
AN ASSESSMENT OF BCCAT RESEARCH

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Executive Summary

British Columbia's highly differentiated post-secondary education system provides students with a vast array of institution, location and program choices. Student mobility and inter-institutional transfer of course credit is encouraged and supported as a means of integrating the system and enhancing student access. A significant portion of the challenge of integrating the system rests on the system of credit transfer that has been developed under the guidance of the British Columbia Council on Admissions and Transfer (BCCAT). The Council operates by encouraging BC post-secondary institutions to develop policies that facilitate the transfer of post-secondary course credits so that credit granted at one institution may be applied toward credentials at another institution.

Research on student profiles, student experiences and outcomes, admissions, credit transfer practices and on student mobility plays an important role in how BCCAT discharges its mandate. Given the importance of such research to its mandate, the Council commissioned this report with the following four objectives:

- a. To analyze BCCAT research on the success of transfer students and thus the effectiveness of the transfer system.
- b. To examine the effectiveness of the BCCAT research agenda in providing a multifaceted view of transfer students and the transfer system.
- c. To assess any important gaps in the research agenda which if filled could lead to a better understanding of the effectiveness of the transfer system.
- d. To provide comment on the role of BCCAT in establishing a coherent research agenda and conducting research over time.

There are two main thrusts to the analysis of BCCAT research. As applied research, it should support evidence-based decision making by students, the institutions and government. Several kinds of decisions for each of these user groups are examined and the effectiveness of the research agenda in providing information to inform these decisions is analyzed. A second element of the analysis is the context or backdrop against which decisions are made. Issues such as demographic trends, the changing numbers and types of post-secondary institutions in BC and government policies all impact on the options decision makers face and the information that they will find useful. Many of these contextual factors have shifted over the past two decades.

An examination of 67 research papers, reports and newsletters relative to the criteria of decision usefulness indicates that the body of work provides much information that has the potential to inform stakeholder decisions. In this sense, the body of work demonstrates that the research agenda has been effective in providing a multifaceted view of transfer students and the transfer system.

There is a substantial body of evidence provided by a range of studies utilizing different but similar data and different but similar methods that provides consistent and strong evidence on the success of students who utilize the transfer system. By all measures of student achievement and engagement, transfer students of similar academic achievement in secondary school perform as well in post-secondary institutions as direct entry students, are as engaged and experience similar employment and other outcomes. By these standards the system is effective.

The reviewed research appears to be both coherent and contingent on BCCAT's sponsorship. It seems unlikely that much of the research on student mobility and other aspects of the transfer credit system would have been conducted in the absence of BCCAT. Certain themes are obvious in the published work. Examples include student profile reports that date from the 1970's, student mobility research and student outcomes work. Work in these areas is cyclical and due to similarities in data and methods provides valuable longitudinal comparisons.

This said, it is important that the research agenda respond to the evolving needs of stakeholders and to changes in circumstances and context of the system and its stakeholders. The demographic, institutional, educational technology and policy structures of the province are changing such that the choices that students face and the consequences that they enjoy are being influenced by different factors than have been the case in even the recent past. It follows that the research agenda of BCCAT must also evolve if it is to provide information that is needed to understand and aid the choices made by students, the institutions and government. To this end, 7 recommendations for future BCCAT research are presented.

Introduction

The British Columbia (BC) post-secondary education system is highly differentiated. It is comprised of an array of institutions that range from large to small with vastly different program mixes and institutional mandates. The system is widely dispersed geographically and serves students with different career and learning objectives. The system includes institutions that are research intensive as well as some that focus primarily on teaching. Some institutions are mainly publicly funded and some are privately owned. Many institutions have a high degree of institutional autonomy either as a matter of their charter or as a consequence of their history or ownership structure.

Differentiation has served the province and its students well. Differentiated institutions facilitate student access, institutional specialization, and hence economies of scale, and they provide a broader array of program opportunities than would likely exist in a more homogeneous system. This diverse array of education alternatives results in a very high rate of participation in some form of post-secondary education in BC (31) (84). Arguably, the system has facilitated the development of excellence in teaching and research while constraining costs to students and the public.

The BC post-secondary system also strives for a high degree of integration. Student mobility and inter-institutional transfer of course credit is encouraged and supported. Integration has the potential to enhance student access to the system at a lower cost without foreclosing the possibility that students can avail themselves of program opportunities that are available at only a few institutions. Some students benefit from having access to smaller or more teaching-intensive institutions but eventually want to study in more specialized programs that are unavailable at the institution of their first registration. Integration also benefits those students whose objectives include post-graduation studies at an institution other than that of their initial registration.

A significant portion of the challenge of integrating the system rests on the system of credit transfer that has been developed under the guidance of the British Columbia Council on Admissions and Transfer (BCCAT). The Council operates by encouraging BC postsecondary institutions to develop policies that facilitate the transfer of post-secondary course credits so that credit granted at one institution may be applied toward credentials at another institution. BCCAT also examines issues regarding institutional capacity, demand and student mobility, and recommends policies and practices to the institutions that relate to the admission process for direct entry and transfer students.

The BC transfer credit system is formal, it operates at both the programmatic and at an individual courses level and it can facilitate transfer credit to a single or many institutions (80). An important feature of the system is that the Council operates by encouraging institutions to collaborate, rather than by the exercise of authority, fiat or dictate. The Council does not have the authority to mandate institutional policies regarding

admissions and transfer credit. This feature helps to maintain institutional autonomy over admissions policies while providing students with the opportunity to realize the benefits associated with an integrated system in which they can learn and earn credit for a credential at more than one institution pre- and post-matriculation.

Research on various aspects of the capacity, admissions and transfer process is an important part of the Council's modus operandi. With approximately 400,000 students at 38 institutions in BC and the Yukon (60), Council sponsored research potentially provides an important source of information to students, the institutions, and government on capacity and demand, on student mobility and students' characteristics and on outcomes. As importantly, Council-sponsored research provides information to the institutions for their use in developing admissions and transfer policies, particularly regarding the proportion of direct entry and transfer admissions. BCCAT research also provides policy makers with information on whether the system as a whole is working to the benefit of students and taxpayers. The information provided by Council research is available to students, Council members and government and it underpins the collaborative nature of system integration in British Columbia.

Given the importance of research to each of the stakeholders in the system and in particular to the role that research plays in coordinating and integrating the post-secondary system as a whole, the Council commissioned this report which has the following four objectives:

- a. To analyze BCCAT research on the success of transfer students and thus the effectiveness of the transfer system.
- b. To examine the effectiveness of the BCCAT research agenda in providing a multifaceted view of transfer students and the transfer system.
- c. To assess any important gaps in the research agenda which if filled could lead to a better understanding of the effectiveness of the transfer system.
- d. To provide comment on the role of BCCAT in establishing a coherent research agenda and conducting research over time.

Method

There are two main thrusts to this analysis of BCCAT research. As applied research, the research supported by BCCAT should be useful to those to whom it is directed. Students, the institutions and government have access to and the opportunity to use BCCAT research in various decisions that they make. Several kinds of decisions for each of these user groups are examined below and the effectiveness of the research agenda and results are evaluated relative to its anticipated usefulness for these decisions.

A second element of the analysis is the context or backdrop against which decisions are made. Issues such as demographic trends, the changing numbers and types of post-

secondary institutions in BC and government policies all impact on the options decision makers face and the information that they will find useful. Many of these contextual factors have shifted over the past two decades. Changes in these factors will influence the types of research-based information that the system's decision makers will find useful.

Sixty-seven research papers, reports and newsletters were examined and defined as "BCCAT research" for the relevant time period. These reports and papers are available on the BCCAT web site and are listed in the bibliography of this report. Publication dates for these reports are concentrated in the decade starting in 2000 but many are from the previous decade and many draw on data relating to students and the system for the previous decade. The 67 publications do not represent 67 different research projects since the publications include some summary documents, work plans and accountability reports. In addition a discussion was held with BCCAT staff in order to develop an understanding of how the research agenda is developed and how priorities are identified.

For ease of reference and analysis these research papers and reports are classified following a system which was modified and updated to include 27 papers published by BCCAT since 2005. This classification identified two major categories of research and several sub-categories: transfer related research and admissions related research. Transfer related research has four main sub-categories: (i) BC college transfer student profile reports, (ii) student experience and outcome studies, (iii) transcript assessment studies and (iv) other. Admissions related research focuses primarily on applicant and registrant flow analysis for universities and colleges¹. Several of the recent reports on student mobility were prepared in partnership with the Student Transitions Project. All papers and reports are listed in the bibliography of this paper which is organized under the above headings. References to specific papers in the text of this report are by the number assigned to the reports in the bibliography.

This report does not explicitly evaluate the research methods employed in the reviewed papers. The research methods and statistical analysis appear to be of a uniformly high standard and there is a comforting degree of consistency in the main findings of research reports produced by the same or different authors in different time periods or on different data sets related to similar variables and employing different research methods. There seems to be little to gain from a more detailed critique of individual papers or the methods that were employed.

Useful summaries of the main results of BCCAT research also appear in (60) and (57). The following material does not repeat these summaries but uses them plus the original papers to address the four objectives listed above.

¹ When reference is made to a university, university college or college in the context of a cited research report the terms are used as they were in that research report. When referring to the current system, the terms teaching university, research university, college, institute or private post-secondary institution are used.

A Framework for Assessment

BCCAT research is applied research. Its purpose is to help decision makers reach more informed conclusions than they would have reached in the absence of information provided by that research. The research results should facilitate evidence-based decision making by students, the institutions and government. Therefore the following evaluation focuses on the potential of the research results to impact decisions.

In a paper commissioned by BCCAT, Munro (53) examined issues that would be associated with conducting a benefits study of the BC articulated post-secondary system. The purpose of that report was to examine the feasibility and desirability of studying the benefits of the transfer system as a whole. As a part of his examination, Munro identified benefits that might arise for students, the institutions who participate in the system and society more generally. He concluded that BCCAT should undertake a benefits study.

In the spirit of the Munro paper, this paper will focus on the benefits to the stakeholders in the system. But, instead of focusing on the benefits of the system as a whole, this paper focuses on the benefits of research produced by BCCAT during the last two decades, and it focuses on the decisions of the people and institutions that are part of the system.

The mandate of BCCAT defines the domain of the research as the transfer credit system and it identifies the decision makers as students, post-secondary institutions and government.

Decision makers make cost benefit trade-offs regarding the post-secondary education options that they face. Those trade-offs involve a variety of considerations, many of which lie outside of the mandate of BCCAT. The basic question addressed here is how does information provided by research on the transfer credit system help students, the institutions and government assess the costs and benefits that they expect to experience as a consequence of the transfer credit option? It is important to note that the evaluation does not focus on whether the research identifies costs and benefits of the system as a whole. Rather, it focuses on whether BCCAT research helps individuals, institutions or government understand how the transfer credit system impacts on the costs and benefits to them.

A second element in the assessment framework is the context in which decision makers act. As the context changes, the research agenda must adapt and change too if it is to provide relevant information to decision makers. To the extent that the context changes through time, so will the opportunities and priorities faced by decision makers and as a consequence so will the information they need to make evidence-based decisions. In short, an effective research agenda for BCCAT would respond to the information needs and decisions that various actors in the system make and it would respond to the social, political and economic context in which they make choices. This assessment framework provides the basis for determining the completeness of BCCAT's research agenda over the past two decades and whether or not there may be gaps or irrelevancies in it.

Evidence for Decision Makers

BCCAT's mandate identifies three main sets of stakeholders who make decisions in and about postsecondary education in British Columbia: students and prospective students, the institutions and government. Each of these actors is an actual or potential consumer of the research produced by BCCAT. Note that the decision categories and decision makers are overlapping categories. Information is likely to be relevant to more than one group and more than one decision.

Students and Potential Students

The choices that students make are of primary concern, not only to students, but to the institutions and government, as it is these choices that are a main focus of public and institutional policies and practices. By providing information to inform student choices and enhance outcomes experienced by students, BCCAT can better fulfill its mandate. Knowledge of how the information provided by BCCAT research can support student choices can also assist government and the institutions to develop policies which will assist students.

BCCAT develops and provides resources such as the BC Transfer Guide for students and resources for faculty and the institutions, such as the Articulation Handbook. In providing these resources, the Council communicates the results of its research to stakeholders and it makes available the impact of research and deliberations on institutional policies.

For purposes of this analysis, students' (and the advisors of students) decisions are classified into six categories: (1) their choice upon graduation from secondary school on whether to attend a post-secondary institution, (2) having decided to enter the system, their choice of which degree or vocational programs to attend, (3) which type of institution, a research university, teaching university, college or institute, in which to initially enroll, (4) whether to maintain their primary registration at the institution which they first entered or to transfer to another institution, (5) whether to enroll in one or more courses at another institution while maintaining their primary registration at a given institution, and (6) what if any additional education to pursue after earning their first credential or having left a post-secondary institution. Obviously, BCCAT is not concerned with all aspects of these very complex choices, only with those aspects of the choices that are impacted or potentially impacted by the transfer system.

Does research sponsored by BCCAT provide useful information to assist students in making these decisions? Research would be useful if it could assist students to identify costs and benefits attendant to the choices that they face in each of these areas. Note that this question ignores communications issues. It is assumed that students and their advisors know about the research. Note too that students may not actually engage in the "rational process" implied by this analysis. They may be "unfocused, unsystematic, or indifferent to transfer" (23). The analysis is of the "as if" variety; that is the research results are analyzed as if students followed an explicit decision process. In this sense, the analysis identifies only the potential of research to be useful in decisions.

With respect to the decision of whether to enter the post-secondary system, two useful research projects are (32) and (33). (32) followed a sample of high school graduates from 1988 for ten years after graduation and observed their educational and occupational outcomes. (33) used survey data from research university graduates five years after graduation in 1996. (34) replicates this study for the class of 2000. In (32) the rate of participation in some form of post-secondary education is very high with 80 percent attending within one year of secondary completion and 72 percent of the initial non-attenders doing so within ten years. Consistent with other outcomes studies, these papers show the benefits to graduates and society of a post-secondary education. Post-secondary graduates have higher incomes, have higher rates of employment and are more socially engaged than non-graduates. Graduates of the system who have utilized the transfer credit system to transfer from a college to a university demonstrate similar outcomes to those who did not (33). Transfer students tend to be somewhat older, are more likely to be female, are slightly less likely to enter the professions and have somewhat higher debt levels after graduation. The transfer credit system increases access, particularly for students who were not high achievers in high school (20) and it facilitates entry to the post-secondary system for those who did not complete high school or chose to pursue other interests for a period of time after graduation from secondary school (85). Thus for both the traditional secondary graduate who proceeds directly from high school to university or college as well as for others, the body of research produced by BCCAT demonstrates the benefits of a post-secondary education and it demonstrates that those benefits are made accessible by the transfer credit system to a range of students who might not otherwise be in a position to realize them.

A second choice to be made by a potential student is that of which vocational or academic program to pursue. This choice is of course influenced by a large number of factors such as interest which are largely unrelated to the transfer credit system. An “exploration benefit” may arise for students who are unsure of or may change their program preferences after initial registration. For example if students can earn transferable credits while attending institutions that have a broader range of program options that might include both academic and vocational programs, and if they can sample courses from a variety of vocational and academic fields and then transfer credits earned to another institution which offers the ultimately preferred program, they will experience this exploration benefit. There is evidence that eligible students do in fact transfer from one type of institution to another although at a somewhat decreasing rate in recent years (72, 73). Whether institutional transfer is accompanied by transfer to a different kind of program is more difficult to discern. Students who transfer in some professional programs such as engineering or nursing tend to stay in the same programs after transfer. The overwhelming majority of students who transfer from a college to a university continue to study in the Arts and Sciences at university (73). This could be consistent with the exploration benefit if the field of study within Arts and Science changes but it could also be consistent with similar program choices in college and university. The data are too coarse grained to discern whether particular interests within the Arts and Sciences have been piqued by the opportunity to explore interests at the institution of first choice. BCCAT research, particularly on student transitions, is

potentially useful to students when choosing a program in that the availability and use of the transfer system increases exploration benefits.

A third choice made by students relates to the decision of which type of institution to initially attend. This of course is the primary argument in favor of the transfer credit system, namely that students can choose one institution initially and then transfer to another institution without penalty as their interests or circumstance change. (89) shows that about 40 percent of the 2001/02 high school graduating class attended more than one BC post-secondary institution. Does the research data support the conclusion that the initial choice of an institution can be made without concern that there will be a penalty of some sort if they choose to transfer? A penalty could arise if academically qualified students who wish to transfer are unable to, if they are less likely to succeed in the institution to which they ultimately transfer than if they had entered that institution directly, if their career prospects are more limited by initially choosing one type of institution over another or if they find their overall academic experience less satisfying. There is no evidence that an academically qualified student who wants to transfer can not do so (10) and the minimal entry averages for transfer to a university may be decreasing (71). Some applicants who do not meet direct entry standards for the universities may become qualified for university entry as a transfer student (10). A number of research projects (20), (30), (33), (34) support the conclusion that students are as likely to succeed in university after transferring from a BC college or university college as if they entered university directly from high school. In summary, the evidence supports the conclusion that students should feel free to choose an initial institution without concern for possible penalties that could arise if they subsequently choose to transfer to another institution.

A fourth possible choice area for students is whether in fact to change institutions after some period of study at the institution which they first chose to attend. Of course the issues discussed in the preceding paragraph are relevant to this decision. In addition, students may have concerns around the mechanics of transfer: whether all course work taken at the first institution will be credited, whether programs of choice will be open to them and whether the transfer experience will be a satisfying one. Evidence has been produced on all of these points. Research supports the conclusion that about 85 percent of course credits earned in college by college transfer students are transferable to a research university (25), that most students are able to transfer to their institution of choice (26) and that the transfer process is on balance a satisfying one (22) and (23). Evidence exists to inform the transfer- or- not decision that students face.

A fifth decision faced by both direct entry and transfer students is whether to take courses from another institution while maintaining their primary registration at a given institution. A student may wish to do this if a particular course is not available at the primary institution either because of its specialized nature or because it was full or not offered at a convenient time. While institutions have residence requirements, it is not unusual for a student to seek course work from another institution. Distance education options and the increasing density of institutions make such actions feasible. With the exception of (12), little evidence exists on the benefits and costs of this or for that matter on the extent to which it happens.

A sixth decision type is the continuation decision, either after having completed a credential or left an institution. Somewhere between 40 and 50 percent of those who left an institute or college program pursued further study (26), (27), (28). The cost to these students of further study is decreased if they received transfer credit for course work taken at their first institution. The data supports the conclusion that students do not experience difficulties in receiving credit for previous courses and that most students are satisfied with their post-graduation transfer credit experience (28). Less is known about the post graduation re-entry rates or the experiences of graduates of the teaching and research universities.

Does research produced by BCCAT help students or potential students assess the benefits and costs of the choices they face when making decisions regarding their post-secondary education? The brief answer is yes. Further, the body of research should provide students with comfort that considerable flexibility exists and that the cost of changing institutions or programs is relatively low and the benefits of a post-secondary degree are not decreased by transfer.

The Institutions

The institutions are concerned with student success, enrollment planning and the cost of operating student admissions and services. Much of the information that is relevant for student decisions is also relevant for institutions' decisions in that the institutions are concerned with student success and so the research that produced that information will not be discussed further in this section.

Enrolment planning and management is important to the institutions because it relates directly to resource availability and demand. Revenue flows are determined by the number and, to a certain extent, the type of students, either directly through tuition or indirectly through grants from government. Failure to meet enrollment targets can and does have major financial implications for the institutions. Enrolment is also the major driver of resource expenditures by the institutions. Many human and capital resources of the institutions are acquired for the long term, and semesterly or yearly adjustments, while possible, are expensive. Thus both long and short term planning for a host of variables in the institutions is dependent on accurate enrollment planning.

Effective enrollment planning requires that estimates be made of a number of variables. Chief among these is the provincial supply of both direct entry and transfer students. Of considerable importance is anticipated demand by program and degree type, acceptance rates for offers of admission, continuation rates for enrolled students, graduation rates, course loads and anticipated enrollment by designated category of student, including aboriginal, international and so on. Many institutions spend considerable resources predicting and managing these variables and many have developed extensive internal data and analytic capacities to assist in managing enrollment. BCCAT research can assist with these analyses in two respects. First, the cost of conducting the research may be

either externalized or shared among institutions. Second, there is a potential cost saving through learning from other institutions and sharing information on best practices.

The institutions are concerned with student academic success and with student satisfaction. Increasingly measures of student satisfaction with their curricular and extra-curricular experiences are used by parents, students and peers to gauge the prestige and performance of institutions. The institutions are interested in attracting students who will succeed academically, who will be “engaged” in their institutions and who will feel that their experience while attending the institution is and was worthwhile. Managing these variables requires that an institution manage a whole host of factors, many of which are unrelated to the transfer credit system. However research that assists the institutions to recruit and retain students who will be successful and who are expected to be engaged and satisfied students and graduates will be valued.

The colleges, teaching universities, institutes and private post-secondary institutions benefit from having their courses recognized in the Transfer Guide. Such recognition provides validation to the quality of the courses and provides comfort to students and others that courses are of a quality standard that will result in them being granted degree credit at another institution. BCCAT research indirectly can assist in this validation process by examining student achievement in subsequent course work.

More generally, the institutions have an interest in maintaining the voluntary nature of the BC transfer credit system. Any research that helps the institutions voluntarily reach agreement regarding which courses and students should receive transfer credit will be useful in maintaining the voluntary character of the system. Additionally, the BCCAT committee and decision making process as well as research may help the institutions learn best transfer credit practices (41) and generally share information on admissions and related policies.

Several categories of BCCAT research are directly relevant to the institutions for these purposes. Profile studies (10), (11), (13), (14), (15), (16), (17), (18) and (19) provide information on what transfer students are being admitted by the universities, where they come from, which Faculties they enter, whether they are full or part time, course loads, academic performance, and completion rates. Enrollment management is assisted by the applicant studies of BCCAT (75), (76), (77), (78), (79) and student mobility studies (70), (71), (72), (73) and (81) which provide detailed information on demand and unmet demand for post-secondary spaces in the province as well as transfers from and to specific institutions. The Student Transitions Project has conducted transfer student mobility studies since 2007. Collectively, these data and analyses provide a wealth of information to the institutions that could support enrollment planning and management. The robustness of this information will improve as the central data warehouse data base and the STP becomes more complete and more analyses are conducted on it.

By all measures of student achievement and engagement, transfer students of similar academic achievement in secondary school perform as well in post-secondary institutions as direct entry students (20), are as academically engaged (24) and experience similar

employment and other outcomes (30, 31). Indeed this appears to be reflected in the actual admissions decisions of the universities in that, depending on the institution, between 30 percent and 50 percent of transfer and direct entry admissions were of transfer students. More recent and as yet unpublished data shows that these percentages have declined marginally. A substantial body of evidence provided by a range of studies utilizing different but similar data and methods provide consistent and unequivocal evidence that students who transfer are successful and by implication, the transfer system is effective. The corpus of research provides the institutions with a wealth of information that is relevant to several important decisions that they make.

Government and Public Policy

The government of British Columbia is an important decision maker within and about the post-secondary system, both for the obvious reason that the government provides a substantial portion of the funding for the system and because the system as a whole serves a number of important public policy objectives. Education in general and post-secondary education specifically is an important strategic objective for the government. For example one of the “five great goals” of the current government is to make BC “the best educated most literate jurisdiction on the continent”.

Some of the current Advanced Education and Labour Market Development objectives are to provide students with access and choice, target funding to address areas of highly skilled labour market demand, develop policies and programs to increase the participation rate of aboriginal students, improve adult literacy and establish a policy framework for private post secondary institutions (Government of British Columbia, ALMD web site). Public policy with respect to post-secondary education is particularly concerned with equitable and affordable access. At present, the Minister of Advanced Education and Labour Market Development emphasizes two additional objectives: “promoting diversity”, which includes integrating immigrants into the provincial economy, and increasing Aboriginal representation in the economy by providing Aboriginals and immigrants with skills training and education opportunities.

Apart from these specific public policy objectives, government appears to be concerned with two over arching policy objectives: to balance the supply of post-secondary spaces with demand for them, and to provide services of a high quality at a low cost to students and the public purse. While the Ministry has access to supply data directly from the institutions, BCCAT has addressed the issue of the system-wide supply of university spaces (79). Program and degree level supply in some disciplines (e.g., medicine) is highly regulated by the government through funding mechanisms but for other programs (e.g., business) this is not the case. The BCCAT research that was reviewed as part of this project does not appear to be primarily directed toward summarizing information on the supply of post-secondary spaces either globally or by program.

Predicting demand or providing data that would facilitate demand predictions is a challenging task. Global demand for post-secondary spaces is a function of, among other factors, secondary graduation rates and the participation rate by people in the post-

secondary system. Apparent demand for post-secondary spaces, in a regulated and largely public system, is also influenced by the supply of spaces in that students cannot register in spaces that do not exist. Participation rate information in undergraduate programs by secondary school graduates is available in (31), (32) (84) and for institute and college leavers in (28), (29), and (34). However, it would be a mistake to conclude that these data provide sufficient or even necessary information for an adequate supply and demand analysis.

Regardless of global supply and demand issues, or demand for specific institutions or programs, the transfer credit system has the potential to increase student access to and choice within the system as a whole. While not mandating transfer policy, the Ministry expects institutions will accept transfer students. Access to the system as a whole is facilitated if the supply of spaces in colleges or teaching universities is less constrained than space in the universities. Choice is facilitated if students have the opportunity to move from one institution to another as their opportunities and preferences change. Student mobility data strongly supports the conclusion that this is happening. Student mobility studies (70), (71), (72) and (73) provide useful insights into the numbers of successful and eligible transfer students, the institutions they transfer to and from and academic achievement levels at their sending institutions. The high student mobility rate of between 15 and 19 percent indicates that students are utilizing the transfer system. These data appear to demonstrate that the transfer system does increase student choice.

One of the strongest arguments in favor of the BC transfer system is that it offers the potential to lower costs for both the system as a whole and for students. Students' costs of obtaining a post-secondary education are likely to be lower if they attend an institution close to their home and if they receive education of equal quality but at a lower tuition cost. Colleges and teaching universities have the potential to provide instruction at a lower cost to the system than do research universities. If teaching loads are higher and instructors' salaries are lower in colleges, the labour cost of instruction will be lower (assuming that such savings are not off-set by lower class sizes). Capital costs are also likely to be lower in colleges than research universities because research university facilities often include research facilities which are costly to construct and operate. These cost savings need to be balanced against the value of research that is produced at research universities which is often a joint-product of the university teaching. There appears to be no research on whether the system does lower the cost of either the system as a whole or to students. Transfer students have slightly higher debt loads than non-transfer students (33) but this does not necessarily indicate that these students have incurred a higher cost.

Many of the studies cited above as being of interest to students and the institutions are also of interest from a public policy perspective. Of particular interest, the student outcomes surveys indicate that transfer students have outcomes that are little different from direct entry students. These results should provide government with the assurance that the transfer system as a whole is working effectively.

The Context

Students, the institutions and government operate within an evolving social, policy and economic context that is relevant to the decisions they make and to the information that they would find useful. The demographic, institutional, technical and policy structures of the province are changing such that the choices that students make and the consequences that they enjoy are influenced by different factors than have been the case in even the recent past. It follows that the research agenda of BCCAT must also evolve if it is to provide information that is needed to understand and aid the choices made by students, the institutions and government.

A useful historic overview of the British Columbia post-secondary system since receipt of the MacDonald report in 1962 is provided in (53, 55). In its essence the MacDonald report recommended an expansion in the number of universities in the province, resulting in the establishment of Simon Fraser University and the University of Victoria, and the creation of a number of community colleges which would offer academic courses designed for transfer to the universities. As well the colleges would offer programs of a technological and semi-professional nature.

The MacDonald report also proposed a system in which student transfer would be from colleges to the universities where degree completion for qualified students would occur. In this sense the system was seen to be hierarchical; students would be able to flow from the colleges to the universities which were the degree granting institutions. BCCAT was created in 1989 to encourage the institutions to develop policies to facilitate the transfer of course credit, primarily from the colleges to the universities.

Change to the system and the socio-economic context in which it operates has occurred continuously since the MacDonald report but changes to the structure of the post-secondary system have accelerated in recent years. This section outlines some of the changes that have occurred to the demographic, institutional, and technological and policy context in which stakeholders make post-secondary choices. It then addresses how these changes might impact the research agenda of BCCAT. Recent BCCAT research has been influenced by a number of these changes but continued evolution of the research agenda will be necessary if the research is to continue to provide useful information to the system's stakeholders.

Demographic Change

Five features characterize demographic changes in BC: modest population growth, increasing concentration of the population in the lower mainland, an aging population, a growth in the number of immigrants and a decline in employment in the resources and manufacturing sectors with a growth in the service sector.

While total population of the province is expected to grow modestly over the next ten years, the population of the 18 to 24 year old cohort, the traditional age group of direct entry post-secondary students, is not expected to grow and may, in fact, decline. Some regions, for example the Interior and Vancouver Island, will experience a more marked decline in population of this age cohort while the Lower Mainland numbers will remain approximately constant. These trends are in marked contrast to growth in this cohort during the preceding two decades.

The impact of this change in demographics on demand for post-secondary spaces is likely to be offset by three factors. First at a national level, the proportion of secondary graduates who participate in post-secondary education is increasing (AUCC). However, it should be noted that the Student Transitions Project data over the past 6 years show that the secondary graduate transition rates in BC have remained stable for both immediate and delayed entry students. Second, the economy is shifting from a heavy reliance on resources and resource processing to services. The labour market is following. A higher proportion of jobs require post-secondary education than has been the case in the past (COPS BC Unique Scenario, 2007-17). A number of these jobs are expected to require re-training through time. Third, immigration will likely increase the demand for post-secondary education services as immigrants seek to meet the education and credential standards demanded by the local economy.

Demographic changes are likely to favor a continuing strong demand for post-secondary education but the students and the kinds of programs they want are likely to shift. Demand for post-graduate programs will increase. Adult basic education will increase in importance. Trades and technical skilled individuals will require more scientific skills as technology becomes more advanced. Re-credentialing foreign trained professions will become more important. Each of these factors is likely to increase the importance of student mobility and students' needs for transferring credit from prior learning and education to new institutions and programs.

Institutional Change

There has been a marked and obvious change in the number and kinds of post-secondary institutions in the province over the past decade and more subtle change in the funding of some of the institutions. Of the 38 institutions currently listed in the transfer guide, 11 are private, 14 are colleges and institutes and 13 (counting the open learning component of Thompson Rivers University and the University of British Columbia-Okanagan Campus as separate institutions) are public universities. In contrast, the 2000-2001 annual report to the Ministry listed 33 institutions of which 6 were universities, 17 were colleges or institutes, 5 were university colleges and 4 were private institutions. There are now more private institutions and universities. It is clear that the number and variety of institutions and the range of choice for students is substantial and has grown. Furthermore, all public and some private post-secondary institutions have the authority to grant degrees following approval of the Degree Quality Assessment Board. The system is much more differentiated and less hierarchical now than it was ten years ago.

Institutional funding has also changed over the past two decades. For the research universities in particular, the proportion of their total revenue from enrollment based grants has declined and the proportion provided by tuition and research revenue has increased. This trend provides incentive for the research universities to emphasize graduate education which is more closely tied to research funding than is undergraduate education. It also provides incentives for all institutions to recruit international students as they are not included in the enrollment funding base but they do pay higher tuition than domestic undergraduates.

These institutional changes have substantially increased the range of choices that students have in British Columbia and have made the system for granting transfer credit more complex. It is likely that the increasing number of degree granting institutions and the declining numbers of students in the traditional age cohort will make the institutions much more competitive in recruiting and retaining students. Whether this translates into a greater reluctance to grant transfer credit or not is unknown. Competition for students might motivate institutions to grant transfer credit more readily as they attempt to recruit new students or it might mean that institutions will do all they can to retain students thus motivating fewer to transfer. It seems clearer that competition for and the number of second entry students who require additional training and education will increase.

Education Technology

The wide-spread availability of high speed internet access has offered great potential to vastly increase access to post-secondary courses and programs for the past 15 years or so. Data on the extent to which this has actually happened in British Columbia is difficult to come by. Most institutions offer some courses or programs that are wholly or partly delivered at a distance using the internet. When or if this technology becomes widely spread, a number of transfer credit issues will be exacerbated. Institutions will be faced with the problem of whether to grant transfer credit for courses and programs taken from an institution anywhere in the world. Students will have the opportunity to take selective courses at a potentially lower cost and they will have access to a greater variety of courses and programs.

Public Policy

As a largely publicly funded system, the BC post-secondary education system should be responsive to public policy. Public policy objectives shift through time bringing different pressures and opportunities to bear. The BCCAT research agenda should be responsive to public policy objectives if it is to provide information to the stakeholders who use information provided by the research.

A particular priority for government at present is to help aboriginal students start, stay in and succeed in post-secondary education. Issues of access, cost and choice which impact all post-secondary students are particularly important to aboriginal students.

Research Implications and Recommendations

This review and analysis of BCCAT research has demonstrated that the research produced by BCCAT during the past two decades is potentially relevant to decisions of key stakeholders in the BC post-secondary system. This section addresses two issues: it provides commentary on the role of BCCAT in establishing a coherent research agenda and conducting research over time, and it makes several recommendations for future research given the evolving context of the BC post-secondary system.

BCCAT's Research Role

BCCAT conducts some research in-house but mainly contracts with others, primarily the institutions, to conduct research on its behalf. Priority projects are identified by staff or by the various standing committees of BCCAT and approved by the Council. There appear to be five main sources of research ideas and approaches. On occasion BCCAT partners with others to examine issues that are of particular interest to BCCAT. As an example of this, research conducted by the research universities on student outcomes and engagement has been used to examine differences that may exist in these variables between direct entry and transfer students. Second, a deliberate attempt is made to test assumptions that others appear to make about the transfer system. For example, transcript analysis has been used to test the assumption that transfer students did not get all the credit they earned while an upcoming "Credits to Graduation" study examines whether transfer students are required to take more course credits to graduate than direct entry students. Third, some projects result from engaging with stakeholders around topics that are of interest to them. A recent example in (64) reports the results of a visioning exercise around the framework and definitions that have been used to measure the mobility of transfer students. Fourth, BCCAT collaborates with others to address certain issues. For example, the Student Transitions Project is a collaborative effort between the Ministries of Education, Advanced Education and Labour Market Development and BC public post-secondary institutions. Finally, BCCAT will sometimes sponsor projects that come to its attention as "good ideas" based on independent research conducted by individuals in the system or from other sources. An example of this kind of research is found in (22).

Would research on student mobility and outcomes as well as on other topics of interest to BC post-secondary stakeholders have been conducted in the absence of BCCAT and in more recent years the Student Transitions Project? It seems unlikely that any single institution or individual would have had the incentives or resources to conduct the system-wide analyses that have been undertaken by BCCAT. Moreover, it is unlikely that another entity would have the credibility that BCCAT has enjoyed with the institutions. Finally, it is important that the research on student mobility and transfer be made available and used by the various stakeholders. The Council has used the talents from some of its member institutions both to identify and conduct research, thus increasing the knowledge and acceptance by Council members. It seems safe to conclude that, with few exceptions, the issues addressed by BCCAT research would not have been addressed had the Council not existed.

Is the research agenda coherent? Certain themes are obvious in the published research of BCCAT. Examples include student profile reports that date from the 1970's, student mobility research and student outcomes work. Work in these areas is cyclical and due to similarities in data and methods provides valuable longitudinal comparisons. This said, it is important that the research agenda respond to the needs of stakeholders and to circumstances and context as they shift through time. It is desirable that the research agenda change through time in response to circumstances and needs. So, the issue of coherence may best be judged relative to stakeholder needs and context rather than by similarity in topic, data or method. Of necessity the agenda should evolve through time.

Future Directions

To date BCCAT research has focused primarily on students who transfer from colleges to universities. While broad in scope, the goals of the research agenda appear to have been to provide a rich source of evidence on the numbers, performance and characteristics of those students who move from one kind of institution to another. This has provided much information that appears to be useful to students, the institutions and government. Overall the system appears to have promoted a relatively high degree of student mobility. For example, in (64) it is noted that from 2006/07 to 2007/08, over 26,000 students (out of a post-secondary population of about 400,000) moved between post-secondary institutions. However, fewer than 20 percent of these "movers" were college to university transfers. This would appear to reflect the quite dramatically shifting context to the BC post-secondary system.

Given these changes, seven recommendations are presented below for research directions that the standing committees and Council should consider. Some of these recommendations are consistent with those presented in (64) and all are consistent with the review conducted herein. The recommendations are advanced not so much to fill gaps in the research as to recognize the impact of the changing context on the information needs of stakeholders. The recommendations may require that different sources of data be developed or accessed, that different research methods be employed or that new research partnerships be developed. For example, where primary data on student enrolment is not available, survey and interview techniques might be used to generate useful information.

Recommendation 1

BCCAT research should focus on the transfer of course credits between and among institutions in addition to the transfer of students and it should recognize that many institutions are both sending and receiving institutions.

Rationale: Institutional mandate change, changes in education technology and increasing numbers of post-secondary institutions in the province have vastly increased the number of options that students have. Students are as likely to pick and choose courses from institutions or change institutions in non-traditional ways as they are to follow the hierarchical patterns that were dominant in the last century. Therefore mobility research should focus on the multifaceted and

multidirectional patterns of course credit mobility and it should examine the flow of students from and to a variety of institutions.

Recommendation 2

BCCAT should include private post-secondary institutions in its analyses of course credit and student transfer.

Rationale: Increasing numbers of post-secondary students are choosing to attend private post-secondary institutions and the number and variety of such institutions is increasing. As these institutions are part of the choice set faced by students and it seems likely that students will want to transfer course credits to and from these institutions, the research domain of BCCAT should be expanded to include private institutions.

Recommendation 3

BCCAT should endeavor to identify specific sub-populations of students such as aboriginal students, immigrants and adult basic education entrants to determine transfer patterns and outcomes for these sub-populations.

Rationale: Public policy has identified certain sub-populations of the population as requiring particular attention. The information requirements and circumstances of these groups, the institutions and governments, suggest that research on their mobility patterns and outcomes is of particular interest.

Recommendation 4

BCCAT should endeavor to develop comparisons with other jurisdictions in Canada and elsewhere on all aspects of student mobility.

Rationale: At present there is little comparative data by which to judge the relative effectiveness and success of the BC transfer system. Many jurisdictions encourage course credit and student mobility. Comparative data would provide an important benchmark against which the effectiveness of the BC system could be evaluated.

Recommendation 5

BCCAT should endeavor to determine why some post-secondary students are leaving the province and whether this out-migration is balanced by inflows of students particularly from other jurisdictions in Canada.

Rationale: Attracting and retaining high quality human capital will increase the competitiveness of the BC economy. Losing high achieving students to other jurisdictions has a cost to the province if these losses are not offset by gains from

elsewhere. Focusing on Canada, rather than on all non-domestic students, is important because the employment opportunities for Canadians in BC are greater than it is for non-Canadians. Such data may also help to evaluate the competitiveness of BC post-secondary institutions in attracting students.

Recommendation 6

BCCAT should develop data on the population and mobility of international students in the BC post-secondary system.

Rationale: Attracting and retaining international students is a strategic objective of many institutions in the province and is encouraged by public policy. International and Canadian competition for such students is intense. A robust transfer credit system might provide BC institutions with a competitive advantage in recruiting international students.

Recommendation 7

BCCAT should expand its analysis of those who graduate or leave institutions to determine their life time education and educational mobility patterns.

Rationale: Labour market and demographic predictions strongly suggest that the importance of life long learning will increase. An effective transfer credit system will lower the cost and potentially increase the effectiveness of the institutions in providing life long learning opportunities.

Summary

This review had four objectives: to analyze BCCAT research on the success of transfer students and the effectiveness of the transfer system, to examine whether BCCAT research provides a multifaceted view of transfer students and the transfer system, to identify important gaps in the research agenda and to provide commentary on the role of BCCAT in establishing a coherent research agenda and conducting research over time. The analysis was conducted by examining whether BCCAT research has the potential to assist important stakeholders in the BC post-secondary system to make decisions in and about the system.

BCCAT research was found to be potentially useful to students and potential students, the institutions, and government. Information provided through BCCAT research demonstrates that there appear to have been minimal barriers to student mobility in BC. Significant numbers of students are able to and in fact do transfer from colleges to research universities. Students do receive credit at the receiving institution for the vast majority of the courses they took before transferring. Transfer provides some initially lower achieving students with access to the system. When students transfer they are successful and engaged. The research provides institutions with important information on the supply and demand of students and has the potential to assist them with enrollment planning. Government has access to data from BCCAT that demonstrates that the transfer system has worked well and has increased access and it has likely decreased costs to students and the system. From these perspectives, the BC transfer system has been effective.

The social and policy context in which the transfer system has operated in the past has changed quite dramatically. The system has evolved from a relatively simple hierarchical system in which students who transferred did so by moving from a college to a university to a complex organic system in which students face many options for earning credentials and for studying at many different kinds of institutions. It seems likely that the system is moving (or perhaps has moved) from a position of scarce supply of spaces to one of abundance of supply and choice. Life-long learning is increasingly important. What has been a coherent research agenda must now adapt if the information that it produces is to continue to support an effective transfer system. For these reasons, seven recommendations for shifting the emphasis of BCCAT research were presented.

Bibliography

A. Transfer Research

A.1 Student Profiles

- (10) Heslop, Joanne, 2001. Profile of British Columbia College Transfer Students Admitted to BC Universities 1994/95 & 1998/1999. Vancouver, B. C. Council on Admissions and Transfer.
- (11) Martell, Jim and Alan Wilson, 2009. Profile of BC College Transfer Students Admitted to the University of Victoria 2003/04 to 2007/08. Vancouver, B. C. Council on Admissions and Transfer.
- (12) Giguere, Louis, 2002. A Profile of B.C. Transfer Students Registered with the B.C. Open University. Vancouver, B. C. Council on Admissions and Transfer
- (13) Lambert-Maberly, Ashley, 2009. Profile of BC College Transfer Students Admitted to the University of British Columbia 2003/04 to 2007/08. Vancouver, B. C. Council on Admissions and Transfer.
- (14) Kupp, Linda, and David Zajac, 2009. Profile of BC College Transfer Students Admitted to the University of Northern British Columbia 2003/04 to 2007/08. Vancouver, B. C. Council on Admissions and Transfer.
- (15) Hamilton, Kristen, Dorys Crespín-Mueller, and Heather Friesen, 2009. Profile of BC College Transfer Students Admitted to Thompson Rivers University 2003/04 to 2007/08. Vancouver, B. C. Council on Admissions and Transfer.
- (16) Heslop, Joanne, 1997. Profile of B. C. College Transfer Students Admitted to Simon Fraser University 1991/92 to 1995/96. Vancouver, B. C. Council on Admissions and Transfer.
- (17) Heslop, Joanne, 1998. Profile of B.C. College Transfer Students Admitted to Simon Fraser University 1992/93 to 1996/97. Vancouver, B. C. Council on Admissions and Transfer.
- (18) Heslop, Joanne, 1998. Profile of BC College Transfer Students Admitted to Simon Fraser University 1993/94 to 1997/98. Vancouver, B. C. Council on Admissions and Transfer.
- (19) Heslop, Joanne, 2004. Profile of BC College Transfer Students Admitted to Simon Fraser University 1998/1999 to 2002/03. Vancouver, B. C. Council on Admissions and Transfer.

A.2 Student Experience and Outcome

- (20) Heslop, Joanne, 2004. *Alternate Paths to SFU: A Comparative Academic Performance Study of BC College Transfer Students and BC Direct Entry Secondary School Students Admitted to SFU from 1992 to 1999*. Vancouver, B. C. Council on Admissions and Transfer.
- (21) Andres, Lesley, Adnan Qayyum, and Jane Dawson, 1997. *Investigating Transfer Project Phase I: Transfer Experiences of Students from Community College to University*. Vancouver, B. C. Council on Admissions and Transfer.
- (22) Andres, Lesley, 1998. *Investigating Transfer Project Phase II: Community College Students' Perceptions of Transfer: The Case of Douglas College*. Vancouver, B. C. Council on Admissions and Transfer.
- (23) Andres, Lesley, and Jane Dawson, 1998. *Investigating Transfer Project Phase III: A History of Transfer Policy and Practice in British Columbia*. Vancouver, B. C. Council on Admissions and Transfer.
- (24) Pendleton, Sham, and Ashley Lambert-Maberly, 2006. *Undergraduate Student Survey on Student Satisfaction and Engagement: Transfer Student Experience vs. Direct Entry Student Experience*. Vancouver, B. C. Council on Admissions and Transfer.
- (25) Karlinski, Jean, 2000. "Transcript Assessment Studies: What Transfers? What Doesn't?", Research Report, October, 2000. Vancouver, B. C. Council on Admissions and Transfer.
- (26) Education and Labour Market Information Service, 2001. *Admissions and Transfer Experiences of Students Continuing their Studies in British Columbia*. Vancouver, B. C. Council on Admissions and Transfer.
- (27) Lawrance, Jill, 2003. *2002 Admissions and Transfer Experiences of Students Continuing their Studies in British Columbia: Findings from the BC College and Institute Student Outcomes Survey*. Vancouver, B. C. Council on Admissions and Transfer.
- (28) BC Stats, 2009. *2008 Admissions and Transfer Experiences of Students Continuing their Studies in British Columbia*. Vancouver, B. C. Council on Admissions and Transfer.
- (29) BC Stats, 2006. *2005 Admissions and Transfer Experiences of Students Continuing their Studies in British Columbia: Findings from the BC College & Institute Student Outcomes Survey*. Vancouver, B. C. Council on Admissions and Transfer.
- (30) University Colleges of B. C., 2004. "Comparison of Outcomes of B.C. University College and University Baccalaureate Graduates," Research Results, May, 2004. Vancouver, B. C. Council on Admissions and Transfer.

(31) Andres, Lesley, 2002. "Ten Years Out: Educational and Occupational Patterns of the Class of '88," Research Results, July, 2002. Vancouver, B. C. Council on Admissions and Transfer.

(32) Andres, Lesley, 2002. Educational and Occupational Participation and Completion Patterns of the Class of '88. Vancouver, B. C. Council on Admissions and Transfer.

(33) Dumaresq, Cheryl, Ashley Lambert-Mabaerly, and Walter Sudmant, 2003. The Class of 1996 Five Years after Graduation: Comparing BC Outcomes for Direct Entry and Transfer Students. Vancouver, B. C. Council on Admissions and Transfer.

(34) Karlinski, Jean, 2007. "BC University Outcomes for Direct Entry and Transfer Students, Comparison of the Class of 2000 and Class of 1996 Five Years after Graduation." Research Results, September, 2007. Vancouver, B. C. Council on Admissions and Transfer.

(35) GDA Research, 1998. An Assessment of British Columbia's Post-Secondary Education Transfer Issues: the Student Perspective. Victoria, GDA Research & Information Systems, Inc.

(36) Andres, Lesley, 1999. "Investigating Transfer: The Student's Perspective," Research Report, July, 1999. Vancouver, B. C. Council on Admissions and Transfer.

A.3 Transcripts

(40) Church, Roderick, 2005. Transfer Credits and Transfer Students at the University Colleges of British Columbia: A Study of the Baccalaureate Graduates of 1998-2001. Vancouver, B. C. Council on Admissions and Transfer.

(41) Heilmeier, Sonja and Heath, Nick, 2000. Transfer Credit Evaluation of Students Entering Simon Fraser University from B.C. Colleges during the Calendar Year 1998. Vancouver, B. C. Council on Admissions and Transfer.

(42) University of Victoria Office of Institutional Analysis, 1999. BC College Transfer Credit Evaluation: An Analysis of Students Entering the University of Victoria, Winter 1998/99 Session. Vancouver, B. C. Council on Admissions and Transfer.

(43) Reh-Bosch, Susan, and Lorraine Atkins, 1998. Transfer Credit Assessment for B.C. College Transfer Students Admitted to the University of British Columbia in the 1997/98 Session. Vancouver, B. C. Council on Admissions and Transfer.

A.4 Other

- (51) BCCAT, 2009. "2009-10 Work Plan," 2009. Vancouver, B. C. Council on Admissions and Transfer.
- (52) BCCAT. "Credits to Graduation." Vancouver, B. C. Council on Admissions and Transfer.
- (53) Munro, John, 2005. Assessing the Benefits of the Transfer Credit System in British Columbia: A Feasibility Study, Vancouver, B. C. Council on Admissions and Transfer.
- (54) BCCAT, 2005. Accountability of the BC Transfer System. Vancouver, B. C. Council on Admissions and Transfer.
- (55) Gaber, Devron, 2005. A Brief History of the Transfer System in British Columbia. Vancouver, B. C. Council on Admissions and Transfer.
- (56) Dennison, John D., 2000. Student Access and Mobility Within the British Columbia Post-Secondary System. Vancouver, B. C. Council on Admissions and Transfer.
- (57) Cowin, Bob, 2004. "Transfer in British Columbia: What Does the Research Tell Us?" Research Results, 2004, Vancouver, B. C. Council on Admissions and Transfer.
- (58) Karlinski, Jean, 1998. Survey of Registrars About the Associate Degree. Vancouver, B. C. Council on Admissions and Transfer.
- (59) Orum, Jennifer, 2003. B.C. Post-Secondary Admissions Information: High School Counsellor Perspectives. Vancouver, B. C. Council on Admissions and Transfer.
- (60) BCCAT, 2009. 2008/09 Annual Report to the Ministry of Advanced Education, and Labour Market Development. Vancouver, B. C. Council on Admissions and Transfer.
- (61) BCCAT, 2009. "Student Mobility Research: Next Steps." Engage, Fall/Winter 2009, Vancouver, B. C. Council on Admission and Transfer.
- (62) Jarvis, J. and Associates, 2004. Articulation Costing Phase II. Vancouver, B.C. Council on Admissions and Transfer.
- (63) BCCAT, 2005. Deliberations on the Future Direction of BCCAT Research in the Context of a Changing Post-Secondary Education Landscape.
- (64) BCCAT, 2010. "What is a Mobile Student? Broadening the Research Framework Beyond Traditional Transfer Students." Discussion Paper, 2010, Vancouver, B. C. Council on Admissions and Transfer.

B. Applicant Flow Research

(70) Holubeshen, Moufida, Bob Cowin, and Devron Gaber, 2006. "2005 Mobility of Transfer Students in BC," Research Results, May, 2006. Vancouver, B. C. Council on Admissions and Transfer.

(71) Box, Dale, 2007. "2006 Mobility of Transfer Students in BC," Research Results, July, 2007. Vancouver, B. C. Council on Admissions and Transfer.

(72) Heslop, Joanne, 2008. "Mobility of BC Transfer Students - Fall 2006 to Calendar Year 2007," Research Results, September, 2008. Vancouver, B. C. Council on Admissions and Transfer.

(73) Heslop, Joanne, 2009. "Mobility of BC Transfer Students - Fall 2007 to Calendar Year 2008," Research Results, May, 2009. Vancouver, B. C. Council on Admissions and Transfer.

(74) Heslop, Joanne, 2002. Analysis of Applications, Admissions and Registrations of B. C. College Transfer Applicants to B. C. Universities 2001/02. Vancouver, B. C. Council on Admissions and Transfer.

(75) Link, Greg, 2004. The BC Provincial Education Number (PEN): Considerations for Assigning the PEN to Post-Secondary Applicants. Vancouver, B. C. Council on Admissions and Transfer.

(76) Heslop, Joanne, and Devron Gaber, 2004. A Working Paper: Analysis of Applications, Admissions, and Registrations of Applicants to B.C. Universities and University Colleges from Secondary Schools, Colleges, and University Colleges in B.C., 2002/03. Vancouver, B. C. Council on Admissions and Transfer.

(77) Butler, Martin, 2004. Expanding Applicant Studies to More Institutions: A Feasibility Study. Vancouver, B. C. Council on Admissions and Transfer.

(78) Applicant Research Subcommittee, 2009. Student Transitions Project, Preliminary Report.

(79) Soles, Jim, 2001. Admission of Transfer Students in British Columbia Post-Secondary Institutions: Policies, Practices and Capacity. Vancouver, B. C. Council on Admissions and Transfer.

(80) Finlay, Finola, and Dale Box, 2008. "Moving From Case-By-Case Transfer to Formal Articulation: Assessing the Business Case," Research Results, September, 2008, Vancouver, B. C. Council on Admissions and Transfer.

- (81) Box, Dale, 2008. Volume of Courses Students Carry Among Central Data Warehouse (CDW) Institutions: Implications for the BC Transfer System. Vancouver, B. C. Council on Admissions and Transfer.
- (82) BCCAT, 2005. 2005/06 BC University Targets and Cut-off points for New Undergraduate Students as at July 15, 2005. Vancouver, B. C. Council on Admissions and Transfer.
- (83) Atkinson, Al, 2009. EducationPlanner.CA: An External Review. Vancouver, B. C. Council on Admissions and Transfer.
- (84) Heath, Nick, 2007. Working Paper - What is the flow of Grade 12 graduates into and among BC public post-secondary institutions over a multi-year period. Minister of Education and the Minister of Advanced Education of the Province of British Columbia.
- (85) Lawrance, Jill, 2008. Mobility of Adult Basic Education Students in BC: The 2004-05 Cohort. Vancouver, B. C. Council on Admissions and Transfer.
- (86) Canadian Council on Learning, 2009. Where Did They Go? Post-Secondary Experiences, Attitudes & Intentions of 2005/06 BC High School Graduates Who Did Not Pursue Public Post-Secondary Education in British Columbia by Fall 2007. Vancouver, B. C. Council on Admissions and Transfer.
- (87) Kershaw, Adrian, 2007. Tracking Student Mobility Between the Public and Private Post-Secondary Sectors in British Columbia: A Feasibility Study. Vancouver, B. C. Council on Admissions and Transfer.
- (88) Heslop, Joanne, 2001. Analysis of Applications, Admissions and Registrations of B.C. College Transfer Applications to B.C. Universities, Fall 2000. Vancouver, B.C. Council on Admissions and Transfer.
- (89) Heslop, Joanne, 2008. Student Transitions Project Research Report: Movement Among B.C. Public Post-Secondary Institutions. Vancouver, B. C. Council on Admissions and Transfer.
- (90) Student Transitions Project, 2008. "Movement Among B.C. Public Post-Secondary Institutions," Research Results, November 2008, Vancouver, B.C. Council on Admissions and Transfer.
- (91) Student Transitions Project, 2009. "Movement of All Registrants Among B.C. Public Post-Secondary Institutions," Research Results, February 2009, Vancouver, B.C. Council on Admissions and Transfer.



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