID tutorials for a sustained period of time. Tutorials were not sufficiently regular nor did they occupy sufficient class time. Perhaps as a result they could not generate the hypothesized impacts on student achievement. Too few tutors were present, too few were existing post-secondary students, and few were sufficiently trained to deliver the tutorial component. Overcoming shortfalls in these areas, so that fidelity with respect to tutorials would be fully and consistently met, could alter program impacts while at the same time proving quite demanding on human and financial resources. Arguably also, the BC school timetable created barriers to scheduling the AVID program. AVID students may not have received enough AVID class time or often enough, for the hypothesized effects from exposure to its curriculum to take effect. This is a difficult problem to resolve without quite dramatic changes to the way schools organize their classes.

Since the ‘less than 100 per cent’ fidelity in pilot schools remains a possible explanation for the absence of post-secondary impacts, there is no reason to discount the (as yet untested) potential for gain that could occur from adhering to the highest levels of AVID implementation fidelity. Raising fidelity is a valuable precaution for AVID schools seeking to achieve post-secondary impacts for their target students. There may be some scope to improve outcomes from changing the intensity of program delivery, although at possibly quite high cost in some areas (such as tutorials) that may prove prohibitive to some districts seeking to take the program on in order to alter post-secondary outcomes.

Recommendation: Improve Student Selection?

Finally, it is worth examining in some detail one potential explanation for the results: student selection. Changing who is enrolled into AVID has the potential to generate impacts because the program might then be offered to students more in need of it. Furthermore it does not represent a particularly expensive change. So this report’s final program recommendations are in this area.

From the outset of the BC AVID Pilot Project, researchers noted that the selection of students eligible to receive the program was problematic. The issue was given considerable thought at the project development phase, and a whole chapter was devoted to the topic 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. Student selection and recruitment followed set procedures with fidelity at all schools: Grade 8 students recruited to the pilot project sample met the “middle-achieving” criteria. Nevertheless, data from the baseline survey showed that the recruited students differed on several characteristics from those typical among middle-achieving students from (generally) lower-income neighbourhoods in US urban areas. Furthermore, Chapter 5 reported the post-secondary enrolment rates for students who met the eligibility criteria for BC AVID. The rate was quite high, even among those 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 AVID has much potential to boost post-secondary enrolment among such students. Note of course that 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: but that improvement that was not seen.

It is possible that AVID simply does not offer “middle-achieving” students in British Columbia any additional advantages compared to those already offered to them within the existing school system. The target group that may most benefit, therefore, might be very different from the group identified by the selection criteria. There is very modest evidence in this report suggesting that somewhat below middle-achieving (i.e. low-achieving) students might benefit more. Low-achieving students are less likely to attend post-secondary education without intervention and much less likely to attend university. This study was not designed to identify students who might most benefit, but results from standardized tests in Grade 7 provide indicators of later post-secondary enrolment. Even within the project’s “middle-achieving” sample, those in the lowest quartile on numeracy or reading comprehension had university enrolment rates below 20 per cent. Those with low reading comprehension enrolled in substantial proportions in community college: those with low numeracy less so. A good starting point for considering students who might benefit from an intervention focused on academic achievement to aid their post-secondary chances and thus who might benefit more from AVID programming would be those struggling with numeracy by Grade 7.

The two main recommendations from the study for those seeking to use AVID to increase post-secondary access for future consideration would be:

- To be prepared to invest sufficiently for full implementation over the long term, and
- To pinpoint selection criteria through careful examination of the profile of students with low propensity to enter post-secondary education.

What Has Been Learned From the BC AVID Pilot Project?

Although the program implementation did not yield the expected impacts, researchers have learned a great deal from the BC AVID Pilot Project, not only about the prospects for using AVID in future, but about the selection and evaluation of school-based interventions for youth in general.

First, it is possible to test the effect of offering a high school elective on student outcomes using a rigorous random assignment design. Such designs are preferred when there is a high risk of confusing outcomes due to selecting specific students into a program with impacts of the program itself. Random assignment ensures that on average the initial characteristics of those who are targeted to receive the program are the same as of those who do not, and against whom long-term outcomes will be compared. Thus, the only difference between the program and control groups is the program offer itself, meaning all differences that emerge over time can be attributed to the program. It can be very difficult to attribute causality to a program without such a design, but randomly assigning program slots is not always possible or easy to implement. The BC AVID Pilot Project has shown that it can be done successfully. Furthermore, in retrospect, the results demonstrate the importance of using the design since the group targeted turned out to have a high probability of achieving the post-secondary education outcomes of interest without the program. By using this design, the project demonstrated that the program did not detectably alter this probability.

Second, those contemplating introducing new programs should not overlook what they are taking away in the process. In research terms, this experience “outside the program” is referred to as the counterfactual. Uniquely, this project showed what control group members were doing when the

program group members were receiving AVID. The electives in arts, technology and applied skills, business, planning and support that AVID students missed out on appear equally important in determining post-secondary outcomes as the AVID class and associated engagement in more rigorous academic study. This is a very important finding given how many key decisions in education involve choosing between one course or program of study over another. Unlike the interventions in Future to Discover (Ford et al., 2012), AVID was not additional to other schooling but in place of some of it. In the active decision to take AVID, there is the more passive but potentially equally important decision not to take another elective. Not taking a subject may have a negative consequence for post-secondary achievement (at least for some students) even at the same time as they experience an AVID effect that is positive.

Third, it is worth questioning whether acting primarily to increase high school academic success provides as obvious a policy lever as is commonly assumed to improve post-secondary outcomes. Offering AVID has produced impacts on academic performance in BC high schools, increased enrolment in more rigorous courses and raised students' engagement in high school without stimulating an increase in their high school graduation or in their post-secondary enrolment in the two years following graduation. This finding has implications for program design and policy founded on the relationship between academic success and enrolment in post-secondary education. As Gladieux and Swail (1998, p. 6.) note: "Research has repeatedly shown that students who take rigorous, progressively more challenging course work are far more likely to plan for and enroll in college." While this fact seems irrefutable, it does not follow automatically that changing the course work of students who were not otherwise motivated or supported to take it on, will automatically convert them into college goers.

Finally, the results point to how critical it is to appropriately target interventions. It was well known when the BC AVID Pilot Project started that the program was not intended to be effective for just any student. Great care was taken to replicate the recommended student selection profile (Dunn et al., 2008). As the authors pointed out (p. 37):

"Since the program could only have its impact upon students not already destined for PSE and who are amenable to its effect, these students represented the target of recruitment and selection for the project. Nonetheless, this group of students would be hard to discriminate from others in Grade 8 since the identifying characteristics — students' response to the program and PSE access — would not have been observed. Selection committees at schools would have to use proxy indicators to identify the students not destined for PSE but among whom the program will change this outcome. The project, like AVID more generally, needed to try to get this tricky task of selection right, based on proxy indicators."

If AVID as implemented would have been successful for a specific group of students, then it follows the carefully designed student selection used for BC AVID Pilot Project did not identify this group. Sadly, AVID was not tested across all students, so alternative specifications for more suitable target groups cannot be recommended. Nonetheless, two findings suggest selection based on *lower-achieving* rather than *middle-achieving* youth, at least in BC.

- Only 38 per cent of those selected for the program did not enroll in post-secondary education.
- The only group for whom a modest signal of positive impact on post-secondary outcomes was detected was the students who performed in the lowest quartile on numeracy tests in Grade 7.

The conclusion therefore, at least as far as BC is concerned, is that the choice of who gets to receive AVID is fundamental to the program's effectiveness. The project findings suggest middle-achieving youth as defined for the project do not represent a suitable target group for a program that is delivered with the fidelity level observed. The suggestion for future selection, based on weak evidence, is to target students struggling in numeracy in late elementary or middle school.

Next Steps

The BC AVID Pilot Project was established by the Canada Millennium Scholarship Foundation to track students' outcomes to the second possible year of post-secondary experience. Although a great amount has been learned, there is still potential to learn more from the Foundation's investment. Logical next steps would include further analysis of the rich datasets this project has collected, an extension of the project to determine longer-term outcomes, development of similar tests of the program in settings where it would be anticipated to be implemented with sufficiently high fidelity among student groups most in need of this type of intervention, as well as design work on a modified intervention for lower-achieving students that might make a difference to post-secondary outcomes in BC and possibly elsewhere.

- **More analysis:** Although the BC AVID Pilot Project has produced three extensive reports, there are still many additional analyses possible that would shed more light on BC students' experiences with AVID and other high school experiences. The unique longitudinal dataset combines parent and student surveys and administrative data from the elementary, secondary and post-secondary school systems. Each student's educational experience can be tracked, whether they were in the group offered AVID or not. The precise operation of tutorials including the actual tutorial time engaged in by each tutor and their class outcomes can be quantified. Qualitative data from students, tutors, teachers and the National Longitudinal Panel of students in BC, NB and MB (Appendix 4) identify needs for different types of support. And their perspectives on the AVID program's strengths and weaknesses can be reviewed. Questions around the optimal sequencing of courses taken (and retaken) as well as exactly how AVID as an elective fits in the schedule of students can be compared to subsequent outcomes. Questions such as the following could be answered: what are the experiences of students whose math assessments improve most over the five years of high school?; what are the experiences of students whose English assessments improve most over the five years of high school?; what were the specific experiences of key subgroups, such as Aboriginal youth or boys, exposed to the AVID program?
- **Longer-term follow-up:** As stated above, AVID in the form implemented was not effective to meet the challenge of raising access to post-secondary education, at least within the timeframe observed

for the selected target group. This is not an unusual finding in rigorous program evaluation.⁴⁴ Were it to continue, the BC AVID Pilot Project could continue to determine outcomes based on its participants' permission to allow examination of their education and tax records for up to ten years from their initial recruitment. There is no guarantee that BC AVID will show a delayed impact, but it remains plausible that early high school changes in students experiences and undetected changes in students post-secondary experiences influence their longer-term outcomes, in a way that longer-term data may detect.

- **Testing AVID in high program fidelity settings:** AVID is implemented in more than 4,800 sites worldwide (mostly in the United States) and has many advocates. It has considerable credibility as an intervention, in part due to strong design features and in part due to its internal program of assessment. Many schools have achieved “demonstration” status delivering the program to what is considered the highest level of assessment standards. Several of these schools have student populations that align more closely with those of large urban centres where AVID originally developed. Logically, an assessment of the potential of the program to increase post-secondary access should be carried out in such a setting, where it would be anticipated to be implemented with sufficiently high fidelity among student groups most in need of this type of intervention. This could provide an upper-bound estimate of the program’s potential impact and a useful comparator for the BC results.
- **Develop a modified intervention for lower-achieving students:** There is still scope to increase post-secondary access in BC through an academic intervention. However, the potential for impact would be expected to be larger if the program could be targeted on lower-achieving students than those targeted for BC AVID, the majority of whom go on to post-secondary education anyway without the intervention. Although the program could be tested as currently designed, it would appear to be in contradiction of AVID training material and student selection protocols. Some features may need to be re-considered such as the potential for stigma in being selected for such a program and the relative importance placed on language arts in the AVID curriculum relative to numeracy. Early career planning may need to become a more focused component to provide the motivation for ongoing participation. A program that worked to support the learning of students who were lower-achieving in Grade 8 might make more of a difference to post-secondary outcomes in BC (and possibly might be applicable elsewhere as well).

⁴⁴ The highly promising Career Academies evaluation was in a similar position in 2003. Early findings from research reports showed that, similar to AVID, Career Academies (a popular high school reform that combines academics with career development opportunities) improved students' average level of school engagement and the rate at which they took expected course combinations (Kemple et al., 2008). For high-risk students in particular, Career Academies increased their likelihood of remaining in school through to graduation, attending more classes, and earning more credits toward graduation. However, experimental impacts were less obvious one year after high school. Just like BC AVID, the program appeared to have zero impact on post-secondary enrolment. However, the study continued and the eight-year findings on Career Academies found that the programs produced sustained employment and earnings gains. The program had not detectably altered post-secondary education participation rates, but it had improved quite markedly the returns students (especially, boys) obtained from their education.

Conclusion

The offer of the BC AVID program produced many positive impacts, including: raised high school engagement, reduced high school dropout 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 study, 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 the AVID program to meet 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, student characteristics and existing supports in deciding whether and how to implement the program, considerably earlier introduction of AVID learning strategies and promotion of higher fidelity in program delivery.

Appendix 1: Did the BC AVID Control Group Provide a Fair Comparison?

The BC AVID pilot project is evaluating a college-preparatory program using a randomized social experiment methodology. The project intended to determine the impact of offering the college-preparatory program on average academic performing students in BC. As is already established in program evaluation literature, any large and systematic bias in the estimation of impacts threatens the validity of the evaluation. Using random assignment ensures that there are no systematic differences between the program group and the control group in any observed or unobserved characteristics. Therefore, any “statistically significant” difference in subsequent outcomes can be attributed with confidence to the program. However, as in any randomized trial, the potential for control group members to receive the program could affect the estimation of the BC AVID program impact.

An earlier report (Dunn et al., 2010) and Chapter 4 of this report considered contamination from the perspective of treatment differences, and concluded that there was no significant spillover of AVID treatment to control group members, except possibly for instruction in the use of Cornell Notes. In this section, evidence for control group contamination is sought from data on the main outcome of the project which is post-secondary enrolment by participants. This analysis uses only enrolment data reported for post-secondary institutions in the province of British Columbia to determine whether control group members achieved this outcome more often than might be expected. BC AVID control group members are compared with students attending schools in other BC schools that had no AVID program (these students will be called the “non-AVID school” group⁴⁵).

If the control group experienced higher levels of post-secondary enrolment than students in non-AVID schools, this would suggest that the control group may have been affected by the BC AVID program in their schools. Although earlier results from the AVID Interim Impact report suggest that overall, the potential to receive AVID strategies and techniques was quite limited, there could be peer effects (such as increased “future orientation” or “motivation” of AVID program group members rubbing off on their fellow students) that altered the control group experience and thus their outcomes, used to derive impact estimates in this report.⁴⁶

Table A1.1 uses administrative records to compare the provincial postsecondary enrolment of control group members from AVID schools with students from non-AVID schools. The results show that the non-AVID school group were significantly more likely than control group counterparts to enrol in any provincial postsecondary institution (a difference of 7.5 percentage points). The students in non-AVID schools were more likely to enrol in a provincial University (an increase of 13.5 percentage points) and less likely to enrol in a provincial postsecondary other than a university (a decrease of 6.2 percentage points).

⁴⁵ See Chapter 2 for more information on the role of non-AVID schools in the BC AVID project.

⁴⁶ See Chapter 5 of the BC AVID Interim Impact Report (Dunn et al., 2010).

Table A1.1 Reported PSE Enrolment of BC AVID Control Group and Students in Non-AVID Schools

	Non-AVID School Group	AVID School Comparison Group	Impact (s.e.)	
Enrolled in any PSE	51.60	44.10	7.50 (2.99)	**
Enrolled in University	27.31	13.81	13.50 (2.40)	***
Enrolled in PSE other than University	26.95	33.18	-6.23 (2.95)	**
Sample size	564	449		

Source: PSE enrolment data from Student Transition Project.

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

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

Rounding may cause slight discrepancies in sums and differences.

Given the absence of 66-month survey data for the non-AVID group, the post-secondary enrolment outcome is derived differently in this appendix from Chapter 5 of the report. Table A1.2 thus also estimates the program impact of enrolling in post-secondary education, for comparison to Table A1.1. Using only administrative data, results are similar to Chapter 5 of this report: there are no impacts of offering BC AVID on enrolment in provincial post-secondary education.

These findings suggest that there is little evidence for control group contamination because AVID was expected to increase post-secondary enrolment for students who received AVID in AVID schools, yet more students in non-AVID school are enrolling in post-secondary education compared to control group members, and program group members, in AVID schools.

Table A1.2 Reported PSE Enrolment by BC AVID Program and Control Groups (administrative data only)

	AVID Group	Comparison Group	Impact (s.e.)	
Enrolled in any PSE	40.24	43.32	-3.09 (2.49)	
Enrolled in University	14.35	13.09	1.26 (1.83)	
Enrolled in PSE other than University	27.22	32.98	-5.76 (2.53)	**
Sample size	790	449		

Source: PSE enrolment data from Student Transition Project.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

Appendix 2: Analysis of Non-response Bias in the AVID 66-month Follow-up Survey

Most of the impacts in Chapter 5 are estimated from the experience of AVID 66-month survey sample respondents. The reliability of these estimates may be affected by selective non-response to this survey (often referred to as “attrition”).

Many circumstances contribute to survey respondents dropping out of a longitudinal study. Individuals may have moved, they may be difficult to contact for other reasons (such as a new job), life events (such as a new child) may take precedence over completing a survey, or they may simply suffer from ‘survey fatigue.’ The AVID surveys are not exempt. An added complication in experiments like AVID is that attrition may depend on the result of random assignment. The usual concerns are that control group members may respond to the perceived ‘inequity’ caused by randomization by refusing to co-operate with the interviewers, or they may simply perceive a lower incentive than program group members to respond to a project that is not providing them with additional services. If follow-up survey non-response varies by experimental group, and non-response is correlated with important determinants of the outcomes of interest, then non-response may introduce some element of bias into results (although the exact magnitude of bias will never be known).

For simplicity, only the main 66-month survey is considered here. In the report’s tables, those who did not respond to the survey have outcome data in some tables based on the responses of their parents (or other person close to them) to a proxy survey fielded immediately after the main survey fieldwork, and based on administrative data which is not subject to survey non-response.

This appendix begins by presenting the 66-month follow-up survey response rates. It then shows the extent of the bias that may be introduced by survey non-response by looking at how survey attrition is correlated with baseline characteristics through a regression analysis.

Survey Response Rate

The results from Table A2.1 confirm that the AVID 66-month survey experienced a non-negligible level of survey non-response (attrition). The response rates are shown in the table, and these vary by experimental group and type of pilot site (random assignment or case study). Overall, the control group has slightly higher response rate (74.6 per cent). The group with the lowest response rate is the waiting list group (66.1 per cent). There is a difference of 15.3 percentage points between random assignment and case study sites.

The impact analysis in this report is based on the program and control group students from random assignment sites only. The response rate for the program and control groups at random assignment sites is almost identical (74.6 per cent control group students and 74.4 per cent of program group students responded to the survey).

Table A2.1 BC AVID 66-month Survey Response Rates

Category	Response Rate (%)	Number of Students in AVID 66-month Survey Sample
Total	72.53	1,511
AVID	72.69	897
Control	74.61	449
Waiting List	66.06	165
Random Assignment sites ¹	74.29	1,338
Case Study sites ²	58.96	173
Random Assignment sites ³	74.45	1,237
AVID	74.37	788
Control	74.61	449

Source: AVID 66-month main survey.

Notes: Rounding may cause slight discrepancies in sums.

1. Includes AVID, waitlist and control group students.
2. Includes AVID and waitlist students.
3. Includes AVID and control group students only.

The Correlation Between Survey Response and Baseline Characteristics

While the response rates were generally quite high for a survey with such a long follow-up period, it is still possible that non-response introduced bias into the impact analyses. In this section, the statistical relationship between responses to the 66-month survey and baseline characteristics are analyzed through a regression approach. Specifically, a binary “survey response” indicator is regressed on the baseline characteristics for program and control groups. What matters for the impact analyses is whether survey response is related to these characteristics more so for the program or control group.

Results in Table A2.2 show that response is not related to baseline characteristics in a differential manner for program and control groups. The list of characteristics that are taken into account in the regression adjustments in Chapter 5 of this report is extensive and includes many factors that are not available in surveys (e.g. social and economic characteristics, high school marks, etc.). In addition, administrative data (not subject to survey response bias) have also been used for some of the principal outcomes of interest. Survey response bias is thus unlikely to have yielded systematic bias in the project’s impact estimates.

Table A2.2 Comparison of Baseline Characteristics, AVID 66-month Survey Sample

Baseline characteristics	AVID	Control	Diff.
Gender of student – Female	0.006	0.013	-0.007
Age of student at baseline	0.010	-0.091	0.101
Aboriginal (ever mentioned)	-0.069	-0.080	0.011
Ever enrolled in an “English as second language” course or class	0.171	0.132	0.040
Ever enrolled in an “English as second language” course or class - missing	0.170	0.307	-0.137
Letter grade average for all classes is "A"	0.307	0.275	0.032
Letter grade average for all classes is "B" or "C"	0.106	0.120	-0.014
Student is expected to attend college	0.132	0.032	0.100
Student is expected to attend university	0.141	0.156	-0.015
Student is expected to attend vocational institute	0.165	0.044	0.121
Student is expected level of PSE is unknown	0.235	0.146	0.089
Family size	-0.002	0.021	-0.024
Single parent household	0.027	0.015	0.011
Family income			
25–50K	-0.012	0.025	-0.037
50–75K	0.064	0.162	-0.098
75–100K	0.107	0.068	0.039
100K and more	0.113	0.032	0.081
missing	-0.032	-0.006	-0.027
Parents highest level of education – any PSE	-0.028	0.029	-0.057
Parents highest level of education – missing	-0.050	-0.060	0.010
Mother expected the student to go to PSE	0.001	0.079	-0.078
Mother expected the student to go to PSE – missing	-0.076	0.057	-0.133
Father expected the student to go to PSE	0.078	-0.035	0.113
Father expected the student to go to PSE – missing	0.097	-0.055	0.152
Sample Size	788	449	

Source: AVID 66-month survey and AVID baseline survey.

Notes: Rounding may cause slight discrepancies in sums.

There were 1,511 students in AVID 66 month survey sample. Analysis in this table include 1,237 student in program and control group in random assignment sites only from the AVID 66-month survey sample.

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

Diff=AVID-Control.

Appendix 3: Impacts of Offering BC AVID on Post-secondary Enrolment by Month

This appendix provides estimates of the project's principal impacts of interest — enrolment in a post-secondary program and also specifically a university program — by month since the program outset (the month prior to the start of Grade 9). The data used are the same as for the cumulative outcomes reported in Chapter 5: survey and administrative data, and the methods used to derive each month impact are the same: regression-adjusted impact estimates of enrolment levels in each month.

The estimates are presented in graphical form to illustrate the pattern of enrolment over time. Typically there is zero or very low enrolment in post-secondary education during the four years of secondary education in Grades 9, 10, 11 and 12. Then substantial proportions of the sample move into post-secondary education in month 49. Both charts shows this pattern for program group and equivalent control group members separately and provide the difference between the enrolment rates in each month as the impact on PSE enrolment in each month as a third line. The charts cannot continue beyond month 62 due to a lack of data so far collected beyond that point.

There are some common features in the charts, including the cyclical pattern of enrolment — with the departures of those ending their program in April/May producing drops in monthly enrolment over the summer months. Typically in these charts, the program group line is very close to the comparison group line, indicating no effect of the program on enrolment in most months following Grade 12. It is worth noting that statistical tests are not shown. The differences are not statistically significant.

The charts report a measure that conflates *access* to and *persistence* in post-secondary education, and so are not included in the main chapters. If the data collection continued, it could be possible to consider impacts on measures of post-secondary completion, such as credentials obtained, but the observation period is curtailed too early for reliable measures of program completion to be compiled.

Figure A3.1 Proportion Enrolled in Post-secondary Education Up to 62 Months After Random Assignment

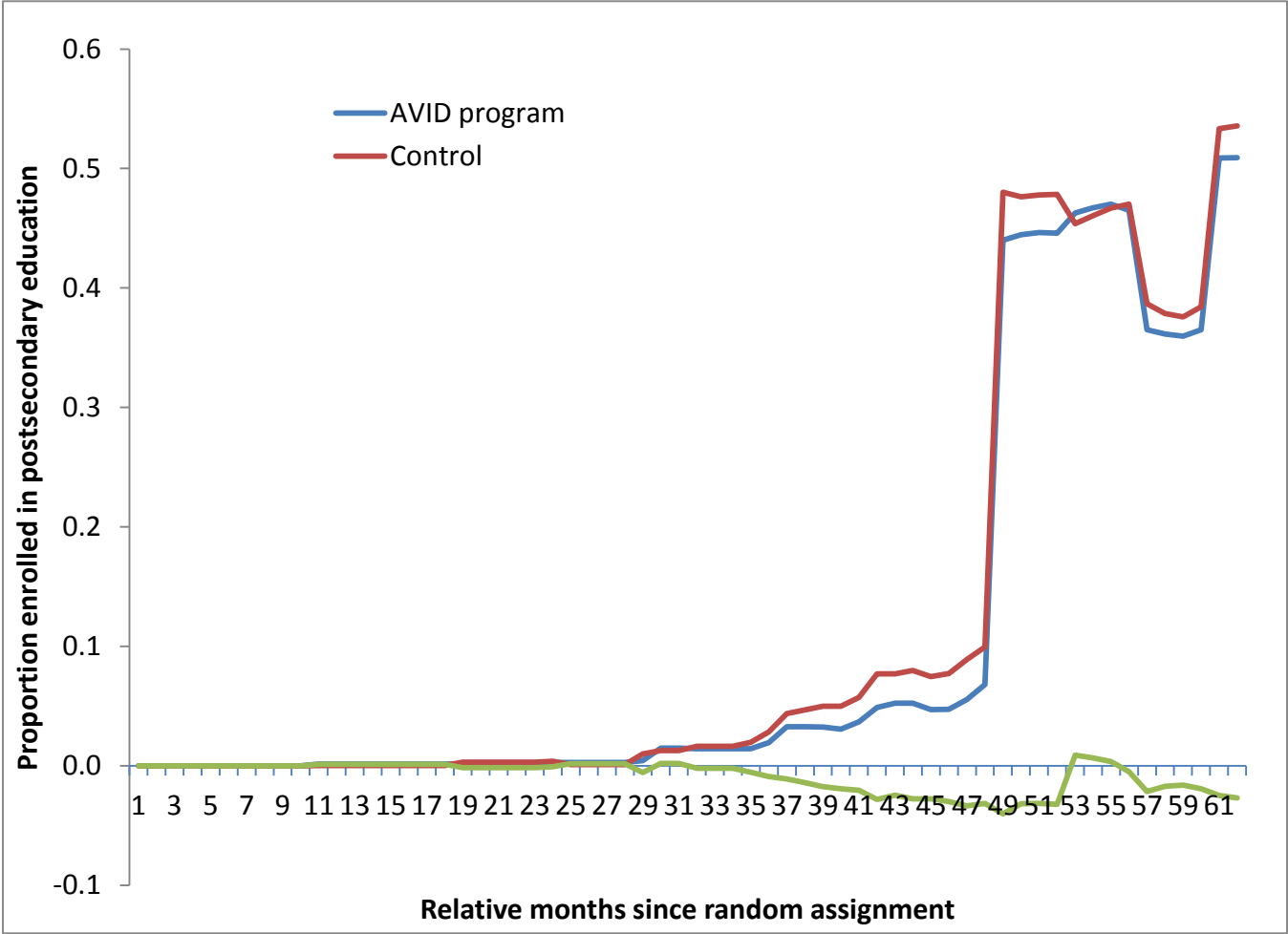
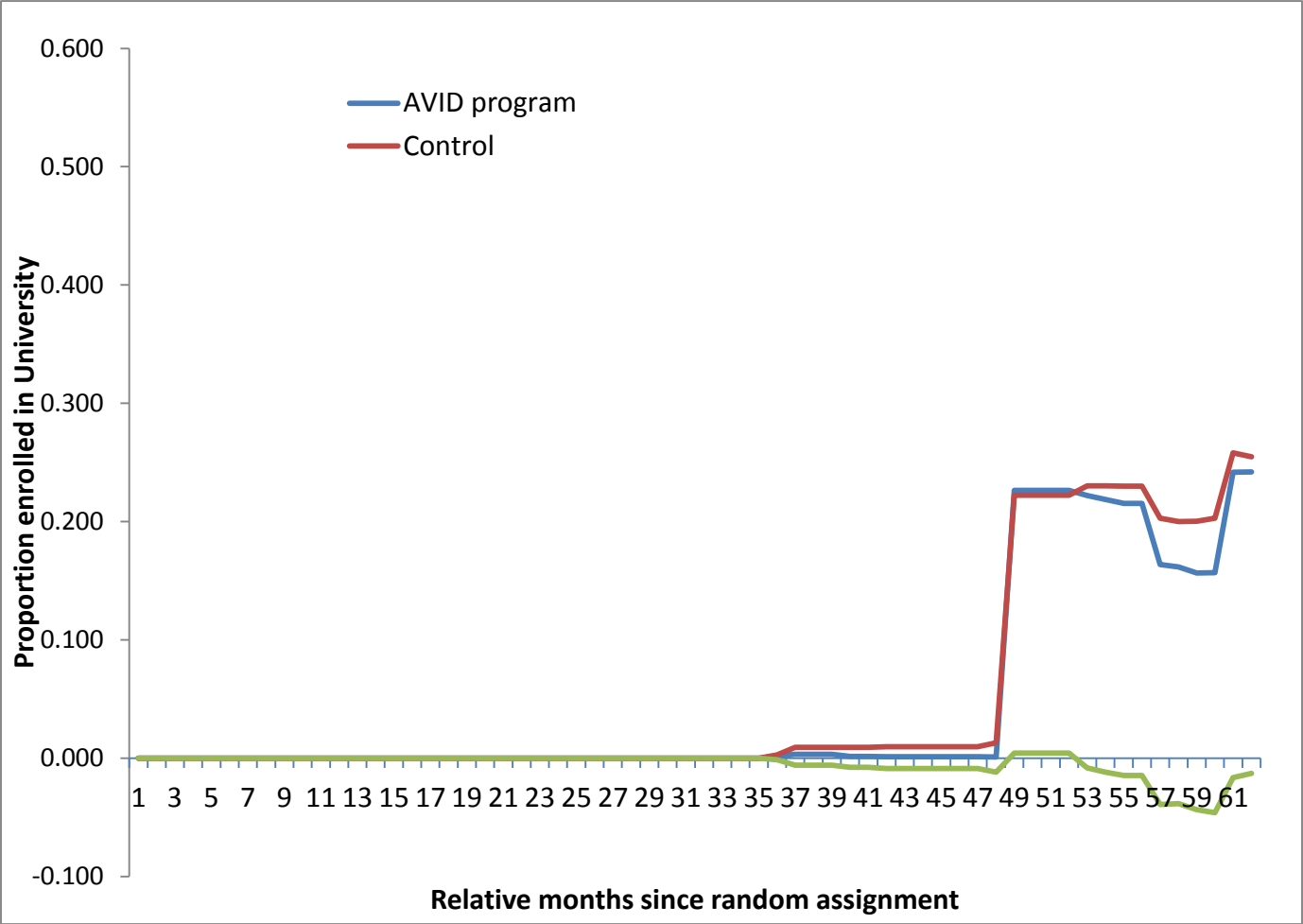


Figure A3.2 Proportion Enrolled in University Up to 62 Months After Random Assignment



Appendix 4: The Role of BC AVID in Students' Decision-making: Lessons Learned From the National Longitudinal Panel Study

Introduction

The BC AVID Pilot Project tests a program intended to alter students' decision-making through their high school years. This appendix draws on results from a special additional study among high school students to shed more light on their process of decision-making to help explain the pattern of impacts seen from different early high school interventions. This unique National Longitudinal Panel Study involves a subset of students taking part in both the BC AVID and Future to Discover (FTD) Pilot Projects (for more information on the latter, see Ford et al., 2012). The main objective of the National Longitudinal Panel (NLP) study was to collect qualitative data to explain how students across Canada discover and assess their post-secondary options during their time in high school and make their choices and plans for post-secondary education (PSE). The focus of the study was on students from families with lower-income and lower parental education since this was the group whose behaviour was anticipated to be most often affected by efforts to increase access to post-secondary education. The NLP sought to help explain the pattern of post-secondary impacts observed in the BC AVID Pilot Project, and to identify possible program enhancements or alternatives for further investigation. This role is important given that BC AVID produced some impacts on student outcomes during secondary school studies but these did not translate into any detectable impacts on post-secondary behaviour.

Summary of Findings

- **High school students in the targeted groups tended to discuss their lives in terms of stark trade-offs between available options fulfilling quite different objectives.** Many were influenced by their current activities and most immediate needs. Nonetheless, they recognized that the decisions they made now had an impact on their future available options.
- **Virtually all students saw post-secondary education somewhere in their future.** Preferences expressed early (for example, in Grade 10) were rarely realized within the period observed during the study, which followed students only to their first post-secondary year.
- **Students did often report decision-making with respect to post-secondary education to be in a sufficient state of flux to be open to influence by BC AVID.** The National Longitudinal Panel study included students who felt that AVID did make a difference to their future orientation and planning. Others faced current or imminent life barriers that they felt prevented them from immediate transition to post-secondary education or already held quite mature career plans involving post-secondary education.
- **AVID offers programming which appears to fill a “gap” in some of the interviewed students' decision-making needs.** Students were in some cases appreciative of the enhancements in learning strategies and organization that AVID promoted, but more often talked about its benefits

in facilitating earlier decision-making for the future in terms of their career planning. Most commonly, students wished they had been motivated to try harder while in high school, which underscores AVID's emphasis on motivation to pursue PSE.

Method

The National Longitudinal Panel (NLP) was established to learn more about how students who may be the target for future programming of the type tested by BC AVID and FTD normally make decisions about whether or not to access post-secondary education. With this goal in mind, control group members and students receiving the career education component of FTD in Manitoba and New Brunswick were included in the study as well as BC AVID program group members. This approach meant that the influence of the programs themselves was not introduced directly during data gathering for the NLP; rather, NLP participants were encouraged to focus on the needs they felt they had in making satisfactory decisions about their futures and to review the resources they had to draw upon and those they might wish for. In these discussions, program group members would be expected to position their experience of AVID alongside the range of alternative influences on their decisions. In this way the study designers hoped to understand the complexity of the decision-making environment in which the interventions were being introduced and their interactions with other influences on students' future planning.

Participants

BC AVID and FTD schools were selected based on language sector, number of participants, available numbers within each subgroup of interest to the study, and geographical accessibility. An amply large group was initially sought to allow the selection of three suitable students meeting the lower-income, lower-education family profile from each school. NLP participants in BC had higher income (and parental education levels) than those in NB and MB. While lower-income, lower parental education students were targeted for the BC AVID NLP, only a few actually met these criteria. Once schools were identified, 36 students (12 per province) were chosen for the first of three panel waves, identified from among the respondents to the BC AVID Cohort 1, FTD New Brunswick (NB) Cohort 2 (C2) and Manitoba (MB) baseline surveys.⁴⁷

When a student was unable to attend an interview, or wished to withdraw from the NLP, a replacement with similar characteristics was selected from a "top-up" sample so at any time over the four years of the study there would be at least 36 students currently participating.⁴⁸ Maintaining the initial NLP study target sample over time was not fully achieved. In total, 49 *different* students participated,

⁴⁷ Within each province students were assigned to four groups of three (called triads). The composition of each was homogenous with respect to sector (i.e., equal representation in NB of English and French students) and program membership (each triad comprised FTD program participants only, FTD control group members only, BC AVID program group members only, or BC AVID control group members only). Within each "homogenous" triad, males and females, a mixture of demographics, and a range of school-related behaviours and beliefs were sought.

⁴⁸ There is no specific gain to the analysis arising from statistical representativeness over time. Such representativeness is impossible to achieve in a small group and not required for gaining an in-depth knowledge of how individuals decide what to do in their futures (e.g., Molloy, Woodfield, & Bacon, 2002).

although only those who took part in at least two consecutive interviews were included in the final analysis sample: 14 from NB — 7 Anglophone; 7 Francophone — 11 from MB and 12 from BC, for an analytical sample size of 37.

Interview Protocols and Projective Techniques

Interview protocols were used to guide the interviews with NLP participants. Each covered topics such as high school life, key influences, family and peer attitudes toward PSE, and participants' decision-making and planning with respect to life after high school. NLP study questions were tailored to grade and students' anticipated stage of career education development. Games, projective techniques and probes were used to enhance interest, promote a deeper understanding of sensitive issues that youth might find awkward to disclose or articulate and to encourage communication on rationales.

Study Implementation

Recruitment of FTD Wave 1 panel students began in January 2006. Each group of three students met in-person with an SRDC researcher for a 1.5 to 2-hour depth interview on school property. Careful planning allowed sessions to take place immediately after the students' last class.

NLP study interviews were conducted in the spring (April–June) of 2006, 2007 and 2008 for FTD and 2007, 2008, and 2009 for BC AVID (i.e. Grade 10, Grade 11 and Grade 12). Telephone follow-up interviews with FTD panel participants took place in the spring of 2009 and with BC AVID panel participants in the spring of 2010. Monetary incentives were offered to students throughout the NLP study to encourage attendance and maintain the sample size over time. A total of 36 recorded “triadic” interviews (i.e., four interviews per province with three students, over three waves) were transcribed and analyzed.⁴⁹

Study Findings on Student Decision-making

As expected, considerable information emerged from students' discussions in the NLP study.⁵⁰ Here a very brief summary is presented drawing from the study findings on: the strategies that students reported using to make their decisions; factors that seemed to influence those decisions; and how well the students were able to put their decisions into action.

Students' Decision-making Strategies

NLP study participants used various strategies for making their decisions, such as: analyzing the resources they would need to invest for a particular possible outcome; considering what would make the people they cared for the happiest; the “lesser of two evils” approach; and choosing the least risky

⁴⁹ Data were entered into the QSR's NVivo 7 computer software program in simple text format, plus 33 individual telephone follow-up survey summaries. Data were reduced into manageable portions and compared with data on the same students from other sources, including baseline, and Grade 12 survey data.

⁵⁰ This discussion presents the subset of NLP findings most pertinent to the purposes of the present report.

of two or more career education alternatives. Participants reported regularly employing a decision-making tactic that involved a trade-off between potential future gains and instant rewards, for example, *[...I've decided to make] lots of money, get a full-time job [...] I'm not going to college [...] I've said marine diesel mechanic [...] but ... it takes quite a while to do [...] you got to go out west and do job trainings and then go back to school for a year and then do something and then go back to school again [...]*.

It was common for the interviewed students in Grades 10 and 11 to report putting off making firm PSE decisions until Grade 12, though some still felt undecided on what to pursue even then.

Factors That Influence Students' Decisions

Numerous factors influenced the decisions that students made over time. Most referred to 'family' as a major influence on their decisions about PSE and career, including circumstances to avoid. Nearly all students were busy with social events, organized activities and employment, which for some had a direct bearing on the *day-to-day* decisions they were making in connection with academic life (e.g., choosing not to do their homework in order to catch up on sleep). Participants from lower-income, lower-education families especially perceived fewer options for supporting themselves after high school and financing their PSE than other participants, and this had a direct effect on some of the decisions this group was making. Other students struggled with ongoing procrastination, disorganization, low motivation, confusion, and fear in connection with final decision-making about life after high school. A few students also muddled through unexpected and important life circumstances, sometimes referred to as "chance" events,⁵¹ such as ill health, which in turn influenced some of the career education decisions they were making in high school.

Based on several reports, BC AVID NLP students seemed to have a broader range of options than FTD NLP students for supporting themselves and financing their post-secondary education after high school, through familial resources, savings, loans, bursaries, windfall gains, and scholarships. BC AVID NLP participants also appeared to experience less pressure to make firm decisions about what to do immediately after high school than FTD NLP students, and in a few cases were actively encouraged to travel.

Students' Abilities to Act on Their Decisions

NLP study participants commonly aspired to pursue *some* form of PSE, at *some* point in the future. It was, however, rare for participants to report enrolling in the PSE program they had aspired to enrol in during Grades 10 and 11, due to the evolving nature of their career education plans over time. When nearing the end of Grade 12, decisions made only recently in connection with post-secondary life seemed more pertinent. Regardless of grade, participants had the capacity to make decisions about life after high school and by the time of the NLP study telephone follow-up survey (a year after graduation), a little over half of them had successfully enrolled in a PSE program either full or part-time. In fact, the majority of BC AVID NLP students (eight in total) *had* successfully enrolled in a local post-secondary education program. The remainder of BC AVID NLP participants, who had not yet decided what to do

⁵¹ See Bright, Pryor & Harpham (2005), and Hirschi (2010).

with their lives after high school, were working part-time, travelling and/or contemplating various career and education options.

Do NLP Respondents' Experiences Suggest BC AVID Is Needed?

This section extracts the main findings on NLP study participants' experiences with *BC AVID*, including barriers that the program may help high school students overcome, such as those relating to academic engagement, cognitive perspective, misperceptions on various topics related to school and career and feelings of apprehension, confusion, and disorganization.

During NLP study discussions, a few participants felt that they benefited from the strong emphasis in AVID on improving their academic skills.

It's pushing us to be more organized. I definitely found that.

Surprisingly, given the effort school teams invested in establishing tutorial schedules, only once during the NLP did a student reflect positively on the role of tutorials.

It did [help] in Math where I would use Cornell [notes]... organizing your binder for example, it was common sense but no one ever did it. We had constant binder checks at [high school] which ... were good and tutorials were good and then we also learned techniques in order to test ourselves for quizzes and tests, which helped...that part was good.

In general, however, the emphasis on learning strategies were not as strongly valued as other aspects of the program. Some felt they didn't need them. Others felt they liked the strategies but learning them had little overall effect on their academic achievement:

Cornell notes, I think it was a good way to take notes but overall that didn't help me in upgrading my course marks or anything else too much.

Students by and large liked their high school teachers, although a few spoke about their high school teachers in a negative light. One student clearly articulated the importance of having a supportive teacher throughout high school due to AVID, something that was not always otherwise on offer.

The AVID teachers were great, they would answer any questions you had...I always took what they said to heart...I wouldn't shove it off right away, I'd think about it and pursue it. For example, the Grade 12 AVID teacher, he told me to go actually to the counsellors at [community college] to check out what [I] wanted to do, so I took a day off and ... went to go check out all of the courses and I had a meeting with the counsellors there.

The majority of students seemed to enjoy being at school, saw value in learning and aspired to graduate from high school 'on time', mirroring findings from the baseline survey (Dunn et al., 2008). An unanticipated finding was the number of NLP students who reported feeling extremely stressed, overwhelmed, pressured or exhausted with maintaining peer groups during high school while attempting to manage work and academic life, including homework and completing applications for scholarships.

Not surprisingly, major school influences were often peers, although more from a social perspective than academic (some students actually reported feeling reluctant to speak with friends about

educational matters so as not to appear “stupid”). According to the NLP data, peer relationships were a very important source of support for students during high school.

Different barriers to effective PSE decision-making were revealed during NLP study discussions; many were of a kind that AVID might help high school students overcome. One specific barrier concerned students’ cognitive perspective. NLP participants would readily admit that they were not thinking about their futures or making important decisions about post-secondary life during the early stages of high school.

NLP participants were largely ‘present oriented’. Many students in Grade 10 believed that Grade 11 or Grade 12 was a more natural time to begin setting concrete goals for their future. During Grade 11, many students reported that Grade 12 would be the ideal time to try harder in high school and set one or more ultimate goals about their futures. Time horizons were correspondingly short: planning activities in Grade 10 had mostly to do with make thoughtful selections on courses to take in Grade 11; still, some NLP participants in Grade 10 admitted during their interview that they had not thought that far in advance.

It definitely had me start thinking about it a lot earlier than a lot of my friends who weren’t in [AVID]...so that helped...I think they just never really thought about it...they’re thinking was: ‘We’re in high school right now why do we need to be thinking about what’s happening later?’ It’s more about living in the moment mentality I guess whereas AVID encouraged planning for the future.

NLP findings revealed that Grade 10 participants had the *capacity* to orient themselves toward the future; although students were not necessarily focused on planning for post-secondary education during Grade 10, they certainly seemed able to speak about what would be required of them in order to achieve various high school and post-secondary goals. The majority of NLP participants were able to project themselves into the future and anticipate the major milestones that were required to reach their preferred post-secondary educations and careers. When asked to provide details on how to get to these futures, students were able to share a fairly linear set of goals; NLP participants clearly understood that in order to transition to post-secondary education they needed to graduate from high school with the appropriate number and selection of courses and with satisfactory grades, choose a preferred program, successfully enrol in that program, and have sufficient funds to pay for their post-secondary studies. Moreover, in order to achieve their preferred career, they needed to successfully complete their chosen post-secondary education program. One student in AVID felt time spent in AVID classes had helped him by the time of his Grade 12 interview to narrow down his focus to becoming a “management consultant” which he viewed as more suitable than the earlier targets he had for his career trajectory:

I wanted it to be dentistry but then I started really looking into it because of our AVID classes. We’ve been going on [Career and PSE search web site] and going to [community college] and seeing what’s available and how to get there and then I found, well, “Rapper” kind of sounded like a joke after to me.

In general, AVID did not feature frequently as a topic in program group members’ discussions about what brought them to where they were by Grade 12 (or after leaving school). When asked specifically about the role of AVID, program group members talked much more frequently about the program’s role in helping them choose appropriate post-secondary and career trajectories and to locate funding. They

did not as frequently reflect positively on its promotion of learning strategies (other than organization skills) or on engaging in more rigorous programs of study.

AVID ... really helps me indicating what I want to do in the future and organizing.

It's there to help you find scholarships and ways to get into college and there's actual support systems.

AVID in general I don't believe was too helpful towards my actual courses.

The NLP found, overall, high school students were able to look forward in time to identify the necessary steps for securing a preferred career, and likewise, were able to look back in time to identify areas where they might have contributed greater effort or made improvements towards achieving their preferred post-secondary futures; when “living in the present”, students were caught in a tug of war between doing the things that felt good at the time and sacrificing those good feelings in the name of a better post-secondary future (e.g., sleeping instead of doing homework; socializing instead of studying; spending money on entertainment instead of saving; procrastinating instead of making firm decisions about their future). Fundamentally, AVID’s strong emphasis on motivating students to pursue PSE seems appropriate, even if it was difficult to achieve. When asked what they would change if they could go back in time, almost all NLP participants in later grades and following high school completion reported that they would have (1) tried harder in high school and (2) saved more money for post-secondary education.

Making me more conscious of the decisions that I have to make...there would have been some at this point that I wouldn't have even thought of: ...scholarships would be one, 'cause I remember we had to look over a whole bunch of scholarships, and then budget, I remember we had to work out a budget...that's actually helpful because I've had to work out a few budgets of my own.

An observed benefit of AVID therefore was that it appeared to kick-start program group students’ thinking and planning for their futures, thereby elongating their future time perspectives.⁵² It achieved this by supporting students’ planning efforts early on in high school, by providing ample opportunity for students to employ and hone such planning skills and thereby gain confidence in the decisions they were making over time.

Insights From NLP on the BC AVID Impact Results

This section considers the extent to which NLP findings shed light on the principal findings from the main report on the AVID’s impacts on changing students’ behaviours and outcomes. As previously reported, AVID did have some impacts on high school achievement but did not in the end raise PSE application or enrolment rates. Also, fewer than half those selected into AVID stayed with the program for the full four years.

⁵² An elongated future time perspective is when individuals hold an orientation toward the future, resulting in enhanced drive and accomplishment, and longer-term goals (e.g., four years or more into the future) when compared to individuals who do not extend themselves as far into their futures (e.g., Lens & Moreas, 1994).

It appears that several LP participants entered the AVID program with at least some belief that it would make a difference, but some became disillusioned.

I found myself thinking like what is [AVID] going to be doing for me but like I know that in the long run it will help.

It was only up until Grade 10...I'd only gone in it originally in Grade 9 'cause they said they would have Math help. It totally switched over to English and then basically...they taught me how to write notes in a certain way and all these different strategies and that was kind of all I got out of it and then it was just everyone meeting as a group and discussing this. I'm like, "I'm not really getting anything out of this"...

Even though AVID is commonly described as a "learning to learn" program due to the many learning strategies that it promotes, it appears that students more rarely placed a high value on those components. At least in reports during Grade 12, they were much more likely to appreciate (and want more from AVID) from its support for their career decision-making.

I didn't really feel like I was learning a lot in the AVID thing... I learned the great note taking skills of the Cornell style which are really helpful, but that was kind of all I feel I got out of it.

Honestly, I don't think it was that helpful. I don't know if it's just the way we got it at our school or what but I thought it was kind of a waste of time...in general, I remember focusing on using our agenda and getting marks for like using your agenda and writing everything down; I still don't use my agenda.

I think AVID should more concentrate less on studies and more on future development, as in after high school, because I think it benefits us more that way.

I believe AVID has helped me...thinking back ...the [turning] point [in] my career was going to those universities and on those [web] sites and researching. If I hadn't done that I think I still would have been doing dentistry and...I would have been a little late considering all the money I would have spent and the wasted time in high school.

This strong NLP result suggests that AVID-type programming may in fact have had a more of a positive impact if it had focused more on assistance with the decisions students were making about PSE and career options.

However, another well-publicized feature of AVID that some study participants also seemed to respond to positively was the way it brought them into a new peer group that was mutually supportive.

That little class became...one little family in the school...it was each others' support system throughout four years...everybody would help you out.

The findings in the main report can appear somewhat counterintuitive to those familiar with AVID students, who see their development and advancement over time. However, the NLP sheds light on how (and possibly why) it is possible for there to be little impact on key outcomes at the same time as students improve. In the absence of interventions, most NLP participants (in program and control groups in all provinces) reported that they performed harder academically in later grades than in earlier grades. Reasons for this shift in behaviour varied. Students said they procrastinated less and were increasingly motivated to put in effort with increasing complexity of course content in later grades. In turn, this appeared to be related to taking preparatory courses for post-secondary education

and having an appropriate and sufficient selection of courses, combined with the achievement of requisite grades. Of course, it could be possible to confuse this change over time with the program having an impact on students' effort, in circumstances where AVID was implemented without a control group against which to compare the outcomes of AVID students.

One explanation in Chapter 5 for the absence of longer-term impacts is the need for AVID students to not take another elective (or to sacrifice a spare) in order to participate in AVID. Possibly, the alternate elective course of activity that students have to give up generated an equivalent benefit for control group students. One AVID student felt AVID took him away from his other studies.

I don't think I learned much from it; I could have benefitted way more had I taken other courses or had time for a spare... then I could have focused on my other courses.

Still, plausibly the offer of AVID produced impacts on outcomes that this project has not (yet) measured. Students may have made more confident or appropriate PSE and career choices, or may be equipped with a better range of learning strategies and skills to tackle post-secondary education. This could lead to situations where program and control group students look to be in ostensibly similar places on measured outcomes but on unmeasured outcomes — such as feeling organized and confident — AVID students may still be better off.

[If I hadn't taken AVID] I think I'd be where I am right now, but just more confused and not sure of what I'd be doing. It really did help to figure out what I want to do with my life.

Implications of the NLP for Future AVID Programming in BC

This section provides some suggestions for AVID programming program enhancements that emerge from NLP evidence.

Importantly, as in findings from the main report, future implementations of the program need to consider very carefully who should be selected into the program. It may not be efficient to select a group of students who have a 60 per cent probability of going on to PSE even in the absence of AVID. One difficulty may be the emphasis placed in selection on selecting students for AVID who are already motivated to attend PSE. The NLP found students who were more decided on PSE and their career early in high school were more likely to pursue their post-secondary aspirations, regardless of the programming they were offered. NLP participants nearly always aspired to pursue some form of PSE, which meant that AVID programming at best could only act as a catalyst for students to act on those existing aspirations and perhaps improve the specific choice within PSE they aspired to pursue. The program had few opportunities to change those who would not go to PSE into those who would.

As a way of enhancing the cost-effectiveness of AVID in BC, it may be worth targeting students who do not have well-developed career plans following their first year of high school. Screening of this sort would allow the program to devote its resources more efficiently to target underrepresented students in the PSE system who might also most benefit from direct PSE and career guidance and support as offered through AVID programming. These may also be students who also have more to gain from embracing the program's learning strategies.

Likewise, there is some limited evidence from the NLP that high school students who exhibit resourcefulness in their plans to finance their education and who have determination and opportunities to enact these plans (such as being able to gain part-time employment during high school to save money for PSE) may be on track to pursue PSE regardless of any AVID programming they are offered. So, future AVID programming in BC could focus more on lower-income individuals with little information and misperceptions about different options for financing their PSE or on those who are especially debt- and risk-averse.

To have an impact, efforts within AVID to help the students it targets need to be made while they are still in attendance. Given findings from the main study and the NLP about the attrition of AVID students from the program by Grades 11 and 12, some key program components could be brought forward to Grade 9 or 10 to better reach all those in need.

- One such possible improvement to the AVID program is to build in more detailed and targeted sessions earlier on course selections in connection with preferred post-secondary pathways. This would be a way to promote more effective career education decisions and facilitate successful PSE planning and transitions. This might be best achieved by bringing the AVID counselor into a class dialogue on PSE eligibility as early as Grade 9 so that the information being received by students is more cohesive, complete, and accurate.
- Another stems from several NLP study participants appearing overwhelmed by application processes in general. Study participants — particularly control group members — appeared ill-informed about loans and grants, poorly equipped to assess earnings relative to specific careers (especially relative to student aid repayment scenarios and timelines), and lacking strategies to employ to navigate post-secondary transitions effectively and plan for them financially. Some form of additional assistance seems key — potentially available through earlier AVID programming — especially with regard to financial aid and PSE program applications, and what to expect and do once applications have been reviewed, accepted, or rejected.

More generally, while students appeared to accept the need to acquire new learning strategies and the focus on organization that AVID promoted, they did not always readily appreciate the value these added to their learning. At the same time, looking back, they wished they had worked harder, earlier in school. When they talked about the benefits of AVID it was more often about its role facilitating earlier decision-making for their career planning or motivational activities, such as campus visits. It may prove necessary to shift the time devoted to these components during Grade 9 and 10 class time so that AVID students become motivated rather earlier to learn how to work more productively and simultaneously to stick with the program for longer.

Appendix 5: Project Criteria to Assess Whether Schools Met Requirements for Delivery of the BC AVID Program

This Appendix provides a summary of the extent to which class cohorts in BC AVID schools met the requirements for each AVID Essential based on BC AVID's interpretation of the 11 AVID Essentials. The summary includes: an outline of each Essential as defined by the AVID Center, the BC AVID criteria for meeting the requirements of this Essential, and a statement outlining the extent to which the criteria were met.

Selection: AVID student selection must focus on students in the middle (with a GPA of 2.0 to 3.5 GPA as one indicator) who have untapped academic potential and would benefit from AVID support to improve their achievement and post-secondary preparation. [Essential 1]

Students received the offer of BC AVID if:

- *They were selected for the four-year program using the procedures described in the project operations manual.* All Cohort 1 and Cohort 2 students were selected according to the criteria set out in the procedures in the project operations manual.

Participation: AVID program participants, both students and staff, must choose to participate. [Essential 2]

Students received the offer of BC AVID if:

- *Students enrolled in the four-year program have signed contracts indicating voluntary participation.* All Cohort 1 and Cohort 2 students voluntarily signed contracts with the school to enroll in the four-year program.⁵³
- *Their AVID elective teacher(s) have chosen to participate in the program.* Evidence is available that all AVID teachers participated voluntarily for each class in each year with four exceptions (all at Random Assignment sites).⁵⁴

⁵³ Before signing the contract, students received adequate information and suitable guidance from AVID staff member(s) (and in some cases, a trained paraprofessional) to ensure sufficient understanding of the contract.

⁵⁴ For each exception, no evidence was available as there was turnover of AVID teachers and replacement teachers were not interviewed.

Full implementation: The school must be committed to full implementation of the AVID Program, with the AVID elective class available year-long and within the regular academic school day. [Essential 3]

Students received the offer of BC AVID in a given year if:

- Their AVID elective class is scheduled year-long and within the regular academic school day timetable (periods where multiple academic classes are offered). All AVID classes were held within the regular academic school day with the exception of one class. All AVID classes were year-long with seven exceptions involving Grade 12 classes. The primary reason for scheduling AVID as a one-semester course was to assist students in scheduling their required academic classes.
- Their AVID elective class has sufficient students for multi-student course-based tutorials to run.⁵⁵ Most cohort classes experienced difficulty meeting this requirement.
- Their time in the AVID elective comprises at least 25 per cent devoted to the AVID curriculum, at least 25 per cent devoted to tutorials, and at least 10 per cent devoted to motivational activities.⁵⁶ Sixty-nine per cent of BC AVID classes did not meet this requirement.

Rigour: AVID students must become enrolled in a rigorous course of study that will enable them to meet requirements for university enrolment. [Essential 4]

Students received the offer of BC AVID in a given year if:

- At least 90 per cent of the students enrolled in their four-year program were enrolled in a set of courses that would enable them to meet requirements for enrolment at a BC university. Almost 82 per cent (81.8 per cent) of BC AVID class cohorts met this requirement.

⁵⁵ Each student in the four-year program has at least two others in their elective class with whom they share current or previous experience of the same academic courses.

⁵⁶ Discussions with the project leader established that hours of programming per se should not be the program defining issue, although it may be a concern for teachers attempting to cover the full AVID curriculum. It is unrealistic to expect AVID to have more time devoted to it than any other course. It is appropriate for the time devoted to it to be the same as for other courses. The *continuous* availability of AVID throughout the school year to support participation in other academic courses at the school is the important feature when deciding how to schedule AVID and deliver the AVID curriculum.

Writing: A strong, relevant writing curriculum must provide the basis for instruction in the AVID elective class. [Essential 5]

Students in the class must have received at least four of the five 'writing' criteria listed below during their regular AVID class time in order for that class cohort to meet the requirement in a given year. Approximately one-fifth (21.5 per cent) of the class cohorts did not meet the overall criteria. Results for the individual criteria are outlined below:

- Students spend time at least twice every two weeks receiving instruction in writing-to-learn strategies and/or using the AVID writing curriculum. Approximately 10 per cent (9.8 per cent) of class cohorts did not meet this requirement.
- Students spend time receiving instruction in the writing process and/or participating in timed writing. Approximately 11 per cent (11.47 per cent) of class cohorts did not meet this requirement.
- Students produce or use Cornell Notes and/or textbook notes at least twice every two weeks; they receive training in their use, and they are graded on them. Approximately 20 per cent (19.7 per cent) of class cohorts did not meet this requirement.
- Students produce or use reflections (such as "AVID learning logs") for their learning at least twice every two weeks and they are graded on them. Approximately 12 per cent (12.3 per cent) of class cohorts did not meet this requirement.
- Students spend time twice every two weeks receiving instruction in reading-to-learn strategies to access rigorous curriculum, including connecting to prior knowledge and/or understanding text structure. Approximately one-third of class cohorts (34.4 per cent) did not meet this requirement (the majority of this occurring at the Grade 9 level).

Inquiry: Inquiry must be used as a basis for instruction in the AVID classroom. [Essential 6]

Students must have received at least three of the four 'inquiry' criteria listed below during their regular AVID class time in order to meet this requirement in a given year. Almost one-fifth (19.8 per cent) of class cohorts did not meet this overall requirement. Results for the individual criteria are outlined below:

- *Students participate in the AVID tutorial process.* Approximately 16 per cent (15.6 per cent) of class cohorts did not meet this requirement.
- Students include questions in the left-hand column of their Cornell Notes and/or on their Tutorial Request Forms and are graded at least monthly for inclusion of these questions. Almost 19 per cent (18.9 per cent) of class cohorts did not meet this requirement.

- Students develop Costa's Level 1, 2 and 3 questions (or Bloom's levels 1–6) for their notes and tutorial group discussions. Almost 14 per cent (13.9 per cent) of class cohorts did not meet this requirement.
- *Students take part in philosophical chairs discussions or Socratic seminars.* Almost half (48.4 per cent) of BC AVID classes did not meet this requirement.

Collaboration: Collaboration must be used as a basis for instruction in the AVID classroom.
[Essential 7]

Students must have received at least two of the three 'collaboration' criteria listed below during their regular AVID class time in order for that class cohort to meet the requirement in a given year. Almost 97 per cent (96.7) of BC AVID class cohorts met this requirement. Results for the individual criteria are outlined below:

- Students collaborate to solve problems at least twice every two weeks. Only four (3.3 per cent) of class cohorts did not meet this requirement.
- Students collaborate on projects such as research papers, presentations, and/or community service. A full 26.2 per cent of class cohorts did not meet this requirement.
- *Students participate in collaborative study groups.* Only three (2.5 per cent) class cohorts did not meet this requirement.

Tutorials: A sufficient number of trained tutors must be available in the AVID class to facilitate student access to a rigorous curriculum. [Essential 8]

Students received the offer of BC AVID in a given year only if the following applied to regular AVID class time:

- Students take part in the AVID tutorial process at least twice every two weeks.
- At least half of the tutors present at tutorials at least twice every two weeks (a) have received at least initial tutor training in AVID methodologies — and if the 16 hours are not complete there is a plan in place to complete the training — and (b) demonstrate the AVID methodologies in their work with students.
- The student/tutor ratio in the AVID elective class is no higher than 7:1.
- Students in the class use tutorial request forms.

Two-thirds of class cohorts did not provide the minimum number of tutorials required for BC AVID (even though the BC requirement was a more 'relaxed' requirement of at least 17 tutorials — but

spaced evenly — per school year rather than the twice weekly recommended for certification by the AVID Center). When adding in the additional requirements for this Essential (7:1 student to tutor ratio, tutor training, and the use of tutorial request forms), only one cohort class (in a Grade 12 year) met the tutorial requirements.

Data: AVID program implementation and student progress must be monitored through AVID Center Data System, and results must be analyzed to ensure success. [Essential 9]

Students received the offer of BC AVID only if:

- At least 70 per cent of students enrolled in the four-year program complete coursework and provincial examinations required for graduation in examinable courses. All class cohorts met this requirement.

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.⁵⁷ Commitment to ongoing participation in AVID staff development is also required. [Essential 10]

Students received the offer of BC AVID in a given year only if:

- The teacher of their AVID elective class has attended AVID Summer Institute at least once. Any substitution with non-AVID trained teachers must be unplanned and rectified quickly such that an AVID-trained teacher is in place for the majority of every year. All class cohorts met this requirement with two exceptions.
- At least another six members of the site team must have attended AVID Summer Institute or Path training at least once. All class cohorts met this requirement with one exception.

⁵⁷ 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.

School site team: An active interdisciplinary site team must collaborate on issues of student access to, and success in, rigorous post-secondary preparation courses. [Essential 11]

Students received the offer of BC AVID in a given year only if:

- The AVID site team had developed and written a site plan and was implementing it. All BC AVID sites submitted a site plan for each year (although the level of implementation was not verified).
- At least core members of the AVID site team meet quarterly or more frequently and collaborate on planning and logistical issues and awareness of access issues to rigorous curriculum and advanced courses. Approximately one-quarter (24.6 per cent) of class cohorts did not meet this requirement.

Appendix 6: A Cost Analysis of BC AVID

Introduction

A cost and benefit analysis (CBA) was originally included in the research plan for the BC AVID pilot project. Since the preceding chapters (notably Chapter 5) in this report have found the measured impact of the intervention to be close to zero on key economic outcomes such as high school graduation and post-secondary enrolment, the benefit analysis of a CBA will not prove informative. However, the cost information of the program operations may still be useful to policy-makers and practitioners interested in operating the program. A full cost and benefit analysis could be possible in the future if long-term benefits (such as on post-secondary persistence, post-secondary credentials or labour market outcomes) were subsequently realized. For example, some educators may be interested in budgeting to replicate the program or re-implement the program with some modifications. This appendix evaluates the costs of BC AVID to the government over the project period. It provides information on the costs of various components of the intervention as it was implemented.

The methodology and framework applied to this cost analysis is outlined in the first section. Readers who are not interested in the technical aspect of the cost analysis may skip the first section. The second section presents the various components of the cost analysis, including a detailed breakdown of the main implementation costs at the government level and the site level. The third section discusses the cost per program participant as well as the cost per completed student. The appendix concludes with a discussion on interpreting the findings.

Chapter Summary

- **Over half of the total cost of BC AVID implementation went towards staff training and conference/meeting participation.** The program could be made more cost efficient if the trained teachers taught more students within the school and/or more cost-effective technologies for knowledge sharing were used more often.
- **Despite decreasing program participation in later years, the average cost per completing student was not substantially higher than the average cost per enrolling student.**
- **Compared to random assignment sites, case study schools spent more on post-secondary institution field trips and motivational activities with students and their staff also spent more on training and conference participation on average.** The higher average cost among case study schools was related to the program's smaller scale, with only one cohort, compared to most of the random assignment sites that had two cohorts. Case study sites were also somewhat more remote geographically.

Methodology

Several aspects of the design of BC AVID have implications for a cost analysis. First and foremost, participation in BC AVID was voluntary. Program group participants could opt for other classes instead of the AVID class. As a result, the numbers of students taking the AVID class decreased over the

program period, which meant that some variable expenditure would have been higher if participation had been compulsory, but per student costs might have decreased. Second, there was a large variation in the types of class activities in implementation. Precise cost estimation of each type of activity would only have been feasible if there had been a very complex information system to keep track of all activities and accounting. Such an information system would have been costly to implement. Therefore, the cost analysis only focuses on high-level cost decomposition. Finally, many program staff (such as AVID teachers) were invited to participate in various meetings, conferences and training activities throughout the program period. The corresponding expenditures appear under the category “development costs” but cannot be assumed to be one-time “start-up” expenses to be amortized over time.⁵⁸ While some management activities associated with the project could be considered as one-time “start-up” items, there was a high level of site team turnover (see Chapter 3), so a continuous program would also have required additional ongoing management and training.⁵⁹ Therefore, it is more appropriate to include development expenditure as a quasi-fixed cost in this cost analysis of BC AVID.

The cost analysis portion of this appendix seeks to present cost figures that would be representative if BC AVID’s interventions were implemented again. The appendix presents the average costs of BC AVID interventions per program group member as well as per student who completed the program. Since many program group students dropped out of taking AVID classes over time, the number of students who completed the program (completed all four years’ AVID classes) was substantially smaller. Economies of scale mean that the calculated average cost per program group member may prove to be an underestimate of the cost per AVID class member as some of the included program group members have left the class. In order to provide estimated average costs of supporting a student taking all four years’ AVID classes and activities, adjustments were made in the calculations to account for attrition.

All implementation costs and — in situations where they were difficult to separate — some costs related to the research or evaluation from the BC AVID are included in the program costs presented in this appendix. Text Box A6.1 reviews in more detail the analytical approach, accounting methods, and key data sources used.

⁵⁸ Some cost analyses consider programs to be continuous (self-perpetuating) and ignore development or start-up costs because the amortized one-time cost over an infinite time period approaches zero.

⁵⁹ The “start-up” activities include liaison and coordination with various school boards to start the project. However, a continuous program may require regular liaison and coordination to adjust the program to deal with issues raised.

Box A6.1 Analytical Approach, Accounting Methods and Data Sources

Analytical Approach

The basic analytical approach used for the BC AVID cost analysis is to account for all the non-research related resources used to implement the program wherever possible, either through direct measurement or estimation. Intangible costs, such as the extra time used by staff to implement the program and the leisure time forgone by participants (such as during field trips) are not included.

Accounting Methods

The cost estimates presented in this appendix cover the program period, starting with the school year 2004–05 when the project was in preparation, to the final school year 2009–10. All cost amounts are expressed in constant 2009 dollars, using an 8 per cent annual discount rate as recommended in the 2007 *Canadian Cost–Benefit Analysis Guide: Regulatory Proposals* from the Treasury Board of Canada. The adopted discount rate appears high when it is compared to the recently estimated social time preference rate at 3 per cent (Policy Research Initiative, 2007). The Treasury Board of Canada argues that the social time preference rate is appropriate only when minimal resources involve opportunity costs. Following the principles in the 1998 *Benefit–Cost Analysis Guide* from the Treasury Board of Canada, a sensitivity analysis using 0 per cent, 5 per cent, and 10 per cent annual discount rates is also presented.

Data Sources

Administration and operational costs of BC AVID were measured using accounting records, financial reports and administrative data collected from BC AVID sites, BC Ministry of Education and the Canada Millennium Scholarship Foundation. Inflation rates were calculated from Statistics Canada's CANSIM tables.

The Main Cost Categories of BC AVID

Any large-scale school program in BC likely involves cooperation of different workers at the provincial government level and district/school level. Since the work at the government level was largely in administration, management, program start-up and monitoring, as well as training provision and coordination, the cost is not expected to vary substantially by the number of students at the margin. However, the management costs incurred may increase by incremental “jumps” for each additional participating district or site and as such they should be considered as quasi-fixed costs. As a result, it is expected that the average costs per program participant are representative estimates of unit costs as long as the program is delivered to a similar number of students as each the program site.

At the site level, the cost for curriculum classes, tutorial classes, guest speakers, PSE field trips, motivational activity, and parent meetings are expected to vary by the number of participating students. At the same time, the expenditures paid by the sites on AVID Center fees, staff training and conference expenditures, site team meeting expenses, recruitment expenditures, are not likely to vary by the number of students and they are considered to be fixed. These two categories of site operation costs are presented separately.

Although the BC AVID program delivered was similar, there were several implementation differences between random assignment sites and case study sites that may have had cost implications. For example, case study sites did not have to recruit and assess students who would be assigned to the control group and be unable to receive the intervention, and so the recruitment cost would be expected to be lower for case study site students. The cost analysis considers site level costs separately for random assignment sites and case study sites, even though the central management costs per student are assumed to be the same at both types of site.

Limitations

While this analysis accounts for the major implementation costs of BC AVID, it does have some limitations, some of which are inherent in any cost analysis and some of which are unique to BC AVID. First, BC AVID was designed and run as an independent research demonstration project, completely separate from other education programs. A dedicated AVID Project Leader was put in place to help initiate and coordinate various training and operational activities, some of which would not be needed in an ongoing program. Therefore, there are start-up costs that would not be incurred to the same extent if BC AVID were run within the existing school system. Also, there were some overlaps between the BC AVID course curriculum and the existing Planning 10 curriculum. In such cases, BC AVID's operating costs would likely be lower if the program had been completely integrated into the system from the outset, embracing all opportunities for economies of scale and synergy.

Second, this analysis includes only tangible monetary costs arising from the operation of BC AVID, which means that some non-financial impacts of the program are not included due to the lack of measurement or an established methodology to estimate their monetary value.

Third, average costs are presented that do not account for variation at the individual level. Although the marginal costs — the incremental costs to “incentivize” students who are changing their decisions and behaviours because of the program — are more informative in accessing the cost of scaling up the program, the methodologies used can only estimate average costs.

Fourth, since the costs of the program were incurred through multiple years, the present value cost could be sensitive to the adopted annual discount rate. This analysis uses an 8 per cent annual discount rate (as recommended in the 2007 *Canadian Cost-Benefit Analysis Guide: Regulatory Proposals from the Treasury Board of Canada*). A sensitivity analysis using 0 per cent, 5 per cent and 10 per cent annual discount rates is also presented. These analyses find the results insensitive to the discount rate, even though the cost is decreasing with the discount rate. However, there is no specific theoretical justification — other than common convention — for the 8 per cent annual discount rate to be adopted as the most suitable assumption.

Finally, the results discussed in this appendix were derived using data from BC AVID in British Columbia covering the 2004–2010 period. As is the case when interpreting any experimental results, the specific characteristics of the local population, education system, economy, and policy environment should be considered before attempting to generalize the findings to other populations, regions, or periods.

The next section of the appendix describes the major components of the cost analysis. The costs at the governmental level are discussed first, followed by an examination at the site level.

What Were the Costs of the Various Components of BC AVID?

Management and Coordination Costs at the Government Level

The project management and coordination work of the Ministry, the AVID Project Leader and the School District of Chilliwack could be categorized into four components: providing assistance to start and monitor project activities, organizing and providing training to district managers and teachers, providing general project administration and management support, and providing support to facilitate research activities of the project. Based on the informal breakdown of the time spent and expenditures in each component, Table A6.1 presents the estimates of the management and coordination costs incurred during the program.

Table A6.1 Management and Coordination Costs Incurred by the Ministry of Education, BC AVID Coordinator, and the School District of Chilliwack

	Administration and Management	Starting Up / Monitoring	Training	Research	Total Without Research
<i>Cost Incurred by School Years (\$)</i>					
2004-05	70,052	231,180	133,182	19,663	434,414
2005-06	56,667	68,267	39,328	5,807	164,262
2006-07	75,078	51,783	29,832	4,404	156,693
2007-08	66,663	47,714	27,488	4,058	141,866
2008-09	68,762	61,236	35,278	5,208	165,275
2009-10	41,730	31,599	18,204	2,688	91,533
<i>Total Discounted Management and Coordination Cost by Annual Discount Rates (\$)</i>					
at 0%	378,951	491,779	283,313	41,829	1,154,043
at 5%	338,971	459,520	264,728	39,085	1,063,219
at 8%	318,750	443,179	255,314	37,695	1,017,243
at 10%	306,576	433,330	249,641	36,858	989,547

Table A6.1 Management and Coordination Costs Incurred by the Ministry of Education, BC AVID Coordinator, and the School District of Chilliwack

	Administration and Management	Starting Up / Monitoring	Training	Research	Total Without Research
<i>Average Discounted Management and Coordination Cost Per Recruited Program Participant (Total Program Participants = 945) (\$)</i>					
at 0%	401.01	520.40	299.80	44.26	1,221.21
at 5%	358.70	486.26	280.14	41.36	1,125.10
at 8%	337.30	468.97	270.17	39.89	1,076.45
at 10%	324.42	458.55	264.17	39.00	1,047.14

It is apparent in the first third panel of Table A6.1 that a substantial proportion of the cost was incurred in the first year of program. The main two components of management and coordination during the first year were activities to set up the project as well as organizing and providing training to district directors and AVID site team members involved in the project. The management and coordination costs were lower after the first year. The total discounted management and coordination cost was \$1,017,243 (at the 8 per cent discount rate). Since the cost was front-loaded, the total discounted cost was not particularly sensitive to the discount rate.

The analysis assumes that the total discounted cost varies mainly by the number of participating sites. A small change in the number of participating students within a school would have no effect on the total discounted management and coordination cost. Since there were 17 participating sites, the average discounted cost per site was about \$59,837.82.

However, it is usually more informative to have average cost figures per participating student. The bottom third of Table A6.1 presents the average discounted management and coordination cost per recruited program participant. These figures were obtained by dividing the total discounted costs by the number of program participants (n=945). On average, it cost the government about \$1,076.45 per participating student to manage and coordinate BC AVID activities (not including research).

Operational Costs at the Site Level

There were 14 larger-scale random assignment sites and four smaller scale case study sites in BC AVID.⁶⁰ Due to differences in location and number of cohorts, operational costs at the site level could be quite different. In this section, the operational costs are presented separately for random assignment sites and case study sites.

⁶⁰ Case study sites had only one cohort of participants. Random assignment sites had two cohorts of program participants, with the exception of one that had only one cohort. Calculations of the average costs have been adjusted assuming two cohorts for all random assignment sites.

Each site was asked to report a breakdown of expenditures related to the funding given to the site for all BC AVID activities. The sites were instructed to report only the portion of expenditures directly related to cohorts of the demonstration project since some schools offered the program or other program activities to other cohorts of students. As a result, the cost figures present in this appendix are expected to be below overall figures for the project's program budget.

Random Assignment Sites

Some cost components at the site level were not expected to vary much by the number of participating students, and these were considered "fixed" costs. The average costs per random assignment site are presented in Table A6.2. BC AVID site team members were asked to participate in regular training activities, meetings, and conferences. The program paid for their travelling expenses, conference/course fees, and the salary of replacement teachers if needed. The site funding also included the AVID Center annual fees. Finally, the remaining expenditures were on supplies to help site team meetings, recruitment, and other administrative work.

As shown in Table A6.2, the first two years of the project included considerable expenditures on training and nearly all costs for recruitment, but training did continue in the remaining years of the project. Combining all five "fixed" cost components, the discounted average fixed cost per site was about \$136,293 (at the 8 per cent discount rate), of which 87.5 per cent was spent on training and conferences.

Table A6.2 Fixed Operation Costs at Random Assignment Sites

	AVID Center Annual Fee	Staff Training & Conference Fees (incl. travel \$)	AVID Site Team Expenses	Recruitment	Other
<i>Real Costs Per Site by School Year (\$)</i>					
2004-05	1,016	53,408	116	1,736	9
2005-06	2,977	31,054	179	976	383
2006-07	2,724	17,306	599	0	57
2007-08	3,216	14,723	242	0	84
2008-09	2,861	10,119	224	22	228
2009-10	1,904	4,650	102	0	620

Table A6.2 Fixed Operation Costs at Random Assignment Sites

	AVID Center Annual Fee	Staff Training & Conference Fees (incl. travel \$)	AVID Site Team Expenses	Recruitment	Other
<i>Total Discounted Costs Per Site (\$)</i>					
at 0%	14,698	131,259	1,462	2,734	1,382
at 5%	12,945	123,366	1,303	2,683	1,172
at 8%	12,059	119,288	1,221	2,656	1,069
at 10%	11,526	116,801	1,172	2,638	1,009
<i>Discounted Operational Cost Per Recruited Program Participant (Total Program Participants = 821) (\$)</i>					
at 0%	230.41	2,072.74	23.02	43.29	21.13
at 5%	203.16	1,948.98	20.53	42.49	17.97
at 8%	189.37	1,884.99	19.25	42.05	16.42
at 10%	181.06	1,845.95	18.48	41.77	15.50
<i>Discounted Operational Cost Per Student Completing BC AVID (\$)</i>					
at 0%	232.73	2,078.40	23.14	26.60	21.88
at 5%	204.98	1,953.42	20.63	26.11	18.56
at 8%	190.95	1,888.85	19.34	25.84	16.93
at 10%	182.50	1,849.46	18.55	25.67	15.97

Other components of operational costs related to activities that varied with the number of participating students. These include curriculum classes, tutorial classes, invitation of guest speakers, student field trips to post-secondary institutions, other motivational activities, parent meetings, and other student-related supplies. The detailed “variable” cost figures are presented in Table A6.3. Combining all seven “variable” cost components, the discounted average variable cost per site was about \$26,446 (at the 8 per cent discount rate).

Table A6.3 Variable Operational Costs at Random Assignment Sites

	Curriculum Class	Tutorial Class	Guest Speakers	Field Trips	Motivational Activities	Parent Meetings	Others
<i>Real Costs Per Site by School Year (\$)</i>							
2004–05	4,089	220	0	0	3	59	22
2005–06	2,273	750	0	173	356	15	81
2006–07	1,255	1,839	0	489	860	52	550
2007–08	659	2,553	0	1,175	1,518	76	171
2008–09	779	5,085	32	1,652	682	12	22
2009–10	696	2,803	94	1,160	220	0	10
<i>Total Discounted Costs Per Site (\$)</i>							
at 0%	9,750	13,251	125	4,649	3,639	215	856
at 5%	9,147	11,188	99	3,891	3,167	197	772
at 8%	8,838	10,164	87	3,516	2,926	187	727
at 10%	8,651	9,554	80	3,293	2,780	181	700
<i>Discounted Operational Cost Per Recruited Program Participant (Total Program Participants = 821) (\$)</i>							
at 0%	153.54	206.41	1.87	72.20	57.36	3.40	13.54
at 5%	144.17	174.48	1.49	60.51	49.94	3.11	12.21
at 8%	139.37	158.62	1.30	54.71	46.15	2.96	11.51
at 10%	136.46	149.16	1.19	51.26	43.86	2.87	11.07
<i>Discounted Operational Cost Per Student Completing BC AVID (\$)</i>							
at 0%	154.39	445.88	6.83	162.99	93.98	4.37	17.62
at 5%	144.84	368.47	5.39	133.70	80.78	3.96	15.82
at 8%	139.95	330.57	4.70	119.40	74.14	3.75	14.87
at 10%	136.99	308.20	4.30	110.97	70.15	3.63	14.30

Case Study Sites

The average costs per case study site are presented in Table A6.4. Since there was only one cohort of students covered among the case study sites and the operation completed one year earlier compared to the random assignment sites, it is expected that the “fixed” costs would be lower than for random assignment sites. Combining all five “fixed” cost components, the discounted average fixed cost per case study site was about \$119,631 (at the 8 per cent discount rate), of which 91.5 per cent was spent on training and conferences.

Table A6.4 Fixed Operating Costs at Case Study Sites

	AVID Center Annual Fee	Staff Training & Conference Fees (incl. travel \$)	AVID Site Team Expenses	Recruitment	Other
<i>Real Costs Per Site by School Year (\$)</i>					
2004–05	0	60,441	344	640	19
2005–06	2,157	23,211	140	197	60
2006–07	2,847	12,958	195	0	846
2007–08	1,982	16,119	143	0	81
2008–09	1,430	4,929	293	0	614
2009–10					
<i>Total Discounted Costs Per Site (\$)</i>					
at 0%	8,416	117,657	1,116	837	1,620
at 5%	7,525	112,279	1,019	828	1,418
at 8%	7,063	109,460	970	823	1,315
at 10%	6,780	107,728	941	819	1,252

Table A6.4 Fixed Operating Costs at Case Study Sites

	AVID Center Annual Fee	Staff Training & Conference Fees (incl. travel \$)	AVID Site Team Expenses	Recruitment	Other
<i>Discounted Operational Cost Per Recruited Program Participant (Total Program Participants = 124) (\$)</i>					
at 0%	271.49	3,795.40	35.99	27.01	52.24
at 5%	242.76	3,621.90	32.88	26.70	45.75
at 8%	227.83	3,530.98	31.30	26.54	42.42
at 10%	218.70	3,475.08	30.34	26.43	40.40
<i>Discounted Operational Cost Per Student Completing BC AVID (\$)</i>					
at 0%	271.49	3,795.40	35.99	19.25	52.24
at 5%	242.76	3,621.90	32.88	19.03	45.75
at 8%	227.83	3,530.98	31.30	18.91	42.42
at 10%	218.70	3,475.08	30.34	18.83	40.40

The detailed “variable” cost figures for case study sites are presented in Table A6.5. Combining all seven “variable” cost components, the discounted average variable cost per case study site was about \$29,498 (at the 8 per cent discount rate). The average variable cost per case study site was higher than that for the random assignment sites. It appears that case study sites spent more on field trips and motivational activities than their random assignment counterparts. This was anticipated due to the remote locations of the schools relative to post-secondary institutions.

Table A6.5 Variable Operating Costs at Case Study Sites

	Curriculum Class	Tutorial Class	Guest Speakers	Field Trips	Motivational Activities	Parent Meetings	Others
<i>Real Costs Per Site by School Year (\$)</i>							
2004–05	3,379	189	0	0	0	0	50
2005–06	1,075	847	0	776	547	66	51
2006–07	573	1,988	67	1,657	3,364	44	221
2007–08	601	2,855	11	6,054	246	20	147
2008–09	448	2,989	0	6,146	968	0	464
2009–10							
<i>Total Discounted Costs Per Site (\$)</i>							
at 0%	6,076	8,868	78	14,632	5,125	130	932
at 5%	5,810	7,724	70	12,528	4,581	120	807
at 8%	5,672	7,141	66	11,462	4,298	115	744
at 10%	5,587	6,789	64	10,821	4,124	111	706
<i>Discounted Operational Cost Per Recruited Program Participant (Total Program Participants = 124) (\$)</i>							
at 0%	196.00	286.08	2.51	472.01	165.33	4.20	30.07
at 5%	187.42	249.18	2.26	404.11	147.79	3.88	26.03
at 8%	182.96	230.37	2.13	369.74	138.64	3.70	23.99
at 10%	180.23	218.99	2.05	349.05	133.02	3.60	22.77
<i>Discounted Operational Cost Per Student Completing BC AVID (\$)</i>							
at 0%	219.90	407.85	3.10	707.26	214.15	4.86	44.34
at 5%	207.96	352.20	2.79	602.02	190.07	4.47	37.99
at 8%	201.80	323.96	2.63	548.93	177.59	4.26	34.79
at 10%	198.04	306.93	2.52	517.04	169.97	4.13	32.87

Average Cost per Student

Policy-makers or practitioners who may plan to replicate or to implement some components of BC AVID may find cost figures per student more informative for budgeting. The simplest method to calculate average cost per student is to divide the discounted average cost by the average number of program participants. The average cost per participant is representative if the program attrition pattern in future implementation is similar to that seen in the BC AVID project. These detailed average costs were presented in the lower portions of Tables A6.1 through A6.5 and are summarized in Table A6.6. The discounted average total costs per program participant were \$3,643 at random assignment sites and \$5,887 at case study sites (at the 8 per cent discount rate). More than half of the average total costs (51.7 per cent for random assignment sites and 60.0 per cent for case study sites) were spent on training and conference participation.

Table A6.6 Discounted Average BC AVID Management and Operational Cost Per Program Participant

Cost Items (\$)	At 0% Annual Discount Rate		At 5% Annual Discount Rate		At 8% Annual Discount Rate		At 10% Annual Discount Rate	
	RA	CS	RA	CS	RA	CS	RA	CS
Government Level								
Administration and Management	401.01	401.01	358.70	358.70	337.30	337.30	324.42	324.42
Starting up / Monitoring	520.40	520.40	486.26	486.26	468.97	468.97	458.55	458.55
Training	299.80	299.80	280.14	280.14	270.17	270.17	264.17	264.17
Site Operation - Fixed Items								
AVID Center annual fee	230.41	271.49	203.16	242.76	189.37	227.83	181.06	218.70
Staff training & conference fees	2,072.74	3,795.40	1,948.98	3,621.90	1,884.99	3,530.98	1,845.95	3,475.08
AVID site team expenses	23.02	35.99	20.53	32.88	19.25	31.30	18.48	30.34
Recruitment	43.29	27.01	42.49	26.70	42.05	26.54	41.77	26.43
Others	21.13	52.24	17.97	45.75	16.42	42.42	15.50	40.40

Table A6.6 Discounted Average BC AVID Management and Operational Cost Per Program Participant

Cost Items (\$)	At 0% Annual Discount Rate		At 5% Annual Discount Rate		At 8% Annual Discount Rate		At 10% Annual Discount Rate	
	RA	CS	RA	CS	RA	CS	RA	CS
Site Operation - Variable Items								
Curriculum class	153.54	196.00	144.17	187.42	139.37	182.96	136.46	180.23
Tutorial class	206.41	286.08	174.48	249.18	158.62	230.37	149.16	218.99
Guest speakers	1.87	2.51	1.49	2.26	1.30	2.13	1.19	2.05
Field trips	72.20	472.01	60.51	404.11	54.71	369.74	51.26	349.05
Motivational activities	57.36	165.33	49.94	147.79	46.15	138.64	43.86	133.02
Parent meetings	3.40	4.20	3.11	3.88	2.96	3.70	2.87	3.60
Others	13.54	30.07	12.21	26.03	11.51	23.99	11.07	22.77
Average Management and Operational Cost Per Program Participant	4,120.11	6,559.54	3,804.14	6,115.76	3,643.15	5,887.05	3,545.79	5,747.82

If the attrition of students were to be lower such that more students completed the program, the operating expenses for program activities at the site level would be expected to increase. An alternative method for calculating average cost per student is to calculate the resources consumed for each student who completed the program. Since the project collected data on the number of active participants in each of the school years, it is possible to calculate the average costs per active participant per year. Using these participation data, the figures in the bottommost panel of Tables A6.2 through A6.5 present the discounted total of the average costs per active participant per year. These estimate the average resources needed for each completing student. These figures are summarized in Table A6.7.

The discounted average total cost per program completing student was \$3,906 at random assignment sites and \$6,222 at case study sites (at the 8 per cent discount rate). These figures are slightly higher than average costs per recruited participant since not all participants completed the program.⁶¹

⁶¹ Based on the figures in Tables A6.6 and A6.7, the discounted average cost per incomplete participant was approximately \$3,381 at random assignment sites and \$5,385 at case study sites.

Table A6.7 Discounted Average BC AVID Management and Operational Cost Per Program Completing Student

Cost Items (\$)	At 0% Annual Discount Rate		At 5% Annual Discount Rate		At 8% Annual Discount Rate		At 10% Annual Discount Rate	
	RA	CS	RA	CS	RA	CS	RA	CS
Government Level								
Administration and Management	401.01	401.01	358.70	358.70	337.30	337.30	324.42	324.42
Starting up / Monitoring	520.40	520.40	486.26	486.26	468.97	468.97	458.55	458.55
Training	299.80	299.80	280.14	280.14	270.17	270.17	264.17	264.17
Site Operation — Fixed Items								
AVID Center annual fee	232.73	271.49	204.98	242.76	190.95	227.83	182.50	218.70
Staff training & conference fees	2,078.40	3,795.40	1,953.42	3,621.90	1,888.85	3,530.98	1,849.46	3,475.08
AVID site team expenses	23.14	35.99	20.63	32.88	19.34	31.30	18.55	30.34
Recruitment	26.60	19.25	26.11	19.03	25.84	18.91	25.67	18.83
Others	21.88	52.24	18.56	45.75	16.93	42.42	15.97	40.40
Site Operation — Variable Items								
Curriculum class	154.39	219.90	144.84	207.96	139.95	201.80	136.99	198.04
Tutorial class	445.88	407.85	368.47	352.20	330.57	323.96	308.20	306.93
Guest speakers	6.83	3.10	5.39	2.79	4.70	2.63	4.30	2.52
Field trips	162.99	707.26	133.70	602.02	119.40	548.93	110.97	517.04
Motivational activities	93.98	214.15	80.78	190.07	74.14	177.59	70.15	169.97
Parent meetings	4.37	4.86	3.96	4.47	3.75	4.26	3.63	4.13
Others	17.62	44.34	15.82	37.99	14.87	34.79	14.30	32.87
Average Management and Operational Cost Per Program Completion	4,490.01	6,997.05	4,101.75	6,484.90	3,905.74	6,221.83	3,787.84	6,062.01

Hypothesizing Costs Based on AVID Center Fees

The above estimates are derived from actual costs incurred in a demonstration project. They may not translate directly to costs in other implementations of the program. For an alternative perspective, AVID Center's own pricing can be considered. AVID Center produces forecasts of program costs for each year of program delivery based on its pricing of its services to educators such as training, annual site fees and the AVID library. Unlike SRDC's estimates, such pricing does not include teacher replacement fees to cover the costs of staff engaged in AVID activities (such as attending training or meetings at times when they would normally be teaching). Also unlike SRDC's estimates, AVID pricing does not include any costs associated with tutorials or field trips or travel and accommodation to attend training.

Using the latest costing sheet (with 2014–2017 prices, in US dollars) the total cost in fees due to AVID Center can be estimated for an equivalent set of schools to those involved in the BC AVID Pilot Project. For 21 schools (providing the same combinations of AVID 9, 10, 11 and 12 as in the project) to 945 students (in one or two cohorts, as in the project) in 15 school districts, together with a preparation/recruitment year for AVID nine schools and two years of AVID Institute participation per site team, the cost in fees would be \$912,232. This is equivalent to \$965 per student in the initially recruited cohorts. Furthermore, the schools would also be free to recruit additional cohorts of students and take them also partway through four years of AVID over the same period at no additional cost.⁶² Over time, assuming minimal attrition, each year's costs would be divided across more and more AVID students until there was a class in each Grade year, bringing down the share of the fees per student. Adding a second or third AVID class per grade would also cut the per student cost further. For example, in the fourth year at a school with four grade years, the approximately \$4,000 annual cost of AVID membership fees would be the only AVID fee (as the library and training was purchased at program start-up). This \$4,000 fee divided across 120 AVID students, implies an annual cost per student of roughly \$33, which in turn equates to a total "mature program" cost of just \$133 per completing student. Note again, though, that only the AVID membership fee is considered and tutorial and field trip costs will need to be factored in.

Interpreting the Findings

Several features of BC AVID combine to make it unique among education programs, including its long duration, intensive training, large site team, field visits and the tutoring component of the program. These features also make it quite difficult to evaluate the cost economy or cost efficiency of BC AVID since there is no program to compare it to. However, it can be said that the amount of resources required to run BC AVID was substantial. In the school year 2009–2010, the basic allocation of enrolment-based funding to BC schools was \$5,851 for each full-time equivalent student (BC Ministry of Education, 2009).

Since training and conference participation consume more than half of the program funding, it might be possible to make the program more cost-efficient by operating this component more efficiently. The

⁶² For example, a third cohort of AVID students would be covered by the fees paid for Cohorts 1 and 2 up until their Grade 11 year. A fourth cohort would be covered to their Grade 10 year and so on.

costs of travelling to the AVID Center's Summer Institutes for training could be reduced through more locally-based training. Recent developments in online learning technologies and videoconferencing may help reduce the resources needed for training and knowledge sharing.

When comparing the average costs between the smaller-scale case study sites and the larger-scale random assignment sites, it is clear that the cost is subject to economies of scale, because most of the substantial cost components are fixed. However, increasing the number of participants within a school may affect the activities offered and place even more demands on the trained site team members, in particular the AVID teacher. It seems that case study schools spent more on field trips and motivational activities than random assignment sites. It is not clear whether increasing the number of participants within a school would change the long term outcomes of the program.

The high student attrition is a programming concern but has only a small role in terms of cost efficiency. The total costs would not increase markedly even if all participants stayed with the program for four years.

Appendix 7: 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 based on an intention-to-treat (ITT) model. An ITT analysis 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 they may engage in (such as not taking another elective). However, ITT analysis does not directly evaluate full exposure to an intended treatment on those who could receive it. Most evaluation techniques, including randomized controlled trials, are not able to provide unbiased estimates of the effects of treatment on the treated without making strong additional assumptions, because compliance with the treatment is rarely random. Program group members vary in how much they will participate in the program, such that those who participate a lot are nearly always systematically different from those who participate a little. In such circumstances, selectively considering only the subset of program participants predisposed to high exposure without making a corresponding adjustment to compare them against an equivalently select subset of the control group will result in biased impact estimates. Comparing the outcomes of everyone in the program group to everyone in the control group is the safest way to avoid the bias in impacts that would result. It also best answers the policy question that is most commonly asked about the impacts of making the program available in schools. Hence this full sample approach features in most of the impact analysis in this report. The analysis here, however, makes use of propensity score matching (a non-experimental evaluation technique) to estimate impacts of BC AVID among students who have participated most in the program on offer, while attempting to avoid such bias.

Treatment compliance was not high in the BC AVID Pilot Project. Only 41.1 per cent of BC AVID students participated in AVID activities in each of four program years (Grades 9, 10, 11 and 12). In other words, more than half of the program group did not participate in all the activities that BC AVID was offering to them. Possibly, among those who complied with the program and participated in most (if not all) program activities on a regular basis, the program might have produced larger impacts on PSE enrolment. Therefore, it is informative to attempt to estimate the impacts on students with high exposure to AVID activities, i.e. the treatment effects on the treated.

For this analysis, high program exposure (or compliance) is defined as spending time in AVID elective class activities in each of the four program years. Such high exposure to AVID activities was not randomly distributed among AVID students. For example, one participating BC AVID site-cohort had no student meet this definition of high exposure.⁶³

Of course, program exposure cannot be measured among control group members. Certainly, outcomes from the entire control group sample would not provide a valid counterfactual experience against which to compare outcomes of members of the program group with high exposure. A non-experimental

⁶³ Students from larger families (with four or five people) were significantly more likely to participate in all four years of AVID programming.

impact evaluation method is needed to identify a comparable counterfactual sample of *potentially* high exposure students from within the control group, equivalent to the high exposure students in the program group.

Method

Jo and Stuart (2009)⁶⁴ showed that it is possible to apply the propensity score matching (PSM) method to estimate impacts on those who complied with the treatment under two conditions: the conditional independence assumption (CIA) and the principal ignorability (PI) assumption must be satisfied. The CIA assumes that there will be no systematic differences in potential outcomes between compliers and non-compliers *once pre-treatment characteristics (called “covariates”) are controlled for*. The PI assumption requires that principal strata membership (belonging to a group of participants with a similar propensity to comply) is conditionally independent of the potential outcome *given the pre-treatment covariates*. In other words, there should be no differences in the potential outcomes across principal strata given the observed pretreatment covariates. Furthermore, in a randomized controlled trial like the BC AVID Pilot Project, it is possible to estimate the propensity score of compliance using an estimated model based on the treatment sample observations and to construct a matched control group sample using control group observations. In practice, the control group sample is reweighted such that it resembles the compliers of the treatment group.

It should be noted that propensity score matching does not provide unbiased estimates if selection into treatment is related to unobserved differences between the treatment and control. In the case of BC AVID, if the high exposure group comprised students possessing certain unobserved characteristics (for example, a pre-existing attachment to school or to studying, not captured in the survey measures) that were not possessed by the low-exposure group and if the potential outcome (in this case PSE enrolment) was related to these unmeasured characteristics, the conditional independence assumption would be violated and the estimated difference would be biased. Unfortunately, the existence of such a condition cannot be known and so the presence of such potential for bias is not testable. In sum, the PSM will only provide unbiased estimates when all systematic differences between high exposure and low exposure groups are only related to observable characteristics that are included in the propensity score estimation. While the BC AVID Pilot Project captured very rich baseline data that are quite likely to capture most of the characteristics that predispose sample members to vary their exposure, it is impossible analytically to rule out the influence of some unmeasured factor. The analysis sample is thus constructed with great care to minimize this risk, but it represents one of the main limitations of this model.

Construction of the Analysis Sample

Observations of the site-cohort where no student had high program exposure were excluded from the estimations since PSM is only valid if the propensity is neither precisely zero nor precisely one. As a result, only 761 AVID program group observations (out of the original 791) and 430 control group

⁶⁴ Jo, Booil, and Elizabeth A. Stuart. “On the Use of Propensity Scores in Principal Causal Effect Estimation.” *Statistics in Medicine* 28, no. 23 (2009): 2857–2875. doi:10.1002/sim.3669.

observations (out of the original 450) can be used in this study. Out of the 761 students in the AVID program group, 325 were classified as high exposure (42.7 per cent).

The first step was to determine across all 761 students the extent to which variation in each of a range of baseline characteristics explained variation in program compliance. In this analysis, high exposure was regressed on a wide range of the student's baseline characteristics: gender, Aboriginal status, English as secondary language status, average letter grade during grade 8, family income, parent's post-secondary education participation, single parent status, self and parent's expectation of PSE attendance, family size, and site-cohort ID using a logistic regression. The estimated model had good explanatory power. It is typical to measure the accuracy of a logistic regression by the proportion of the model's predictions that correspond to the actual states. About 76.7 per cent of the model's predictions agreed with the outcome (were concordant) while 23.2 per cent disagreed (were discordant). A 76.7 per cent prediction rate, while good, does not mean that selection into treatment is fully explained by observable differences. If unobserved factors explain AVID exposure, one of the assumptions required for PSM to produce accurate impact estimates is violated.

A logistic regression model was used to estimate a propensity to experience high exposure for each student in the program and control groups. Students predicted as most likely to have high exposure received higher propensity scores. Matching of propensity scores requires common statistical support of these estimated propensities between the treatment group and the control group. Figure A7.1 presents the distributions of the propensity scores in the program and control groups. Each observation in the program group has a nearby control group observation (within 2 percentage points of its propensity score). It can be concluded from the almost mirror reflection that the two samples share common statistical support.

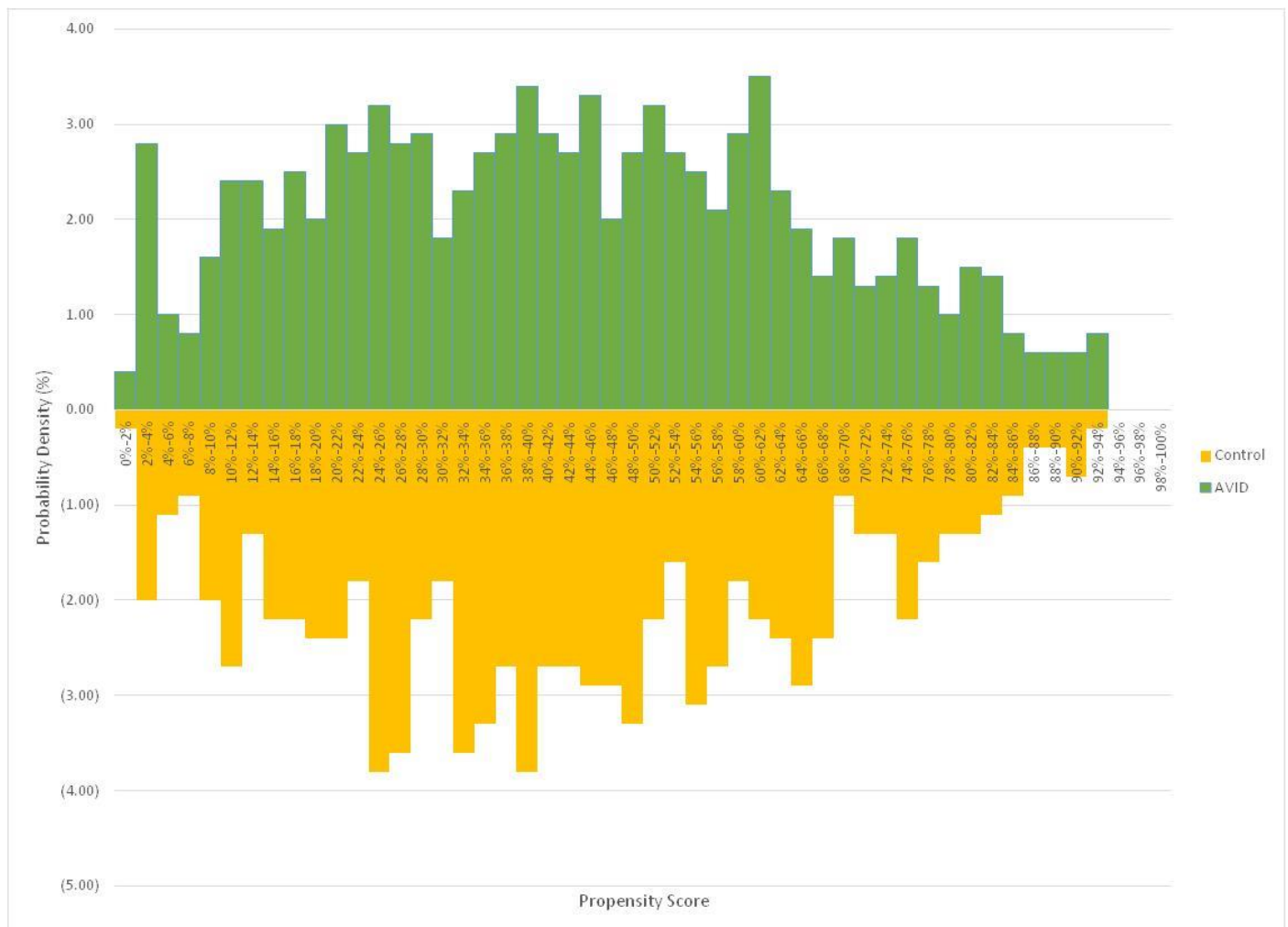
Following Jo and Stuart (2009), an analytical weight was derived using the estimated propensity score. Among program group sample, observations of those with high program exposure received a weight of 1. Observations of program group students without high exposure were dropped from the analysis sample. Among the control group sample, each observation received a weight of $P / (1 - P)$, where P was the observation's estimated propensity score. The weighted control group sample served as the control group in the following analysis.

The estimated propensity score is valid for propensity score matching only if it exhibits a balancing score, meaning that the pre-treatment characteristics of the matched/weighted control group sample should resemble those of the treatment group. Table A7.1 shows that the high exposure group had several significant differences including a lower proportion of students whose parents had a post-secondary education compared to the unweighted control group. After weighting, the control group with the derived analytical weight, the extent of such differences was reduced. The number of characteristics on which there are significant differences (at the 5 per cent significance level) drops from seven to three. Therefore, the estimated propensity score helps to balance the observed characteristics between the high exposure group and the weighted control group. Regression adjustment is applied in the analysis to control further for these baseline characteristics (by including them as covariates), and this adjustment should eliminate the influence of the remaining differences between the high exposure group and the weighted control group.

Selected Outcomes of BC AVID Among Students With High Exposure to AVID Activities

Table A7.2 presents key impacts for those program group students with high exposure to AVID activities. The impacts were estimated by applying the analytical weight derived from propensity score model described in the last section to the control group. Readers should note that the standard errors included were not adjusted for potential peer effects within the same site-cohort and so it is likely that these standard errors are underestimates. This means statistical significance may be attributed to impact estimates more often than is justified.

Figure A7.1 Distributions of Estimated Propensity Score, by Experimental Groups



There was no difference between the proportion of students in the high exposure group and the weighted control group in completing the requirements for a high school diploma. However, the proportion of high school dropouts was 4.4 percentage points lower among the high exposure group compared to the weighted control group. This is expected because the high exposure group must have

stayed in the AVID school for all four years, and parallels the impact of the *offer* of AVID on dropping out of high school in Chapter 5. The results suggest that high exposure to AVID activities was associated with lower incidence of leaving the school but not to the completion of high school education. During Grade 12, students with high exposure to AVID were also more likely to report expecting to go to university and wanting to obtain a university degree.

The proportion of students who applied to a post-secondary program (particularly to college) and the proportion who enrolled in a post-secondary program were both higher among the high exposure group compared to the control group, although the increases in enrolment were not statistically significant. There is evidence that applications to and enrolment in apprenticeships were significantly reduced by receiving AVID for the high exposure group. Overall, there is no statistically significant impact of high exposure to AVID on post-secondary enrolment.

Substantially more students with high exposure to AVID reported being familiar with student financial aid (an impact of 17.8 percentage points). This is similar to an impact reported in the main analysis (Chapter 5).

Concluding Remarks

An analysis of students with high exposure to BC AVID has compared their outcomes to those of control group members, weighted to account for their propensity to receive high program exposure. This analysis attempts to answer a different question than the policy question in the main report. Policy-makers typically want to know whether making an intervention available will change the outcomes of the intervention's target group (in the case of the AVID elective, this group comprises students meeting criteria that define "middle-achieving" students). This is the question answered in the main analysis. Here, the analysis considered only the subgroup of this target group who comply over the long term and voluntarily receive four years of the program. It uses a state-of-the-art propensity score matching technique that requires the acceptance of more assumptions than does the main analysis, based on a relatively straightforward experimental design. One of these extra assumptions is that the factors predisposing students to high program exposure are fully captured in baseline measures.

Unfortunately, it is not possible to verify such an assumption: students with high exposure to BC AVID may have been more motivated and more driven to study further at the outset in ways that were unmeasured. These unobserved characteristics might then also account both for the more intensive participation in BC AVID and raised interest in university enrolment. If so, the assumption does not hold and the results are not valid. Alternatively, if the assumptions hold, the results point to a modest amplification of results seen in the main report. High program exposure does not increase post-secondary enrolment, but it 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 (evidenced in more making applications to college and fewer taking up apprenticeships).

Table A7.1 Balancing Baseline Characteristics — High Exposure Program Group Compared to the Control Group
Unweighted versus Weighted

Characteristics	Without Weight				Weighted			
	AVID	Control	Diff	SE	AVID	Comparison	Diff	SE
Continuous Variables (Means)								
Student's Age	13.8	13.9	0.0	(0.0)	13.8	13.8	0.0	(0.0)
Family Size	4.2	4.2	0.1	(0.1)	4.2	4.3	0.0	(0.1)
Binary Variables (%)								
Female Student	54.5	55.1	-0.7	(3.7)	54.5	59.8	-5.4	(3.7)
Aboriginal	8.0	9.5	-1.5	(2.1)	8.0	7.5	0.6	(2.1)
ESL Student	1.2	3.5	-2.3 **	(1.1)	1.2	4.4	-3.2 **	(1.1)
Average Grade (Grade 8)								
A	15.1	12.1	3.0	(2.5)	15.1	13.5	1.6	(2.5)
B or C	81.2	83.0	-1.8	(2.8)	81.2	82.8	-1.5	(2.8)
Family Income								
\$25k to \$50k	15.4	16.5	-1.1	(2.7)	15.4	15.3	0.1	(2.7)
\$50k to \$75k	20.9	20.0	0.9	(3.0)	20.9	21.7	-0.8	(3.0)
\$75k to \$100k	23.1	19.1	4.0	(3.0)	23.1	25.3	-2.2	(3.0)
\$100k or more	17.9	17.4	0.4	(2.8)	17.9	16.0	1.8	(2.8)
Parent has PSE	39.4	45.8	-6.4 *	(3.6)	39.4	42.6	-3.2	(3.6)
Single Parent	18.5	18.4	0.1	(2.9)	18.5	16.0	2.5	(2.9)
Expectation to Attend-								
Vocational School	4.3	3.7	0.6	(1.4)	4.3	2.6	1.7	(1.4)
College	19.4	16.1	3.3	(2.8)	19.4	17.2	2.2	(2.8)
University	55.1	60.7	-5.6	(3.6)	55.1	58.6	-3.6	(3.6)
Parent's Expectation								
Mother expected PSE	69.9	69.5	0.3	(3.4)	69.9	72.7	-2.8	(3.4)
Father expected PSE	80.3	78.8	1.5	(3.0)	80.3	83.5	-3.2	(3.0)

Table A7.1 Balancing Baseline Characteristics — High Exposure Program Group Compared to the Control Group
Unweighted versus Weighted

Characteristics	Without Weight				Weighted			
	AVID	Control	Diff	SE	AVID	Comparison	Diff	SE
Site-Cohort Identifier								
Site-Cohort 1	5.5	8.1	-2.6	(1.9)	5.5	2.8	2.8 *	(1.9)
Site-Cohort 2	4.3	4.7	-0.3	(1.5)	4.3	4.1	0.3	(1.5)
Site-Cohort 3	4.3	4.2	0.1	(1.5)	4.3	2.8	1.5	(1.5)
Site-Cohort 4	7.1	3.0	4.1 ***	(1.6)	7.1	17.4	-10.3 ***	(1.6)
Site-Cohort 5	4.6	4.0	0.7	(1.5)	4.6	3.8	0.8	(1.5)
Site-Cohort 6	4.9	3.3	1.7	(1.4)	4.9	3.4	1.5	(1.4)
Site-Cohort 7	3.1	5.1	-2.0	(1.5)	3.1	2.2	0.9	(1.5)
Site-Cohort 8	5.2	4.2	1.0	(1.5)	5.2	5.5	-0.3	(1.5)
Site-Cohort 9	1.9	4.9	-3.0 **	(1.4)	1.9	1.2	0.7	(1.4)
Site-Cohort 10	4.9	2.8	2.1	(1.4)	4.9	4.3	0.7	(1.4)
Site-Cohort 11	1.5	4.2	-2.6 **	(1.3)	1.5	0.7	0.9	(1.3)
Site-Cohort 12	1.2	3.5	-2.3 **	(1.1)	1.2	0.5	0.8	(1.1)
Site-Cohort 13	0.0	0.0	0.0		0.0	0.0	0.0	
Site-Cohort 14	0.6	1.9	-1.2	(0.8)	0.6	0.2	0.4	(0.8)
Site-Cohort 15	4.9	5.1	-0.2	(1.6)	4.9	6.4	-1.5	(1.6)
Site-Cohort 16	5.9	2.8	3.1 **	(1.5)	5.9	6.7	-0.8	(1.5)
Site-Cohort 17	4.6	4.0	0.7	(1.5)	4.6	4.4	0.2	(1.5)
Site-Cohort 18	4.3	3.3	1.1	(1.4)	4.3	2.6	1.7	(1.4)
Site-Cohort 19	3.7	3.5	0.2	(1.4)	3.7	2.1	1.6	(1.4)
Site-Cohort 20	5.5	3.5	2.1	(1.5)	5.5	9.7	-4.1 **	(1.5)
Site-Cohort 21	6.8	4.0	2.8 *	(1.6)	6.8	10.5	-3.8 *	(1.6)
Site-Cohort 22	0.3	3.5	-3.2 ***	(1.1)	0.3	0.1	0.2	(1.1)

**Table A7.1 Balancing Baseline Characteristics — High Exposure Program Group Compared to the Control Group
Unweighted versus Weighted**

Characteristics	Without Weight				Weighted			
	AVID	Control	Diff	SE	AVID	Comparison	Diff	SE
Site-Cohort 23	3.1	3.0	0.1	(1.3)	3.1	2.0	1.0	(1.3)
Site-Cohort 24	5.2	3.7	1.5	(1.5)	5.2	3.6	1.7	(1.5)
Site-Cohort 25	2.2	3.3	-1.1	(1.2)	2.2	1.0	1.1	(1.2)
Site-Cohort 26	3.1	4.0	-0.9	(1.4)	3.1	1.7	1.4	(1.4)
Site-Cohort 27	1.2	2.8	-1.6	(1.1)	1.2	0.5	0.7	(1.1)
Sample Size	325	430			325	430		

Source: Baseline survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

Rounding may cause slight discrepancies in sums and differences.

Table A7.2 BC AVID's Impacts on High Exposure Program Group — Selected Outcomes

Outcomes	AVID	Control	Diff	SE
Completed requirements for high school diploma (%)	99.5	98.5	1.1	(0.9)
High school dropouts (%)	3.7	8.1	-4.4 **	(2.0)
PSE applications (%)	73.4	67.5	5.8 *	(3.5)
Applied to university (%)	33.3	31.2	2.0	(3.4)
Applied to college (%)	39.6	31.1	8.5 **	(3.7)
Applied to vocational institute (%)	9.1	8.5	0.6	(2.3)
Applied to apprenticeship (%)	5.9	9.3	-3.4 *	(2.0)

Table A7.2 BC AVID's Impacts on High Exposure Program Group — Selected Outcomes

Outcomes	AVID	Control	Diff		SE
Enrolled in PSE institution (%)	64.1	62.7	1.4		(3.6)
Enrolled in university (%)	27.4	23.7	3.7		(3.2)
Enrolled in college (%)	42.5	41.3	1.2		(3.8)
Enrolled in private college or vocational institute (%)	7.3	5.6	1.7		(1.9)
Enrolled in apprenticeship (%)	3.2	8.5	-5.3	***	(1.8)
Attitudes towards education					
Expected to access PSE within a year after the Grade 12 survey (%)	91.8	84.2	7.6	***	(2.7)
Working full time within a year after the Grade 12 survey (%)	41.4	58.5	-17.1	***	(4.1)
Expected to go to university at Grade 12 survey (%)	61.8	49.9	11.9	***	(4.0)
Would like to get a university degree at Grade 12 survey (%)	63.6	57.1	6.5		(4.4)
Would like to get a non-university degree at Grade 12 survey (%)	48.8	49.9	-1.1		(4.6)
Percentage of students familiar with Student Financial Aid (SFA)	78.8	61.0	17.8	***	(3.9)
Strongly agree or agree 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" (%)	19.5	32.5	-13.1	***	(3.8)
Sample Size	325	430			

Source: BC AVID Pilot Project surveys and PSE administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

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

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