

Access, Persistence, and Barriers in Postsecondary Education: A Literature Review and Outline of Future Research

Prepared by the Educational Policy Institute
for the Higher Education Quality Council of Ontario



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Introduction

Postsecondary education (PSE) is a key component for social, economic, and cultural development within societies. Ensuring that all people can participate in some form of PSE is a key priority for most Western governments. Assessing access to PSE has become an important focus for researchers, postsecondary institutions, and governments. Understanding how we can define access, assessing who does and does not have access, why that access may be limited, as well as what governments and their partners can do to facilitate increased access is a vital part of the discussion around PSE participation.

The Higher Education Quality Council of Ontario (HEQCO) is charged with measuring and reporting on access to PSE in the province of Ontario. As part of this work it has commissioned the present study in order to gain an understanding of the present state of knowledge on the subject. The purpose of this paper, therefore, is three-fold. First, it is intended to serve as an overview of the current state of social science research on access. Second, it is meant to provide a series of recommendations about how access to PSE in Ontario can be monitored and reported upon. Third, it is designed to show the gaps in our present knowledge of access and recommend some ways in which these gaps can be filled through a program of structured research.

Conceptualizing Access to Postsecondary Education

Talking about access to PSE requires an understanding of the contested nature of the term. Anisef et al (1985) have argued that there are two types of access: Type I and Type II. The “how many” – the number of people attending/participating in PSE – is called Type I access. The “who” – the composition of the participants in postsecondary study and their relationship with the overall population – is referred to as Type II access. While Type I access may be acceptable in terms of how many students are participating in PSE, Type II access may be poor. This is particularly evident if Type I access is limited through institutional capacity (Anisef et al, 1985; Krahn and Andres, 1999). Factors like increases in admissions averages and institutional capacity can have an impact on Type II access, limiting the number of people who can enter the institution and possibly limiting the proportion of people from under-represented groups who are able to attend.

There is a general consensus among researchers that knowing how many people are participating in PSE is not enough when it comes to understanding access. Although there is a clear connection between Type I and Type II access, there is a need to ensure that researchers, policy makers, and institutions understand who is accessing PSE, and whether that access is equitable across gender groups, income categories, racial/ethnic groups, age groups (e.g. sequential, youth, adult, and lifelong learners), and other important characteristics.

This discussion around Type I and Type II access has been expanded by other researchers to include financial accessibility (or affordability), program choice, employment balanced with studies, and debt. For example, some researchers have argued that the definition of access has been expanded to include discussion of whether:

...individuals are able to enroll in their programs of choice (provided, of course, that they qualify); they have the opportunity to attend the institutions they prefer, even – more importantly – if that means moving to another town (again assuming they meet the relevant entry standards); they need not work at outside jobs during the school year to the degree that it adversely affects their studies; and paying for the schooling does not put unreasonable demands on family resources or lead to the accumulation of excessive debt burdens in the post-schooling period (Finnie, Usher, and Vossensteyn, 2004: 8).

A more formal re-assessment of the definition was made by Adelman (2007). In this essay, he argues that there are four possible definitions of the term: *threshold* access (i.e. access is achieved by “walking through the door” of a postsecondary institute), *recurrent* access (i.e. access to multiple and sequential programs including graduate/professional programs), *convenient* access (i.e. access to PSE at a time and place of one’s choosing), and *distributional* access (i.e. access to one’s personal choice of program). The author argues that threshold access is the most important definition because the other definitions “contaminate” the problem of access with other issues such as institutional capacity and individual preferences.

Entwined – in the public mind at least – with notions of accessibility are notions of “affordability”. Indeed, it has become difficult in Canada to discuss participation, persistence, and completion of PSE without speaking of affordability. Some researchers have concluded, using various means, that Canada’s PSE is less affordable than in other OECD countries (e.g. Usher and Cervenak, 2005). However, there is a substantial confusion in the general discourse on PSE between studies which demonstrate a link between changes in net tuition - i.e. tuition minus grants - and enrolments among vulnerable student sub-groups (for which there is substantial evidence, at least in the US) and the notion that the “sticker price” of tuition fees is in some way related to access (for which there is almost no evidence at all).

In general, this paper will be looking at Type II access (that is, the question of “who goes” to PSE) and will concentrate primarily on what Adelman refers to as “threshold access”, although other definitions of access will be considered. It will not look specifically at the issue of affordability, except insofar as it demonstrably affects Type II access.

Part I – What We Know About Access and Persistence

Under-representation in Postsecondary Education

It is known that a number of groups are under-represented either in universities or PSE as a whole. In Canada, a great deal of the recent research has focused on the impact of family background, measured through family income and parental education. However, much of the literature explores a myriad of influential factors such as family income, parental education, family type, age, race/ethnicity, gender, geographic location, immigration status, language, experiences in high school, academic achievement, extra-curricular involvement, part-time work, attitudes toward school, existence of postsecondary educated role models; parents' attitudes toward PSE, parents' savings for education, parents' intentions for their children, sources of financial aid available for postsecondary study, information about financing, access to student supports, attitudes toward borrowing and debt, knowledge of the benefits of PSE, and others (Rounce, 2006). The following section outlines the major identifiable groups which experience under-representation in Canadian PSE.

Gender

Although recent work (Tandem Social Research, 2007) dismissed the importance of gender – particularly focused on women – for accessibility research, researchers have begun to explore the changing gender balance within the postsecondary sector. Research into postsecondary participation has shown an increase in the proportion of women students overall. Young women have become more likely to go on to postsecondary study than young men (Barr-Telford et al, 2003; Zeman, 2007), partly because of young men's experiences in high school where they "...fail more often, have lower high school grades, enjoy school less and find it less interesting, and get along with teachers less" (Finnie, Lascelles, and Sweetman, 2005; see also Frenette and Zeman, 2007). They are also more likely to be participants in growing economies – particularly those that are resource-based and require fewer skills at the point of entry (Dubois, 2002; Chung, 2006).

Census-based research shows that women have become more likely to complete a bachelor's degree but less likely to complete a trade or a college credential, while men have become more likely to complete a trade with high school and are slightly more likely than previously to enroll in college or bachelor's programs (Boothby and Drewes, 2006). There are also gender differences in participation among types of institutional programming: women are still over-represented in social sciences while men are over-represented in science and engineering. This is in part reflected in employment and income outcomes: in many cases, women still earn less than men (Andres and Adamuti-Trache, 2007).

Disability

There is limited research into access to PSE for people with disabilities in Canada. Individuals with disabilities tend to be overrepresented in Canadian colleges and underrepresented in universities (Holmes, 2005). Starting at the beginning with how to define disability – whether from a medical, social or other standpoint – is a challenge for researchers focused on the experiences and participation of people with disabilities in the PSE system. Junor and Usher (2004) note that many Canadian institutions:

...define as “disabled” any person who, because of a persistent/permanent physical, sensory, speech/communication, health/medical, psychological/psychiatric, developmental, learning or other disability, experiences difficulties in accessing employment, education, or community participation (59).

Butlin’s (1999) research into the factors related to participation concluded that individuals with activity limitations were less likely to participate in university education, but that activity limitations had little impact on college or vocational/technical participation. Holmes (2005) used the 2002 Canadian University Survey Consortium and Canadian College Student Surveys to conclude that postsecondary students with disabilities are more likely to have family responsibilities and to be older than other students, while those between 20 and 34 are more likely to be female (see also Junor and Usher, 2004). How severe a disability may be is also an issue when assessing individuals’ access to PSE (Junor and Usher, 2004).

Research into the challenges facing people with disabilities in the postsecondary system is widely recognized as a necessity, and is ongoing.

Parental Education and “First Generation” Students

Commonly used in the United States, the term “first generation student” has received an increasing amount of attention both in Ontario (thanks to the Ontario postsecondary review chaired by Bob Rae) and in the rest of Canada. As a student whose parents have not participated in PSE, first generation students tend to face greater challenges to participation than their peers with more educated parents. These challenges may be at least partly financial, but they are also non-financial in nature. American research shows that first generation students are more likely to be female, older, African-American or Hispanic, have dependent children, and come from lower-income families (Engle et al, 2006).

Although Canadian researchers agree that parental education has a tremendous impact on access to PSE (Barr-Telford et al, 2003), they do not always agree on why this is so. Some argue that it is because of education’s link to family income (Finnie, 2004; Butlin, 1999) while others argue that it is also

because of the non-financial aspects of social and cultural capital associated with PSE (deBroucker and Underwood, 1998; Junor and Usher, 2004; Finnie, Lascelles, and Sweetman, 2005). While researchers may not agree on the most important factors influencing the participation, persistence, and completion of first generation students, they do agree that these factors have both financial and non-financial components.

Some researchers argue that parental education – and particularly the father’s education – becomes even more important when it comes to university participation (Finnie, Usher, and Vossensteyn, 2004; Caponi and Plesca, 2007). Others have found that the mother’s education is positively associated with expectations for participation of girls but not for boys (Frenette and Zeman, 2007).

Race, Ethnicity, and Immigrant Status

There is a growing consensus among researchers that supports the need to understand the impact of race, ethnicity, and immigrant status on postsecondary access and persistence. In Canada, some researchers have argued that overall participation patterns for most ethnicities are in line with their population numbers (Junor and Usher, 2004), although there are observable differences within some ethnicities. Butlin (1999) found that high school graduates born outside Canada were more likely to attend university, but less likely to attend a college or technical institute.

Further research has found that visible minorities and youth with an immigrant parent – particularly Asian males – are more likely to attend university (rather than college) than non-Asian males (Coelli, 2005b; Junor and Usher, 2004; Frenette, 2005; Taylor and Krahn, 2005; Lambert et al, 2004). Researchers have hypothesized that this focus on postsecondary participation reflects high levels of motivation and education present among many immigrants to Canada.

There is a gender component to the discussion around race, ethnicity, and immigrant status (including the children of immigrants) in postsecondary access. For example, researchers have found that black university applicants to Ontario universities have been disproportionately female, raising concern around the apparent absence of young black men in the system (Junor and Usher, 2004).

Much of the research around visible minorities in the United States comes to different conclusions than the Canadian research, reflecting – at least in part – the differences in the two countries’ populations. However, research involving Latino participation in PSE reflects many of the same challenges facing under-represented people – such as Aboriginal people and particular visible minorities – in the Canadian system. Higher dropout rates, lack of preparedness for postsecondary study, importance of peer encouragement, the culture of “possibility” needed to support students’ dreams for PSE, financial supports, and informational deficiencies are all identified as issues facing Latino people who are underrepresented in the American PSE system (see Baumann et al, 2007).

Language

Although language is often considered along with race, ethnicity, and immigrant status, some research has been done into the importance of language as a factor in access, persistence, and completion.

Some researchers have found that Anglophone youth are more focused on completing higher education than Francophone youth – in both Quebec and in the rest of Canada (Looker and Thiessen, 2004). But the complex nature of language and culture are reflected in the conclusion that Francophones outside of Quebec have higher educational aspirations, although they are still lower than those of Anglophones (Looker and Thiessen, 2004).

Aboriginal Status

There is a growing body of literature in Canada addressing the Aboriginal experience with access to PSE, highlighting the historically low participation rates among Aboriginal people. While participation rates of Aboriginal people have increased over time, they are still substantially below those of non-Aboriginal people (Clark, 2003; O'Donnell and Tait, 2003; Stonechild, 2006).

Researchers agree that there are important differences between current and potential Aboriginal and non-Aboriginal PSE students that reflect barriers to access. Research also shows that Aboriginal postsecondary students are more likely to be older, married, and have children than the “typical” student – partly reflecting their greater likelihood of delaying entry into PSE after high school (Canada Millennium Scholarship Foundation, 2006; Holmes, 2005; O'Donnell and Tait, 2003; Looker, 2002).

Barriers to PSE participation may be both financial and non-financial for Aboriginal people. Non-financial barriers include personal factors such as a lack of self-confidence and motivation, lower high school grades, lower levels of parental education and parental expectations; institutional factors such as a lack of understanding of Aboriginal culture on campuses and the experience of racism on campus; all compounded by the history of forced assimilation through non-Aboriginal educational institutions (Canadian Policy Research Networks, 2002; Holmes, 2005; Mendelson, 2006; Canada Millennium Scholarship Foundation, 2006; Junor and Usher, 2004; Hampton and Roy, 2002; R.A. Malatest and Associates, Ltd., 2002; Stonechild, 2006; Finnie, Lascelles, and Sweetman, 2005; Canada Millennium Scholarship Foundation, 2004). In addition, Aboriginal people are more likely than non-Aboriginals to live in rural or Northern areas, meaning they incur greater costs associated with postsecondary participation (Holmes, 2005).

Family Type

Family type matters when it comes to participation in PSE. Students from two parent families are more likely to go on to postsecondary study, although there has been an

increase in the participation of students from single parent (particularly single mother) families (Finnie, Usher, and Vossentseyn, 2004;

Finnie, Lascelles, and Sweetman, 2005; Galarneau, 2006).

Additionally, students with dependent children – particularly as single parents – are less likely to complete PSE than those without dependent children (Tomokowicz and Bushnik, 2003; Lambert et al, 2004). The additional challenges associated with supporting children – and often relocating to attend a postsecondary institution, moving away from support networks – can make it exceptionally difficult to complete a course of study (Holmes, 2005; Lambert et al, 2004).

Family or Parental Income

Much of the research around financial barriers to access has focused on the ability to pay for PSE, and the impact that family finances have on an individual's ability to access the PSE pathway of his/her choice. There is consensus among researchers that individuals from the highest income families are much more likely to go on to university (in particular) than are those from lower income families (Butlin, 1999; Corak, Lipps, and Zhao, 2003; Knighton and Mizra, 2002).

There is less of a consensus around whether this accessibility gap based on family income has expanded or contracted over time, and around what is happening with the middle income families. Some researchers argue that the gap among participants based on parental income has been relatively stable over time (Corak, Lipps, and Zhao, 2003; Drolet, 2004; Christofides, Cirello, and Hoy, 2001), but also note that there was a slight decline in participation among middle income families into the late 1990s (Corak, Lipps, and Zhao, 2003). Others note that income is a more important determinant of university participation than it is of PSE as a whole (Zhao and deBroucker, 2002; Corak, Lipps, and Zhao, 2003; Knighton and Mizra, 2002).

American research has shown an increase in this gap – particularly among students in prominent research universities (National Centre for Public Policy and Higher Education, 2002; Astin and Oseguera, 2004).

Additional discussion within the literature deals with the relative importance of family income versus parental education – acknowledging the links between the two variables, but also recognizing that education signifies a series of other factors (such as social connections, experience with PSE) that may have relatively strong impacts on participation (Rounce, 2006). Some researchers have concluded that parental education is more important than income (Frenette, 2005, 2007b; Knighton and Mizra, 2002; Rivard and Raymond, 2004; Drolet, 2005) but given the strong connection between income and education the two are difficult to separate.

Rural/Northern People: Distance to Postsecondary Institutions

Distance to a PSE has been assessed as an important variable in determining who accesses PSE – particularly for people who cannot access PSE within commuting distance (Frenette, 2002, 2003; Butlin, 1999; Andres and Looker, 2001).

While researchers agree that distance from PSE is a factor in access, they do not necessarily agree on why this is so. Frenette (2003) concludes that distance matters more for families with lower income – particularly for university participation (see also Butlin, 1999; Finnie, Lascelles, and Sweetman, 2005; Coelli, 2004). He argues that distance exacerbates financial costs, potential access is also impacted by social costs due to leaving one's home community and incomplete information about the value of university education (see also Dubois, 2002; R.A. Malatest and Associates, Ltd., 2004; Anisef et al, 2003; Kirby and Conlon, 2005; EKOS, 2006).

Other researchers have concluded that potential students' expectations are different in rural areas than in urban centres. Fewer parents from rural areas expect their children to participate in PSE – particularly in university studies (Junor and Usher, 2004). Andres and Looker's (2001) study of rural youth in British Columbia and Nova Scotia concluded that labour market differences, community exposure, relocation fears, and community disconnect link with structural barriers such as family background to impact PSE access. Community characteristics – such as the presence of role models, quality of high school education, and the type of employment available in the community – have all been found to impact access to PSE (Cartwright and Allen, 2002; R.A. Malatest and Associates, Ltd., 2002; Rahman and Situ, 2005).

Recent research into the impact of a new university on the local population concludes that having a degree-granting institution nearby increases university attendance among youth – particularly among lower-income people (with the exception of Aboriginal people) (Frenette, 2007a). It is hypothesized that the presence of a university supports participation, by providing youth with a larger range of institutional/programmatic choices.

Conceptualizing the Barriers to Access

Having now examined the evidence with respect to the groups which appear to be systematically under-represented in PSE, we can begin to turn to the question of *why* these groups are under-represented. That is to say – what factors are constraining these non-attendees from going on to PSE.

Some of the existing literature divides the barriers into three broad “types” – barriers of information or knowledge or motivation, academic barriers, and financial barriers – each of which can presumably be subdivided in many ways. This is not to suggest that each of the three barriers operates independently of one another. There is a growing consensus that barriers to access can be classified as financial and non-

financial, but that there is an indelible link between them. Much of the current research around access assesses the personal, institutional, and societal factors that impact an individual's access (or lack of access) to PSE, and in various types of postsecondary study. The interconnectedness of preparation with family background and social capital is clear, as Leinbach and Bailey (2005) argue that minority, immigrant, and low-income students tend to be less well prepared for PSE (see also Learning Point Associates, 2004; Adelman, 2007). However, we would suggest that the large numbers of reasons why individuals choose not to proceed with their education can be broken down conveniently into a few simple related areas.

Table 1 shows some of the known relationships between certain barriers and the under-representation of particular groups. It shows clearly that most identifiable groups face multiple barriers in attending PSE. However, this is not true of all groups: males, for instance, may be at a disadvantage with respect to motivation and academics (surveys consistently show males to be less interested than females in academics at high school, with corresponding effects on grades), but they are not known to be at a disadvantage with respect to finances.

Table 1: Known relationships between barrier sets and various socio-demographic characteristics

	Information/Knowledge/ Motivations	Academic Barriers	Financial Barriers
Gender	X	X	-
Disability	?	X	X
Low Parental Education	X	X	X
Race/Ethnicity	X	?	?
Language	?	X	?
Family Type	X	X	X
Low Family Income	X	X	X
Rural	X	X	X

Table 1 also shows that certain relationships are not understood. This is particularly true with respect to language and ethnicity. It is known, for instance, that parents from some ethnic groups have considerably higher educational aspirations for their children than others (Sweet and Anisef, 2005), but almost nothing about how students from different ethnic backgrounds perform or what their financial picture looks like. Similarly, it is known that youth from minority language communities tend to have weaker academic results than others, but little research has been collected about their motivations or financial situations.

We turn now to a brief description of what is known about each of the broad categories of barriers.

Information/Knowledge/Motivation

Research shows that most Canadian parents expect their children to attend a postsecondary institution. According to the most recent iteration of Statistics Canada's *Survey of Approaches to Educational Planning*, 93% of Canadian parents had expectations that their children would go on to some form of

PSE after high school (Shipley et al, 2003). Although surveys have shown that the majority of parents expect their children to go on, further research shows that there are distinct differences among families because, as Looker (2002) notes, some parental role models can on occasion act as a discouragement to PSE participation.

Access to information – about available programs, standards for admission, costs and benefits associated with postsecondary participation, and future prospects – is understood to be an important part of the access puzzle. It is not the only piece – researchers do not agree that information in and of itself will increase access to PSE – but the type of information available and when people have access to it are significant components of the access issue.

Having appropriate information when and where they need it is key for potential students' decision-making, both in terms of whether to participate in postsecondary study and what to study. For many potential students, the decision whether or not to attend a postsecondary institution is related to their having decided on a career goal overall. Further, information provision that involves parents/families has been shown to be more successful – particularly for students facing multiple barriers to participation (Looker and Lowe, 2001; COGEM, 2002; Canadian Career Development Foundation, 2003; Berger et al, 2007).

Some researchers have argued that information about the financial costs and benefits of PSE is not reaching Canadians. In general, Canadians overestimate the costs of education and under-estimate the benefits and this mis-estimation grows inversely with income (Usher, 2005b). Ontarians are more likely to overestimate the costs than people from other provinces (Ibid.). However, there is no consensus around the primary importance of perceptions alone. There is variation in tuition fees by province and variation in the salaries of postsecondary-educated workers which are impacted by age, stage of career, profession, etc., that can impact peoples' perceptions of these costs and benefits, but perceptions do matter and have an influence on access to PSE (Rahman and Situ, 2007). Others argue that perceptions of costs and benefits matter, but so does having the ability to meet admissions criteria and pay out-of-pocket expenditures (Finnie, 2004). This is not a phenomenon unique to Canada: American research also shows that Americans are also likely to overestimate the costs associated with PSE (Ikenberry and Hartle, 2001; Chapman, 2005).

Motivation has also been identified as an important factor influencing participation in PSE. In some studies, young people have identified a lack of motivation as more important than other factors in influencing their decisions not to go on to PSE (at least

out of high school) (Berger et al, 2007). Others have noted that motivation is tied up with other factors, such as parental income, and that individuals from lower income families are more likely to report not being motivated to go on to PSE (Foley, 2001; Winn, 2002).

Lack of understanding of the process of applying to university/college and a lack of understanding about the student aid assessment process has also been identified as a potential problem in terms of access (Perna, 2004). A number of studies, including Flint (1993) and Cabrera & LaNasa (2000) have demonstrated a correlation between knowledge of student financial aid programs and parental aspirations, though it is unclear in which direction causality runs.

Academic Preparation

Access to most PSE requires the successful completion of high school. Thus, success in high school – or lack thereof – is understood to be a factor that affects participation in PSE. Canadian research shows that students with secondary grades below 70% were less likely to go on to PSE than students who reported grades of 70% and above (Barr-Telford et al, 2003). Additionally, research exploring attitudes toward and experiences in school, involvement in extra-curricular activities, and part-time employment also contributes to our understanding of the importance of the high school experience in future PSE participation.

Non-completion of high school and delayed (non-sequential) completion have also been examined as factors contributing to postsecondary participation. Canadian research has shown that non-completers who return to school and move on to PSE find it more difficult to return to and complete their education. Additionally, these participants were more likely to be working full-time or part-time and returning to a non-traditional institution than their sequentially-educated counterparts (Shaeinks et al, 2006; Brink, 2004).

Both Type I and Type II access – or how many and who participate(s) – are often linked to the existing capacity of postsecondary institutions. For example, Riddell (2003) argues that by increasing the capacity of educational institutions, Types I and II access could be improved through the accompanying decrease in admission standards – thus benefiting those with less affluent and educated families (see also Coelli, 2005b; Junor and Usher, 2004).

Additional evidence from the United States points to the importance of academic preparation for postsecondary participation and success. In particular, Adelman (1999) places a great deal of emphasis on the importance of rigorous curricula and academic achievement in secondary school, especially in mathematics in improving access and success in PSE. This point has made in other research as well, most notably Swail et al (2005). Similar work has not yet been done in Canada, although the evidentiary basis for such research now exists in Statistics Canada's Youth in Transition Survey (YITS).

Finances

This set of barriers has been perhaps the most extensively studied, if only for the simple reason that it is the one most susceptible to quantitative manipulation. It is also for some reason the factor that has the most resonance politically, even if the empirical evidence that finances are a major barrier to access is much less conclusive.

The strongest vein of literature pointing to finances as a barrier is the “student price response coefficient” literature from the United States. This research takes “net price” (that is, the cost of tuition minus grants¹) as an independent variable and then tries to examine the effect on enrolment. Jackson and Weatherby (1975), Manski and Wise (1983), and Leslie and Brinkman (1987) all performed meta-analyses of small-scale price-response studies. Each of the three studies found consistent negative relationships between net price and enrolment. Heller (1999), analyzing a national database, came to the same conclusion, although he found that the coefficient of response was somewhat lower, indicating perhaps that over time net price was becoming less important (perhaps in response to the growing returns to education). Heller found, significantly, that grant increases can fully offset the negative effects of tuition fees on enrolment.

He also found that the reverse was true, stating “tuition increases that are not offset by concomitant increases in financial aid appear to have the effect of reducing access”. Most recently, Dynarski (2003), using considerably more sophisticated methods of analysis, found a significant negative relationship between net price and postsecondary participation.

One constant across all research findings is that grants or reductions in net price are much more effective among low-income students than among middle or high income students (some studies have even found a positive relationship at the institutional level between net price and high income students, possibly as the result of education purchases at elite institutions being a form of “conspicuous consumption”). The size of the effect varies somewhat from study to study but the general result does not. Leslie and Brinkman (1988) – found that between 20 and 40% of total enrolment of low-income individuals was due to grants and 13% of middle-income student enrolment was also due to grants.

This all seems very conclusive; however, the problem with the net price literature is that it over-simplifies the nature of the financial barriers students face.

¹“Net Price” is normally defined as tuition minus grants; however, occasionally, as in Macpherson and Schapiro (1991), it is defined as tuition minus “total subsidies” (which includes both grants and the subsidy value of any loans which may have been contracted). It is to be distinguished from “net cost”, which is usually defined as tuition plus cost of living minus grants.

Fundamentally, students face two possible financial barriers. The first barrier is what might be called a “price constraint”; that is to say, an individual believes that the total price or cost outweighs the benefits of a particular educational choice. The second barrier is what might be called a “liquidity constraint”; or, an individual cannot obtain sufficient funds to cover the immediate cost of obtaining an education. If a student faces the first barrier then the second barrier does not arise as she would have no interest in trying to amass funds for a course of study. But it is quite possible that a student might believe a postsecondary program to be financially sound at a given price (i.e. no “price barrier”) but be unable to access sufficient funds to pay for it. Applying this to the issue at hand, we realize that reductions in net prices are primarily of use in overcoming the first barrier. But unless the liquidity barrier is also overcome, overcoming the first barrier is meaningless. In the United States and Canada, the liquidity constraint is largely met through loans. Therefore, it follows that the *total* amount of all aid, including both loans and grants, needs to be examined as a variable in any sensible examination of access. Unfortunately, the most influential pieces in net price theory failed to take into account size of loans and size of total aid package as a variable separate from grant size. Heller (1999) effectively omitted the same variables, although he sagely warned in another article (1997) about the importance of taking the different types of assistance into account.

This raises the question as to whether or not the price response studies are actually addressing the phenomenon they purport to be examining. What these studies tell us is that grants to students that are given **above current assistance limits** are effective in increasing attendance from low-income students. However, it does not tell us how effective this assistance is compared to loans; neither does it tell us what would happen if new grant money simply replaced loans and did not increase the total assistance package. Put another way, these studies tell us that if price and cash constraints are overcome simultaneously, significant improvements in attendance result. However, they do not preclude the possibility that the real problem is a cash flow constraint that could be solved more cheaply and efficiently with loans. Only one study (St. John, 1993) comes close to analyzing the differential effects of loans and grants on enrolment, but since the study assumes at the outset that low-income students will receive their package in the form of grants, the relative efficacy of the two instruments was not actually tested.

In Canada, there have been very few studies looking at financial barriers with anything like the sophistication of the American studies typified by Dynarski. Some studies (e.g. Christofides, Cirello, and Hoy, 2001; Corak, Lipps, and Zhao, 2003; Drolet, 2005) have simply noted that major rises in tuition have not been accompanied by any changes in the social composition of enrolments. A few studies (e.g. Coelli, 2004, Neill, 2005, and Johnson and Rahman, 2005) appear to show some effects, but none of these studies properly controls for changes in student assistance or general spending on PSE in the same way, and therefore cannot be seen as definitive. Johnson (2008, forthcoming) is the first piece to try and incorporate all forms of student aid (i.e. grants, tax credits, and loans) into the equation, but his difference-in-differences technique only examines inter-provincial variation in enrolments related to changes in net price and does not

examine any unit-record data. Using this method, he finds that changes in overall aid have no effect on access or persistence.

The cost of education for students in professional and graduate programs has become of increasing interest to researchers. Research shows that price has an impact on some groups more than others, and participation of these groups has been impacted by rising educational costs (e.g. tuition fees). Research into medical, law, and dental education in Canada has shown that as tuition fees increased, the participation rates of students from lower/middle income backgrounds has declined (see Kwong et al, 2002 for medical students; King et al, 2004 for Ontario law students). However, these two studies had noticeable methodological flaws (no control groups, focus on existing students rather than on students “at risk” of becoming enrolled), and so are of dubious value. More rigorous was Frenette (2005), who found that enrolment in professional programs between 1995 and 2000 increased both among those whose parents had a graduate/professional degree and among those who had *no* PSE. Frenette posited that the latter might be due to the existence of financial incentives and supports for very low income students – however, since student aid funding for students in professional programs outside Quebec is not linked in any way to parental income, this seems a dubious explanation.

Student debt is an important part of the discussion around affordability. As debt levels increase, how individuals manage the resulting debt gains more attention – and more study – in the literature. How to define manageable debt is not agreed upon by researchers. For example, government programs may define manageability differently than borrowers, who may perceive debt to be unmanageable at a different point than others might do so (Schwartz and Baum, 2006; Situ, 2006).

Research has shown that a greater proportion of students are borrowing to finance their education, and that those students are borrowing more (Berger et al, 2007). This increase in borrowing was most evident between 1995 and 2000, but it continues to swell each year. In addition, the amount of private debt is increasing as is the amount borrowed by college students (EKOS, 2006; Berger et al, 2007). Research has shown that student debt can impact students’ ability to participate in further PSE (Berger et al, 2007) and also on their family and life-course goals (Andres and Looker, 2001).

But from an access point of view, the amount of debt taken on is more or less irrelevant unless the additional debt provokes changes in behaviour. In this context, we are therefore concerned with what is popularly called “debt aversion”, which is an important part of the conversation on financial barriers to access in Canada. Exploratory Canadian research has found that Aboriginal people (R.A. Malatest and Associates, Ltd., 2004), young women (Government of Newfoundland and Labrador, 2003), those with higher levels of debt (Acumen Research Group Inc., 2005), and people with lower levels of parental education (Market Quest Research Group, 2005) are more likely to be debt averse than the general population. Others have argued that debt aversion affects only a very small proportion of the population – so small as

to be negligible (Finnie and Laporte, 2004; Eckel et al, 2007). This research is not conclusive, but raises questions about the level of debt aversion in particular groups.

In the United Kingdom, research has shown that lower-income youth indicated that they were more averse to debt than those with higher levels of income (Callender and Jackson, 2005), though this research was not able to demonstrate any conclusive changes in behavior as a result of this “aversion”. Tellingly, however, this debt aversion seemed to be linked to perceptions of the value of education (i.e. the cost/benefit analysis) vis-à-vis the debt to be obtained, particularly among young people. This makes conceptual sense because outside of religious objections to interest-bearing debt, the only reason to be debt averse is if one believes that the rate of return on a particular program is certain to be not high enough to repay the debt. In other words, for most students, “debt aversion” is simply another way of saying there are “cost-benefit” problems with a particular course of studies.²

Finally, it is worth noting that a particular focus of the literature on debt has nothing to do with access at all, but rather with the transition to the labour market. A number of studies have focused on factors such as size of debt, employment (including type and hours worked), earnings, interest rates, and personal circumstances and the impact they have on how “manageable” an individual’s debt may be for them (Schwartz and Baum, 2006; Allen and Vaillancourt, 2004; Finnie, 2005). In addition, researchers have begun to pay attention to the impact of debt on individuals’ life courses – the choices that they make to buy a house, get married, have children – compared with other individuals who don’t have student debt, or have borrowed lower amounts (Finnie, 2005), concluding that to date the effects are relatively mild.

Overall, the Canadian research on financial barriers is somewhat weak because of the inability to link tuition to student aid at the unit-record level. Nearly all the tuition studies are flawed because of the way they ignore the impact of student assistance. However, most researchers seem to take the view that financial barriers relating to tuition fees – should they exist – are likely to have a greater impact on people from lower income families than they do on people from wealthier backgrounds. As a result, most tend to suggest solutions which are targeted rather than universal in nature (i.e. grants rather than tuition reductions).

Disentangling the Barriers to Access

We have a reasonably good understanding of who is and who is not attending PSE in general and university in particular (see above, *under-representation in PSE*). We know that there are a number of barriers to access which are to an extent inter-related

² One could make the argument that this is more about uncertainty and aversion to risk than about cost-benefits, per se. But this, presumably, would affect all students equally, not merely those who rely on student aid (students paying out of their own pocket or their family’s pocket should have an equal concern about the risk that their rate of return on invested money will be low). So one could see “risk aversion” as a separate category of barrier, though since the risk concerned is about the cost-benefit of the education being purchased, one could equally argue that this is really simply a variation on the general theme of “cost /benefit” issues.

and which affect certain identifiable groups more than others. However, our understanding of which barriers are most important and – especially – how to overcome them, is still somewhat limited.

In terms of determining the relative importance of various barriers, there are some obvious conceptual problems to overcome. The first is that many people may face multiple barriers and that these barriers are to a certain extent inter-related. Coming from a lower-income household not only means that a student has less access to cash, but also means that he/she likely has less access to important sources of social and cultural capital that might have smoothed their path to a postsecondary institution. Finding ways to tease out which of these elements is most important is therefore quite difficult.

One relatively straightforward method is simply to ask youth who are not in PSE why they are not in PSE. These results have been reported through YITS (Bowlby and McMullen, 2002) and the Postsecondary Education Participation Survey (PEPS) (Junor and Usher, 2004). The two surveys use different kinds of questions to look at the issue of barriers. YITS asks all individuals if they see any barrier to them *ever* getting as much education as they want and allow up to three answers; PEPS asked people who are not in PSE for the single most important reason why they are not currently in PSE. Both pointed to the fact that something close to 50% of youth not in PSE cited *no* barrier to not being in PSE. Of the remaining barriers, financial barriers were the most frequently cited. In YITS (which has the looser definition of “barrier” since it refers to possible barriers now or in the future instead of simply current barriers), roughly one-third of non-attendees cited finances as the major barrier, while in PEPS (the stricter definition) it was about one-fifth.

But this method of measuring the relative importance of different barriers leaves something to be desired. First, self-reported reasons for non-attendance need to be viewed with caution as there is a major worry about social desirability bias in responses (people may be systematically inclined to under-report barriers such as poor marks because it shows them in a bad light). Second, the results quoted above leave some major questions unanswered, such as: “what does it mean not to *want* to be in PSE”? Third, at least in the case of PEPS, the forced single answer removes some of the obvious complex interplay between different barriers.

Two recent pieces in particular seem to point at least part of the way to getting around this problem by looking primarily at observable characteristics rather than at respondents’ given reasons. Frenette (2007b) uses data from YITS to look specifically at the differences in university participation among 19 year-olds from high-income and low-income backgrounds. Using an Oaxaca-Blinder decomposition method, he reports that nearly all of the difference in participation rates can be accounted for using observable characteristics. He finds that family background – specifically parental education – is by far the most important factor in explaining the gap in participation

rates (.299 of the gap explained), followed by reading scores at age 15 (.197), overall high school marks (.143) and then financial constraints (.12)³. Finnie and Usher (2008, forthcoming), while using PEPS to look at the effects of savings on PSE attendance using both logit and tobit models, discovered that family income played almost no direct role in determining attendance. In simpler models, parental encouragement and parental education seem to play a large role, but the effects of these two factors almost disappear once individuals' high school grades are taken into account. That is to say – the effects of parental education and encouragement are *expressed* through achievement at the secondary school level.

These two studies use very different methodologies and data sets and look at different factors. But both come to essentially the same conclusion: that student performance in secondary school is the predominant factor determining students' postsecondary pathways, and that this performance in turn is significantly affected by what might be termed “cultural” factors in students' background which seem to affect the desire and ability to perform at the secondary level.

This does not mean that financial barriers do not exist or are unimportant. For some students, at some times, they clearly are. Neither should these results be read in such a manner as to imply that tuition is unimportant and may be raised at will with no ill effects. But it is to say that the most sophisticated analyses available strongly suggest that *at existing levels of tuition with existing student aid programs*, financial barriers are of far less importance than the barriers related to cultural capital and academic success.

Barriers to Persistence and Completion in Postsecondary Education

Understanding access – both how many people participate in PSE and where they come from – is incredibly important for policy makers concerned with ensuring equitable access. But as important as who has “threshold access” is who is able to persist and complete their course of postsecondary study (Adelman, 2007). Barr-Telford et al (2003) define persistence as the pursuit and successful completion of PSE. Research into persistence, just like that into access/participation, also focuses on potential factors impacting “successful” persistence (Finnie, Usher, and Vossensteyn, 2004).

The majority of studies which have looked at the issue of completion in Canada have tried to focus on the issue of simply measuring completion rates (e.g. Barr-Telford et al, 2003; Finnie and Qiu, 2008, forthcoming); few have focused on the socio-demographic characteristics of completers. Of the few that have been done, Lambert et al (2004) stands out in terms of quality, and it concludes that, as with access, men, married students, and those from families with lower levels of education were more

³ Frenette's definition of a “financial constraint” is the YITS definition, which as we noted above is somewhat loose. Had a stricter definition of financial constraint been available – which it was not, given YITS' limitations – it would presumably have resulted in a lower coefficient.

likely to leave before completing their programs (see also Krahn and Andres, 1999). We do not know specifically about the completion status of *all* groups, but the best guess is that the same groups which are known to have systematic difficulties in accessing PSE also have systematic difficulties in completing it.

The reason this is likely the case is that for the most part researchers believe that the barriers to completion are largely the same as the barriers to access. This is especially true with respect to finances. Many researchers have concluded that the need to meet educational and living costs can increase the possibility that a student will not complete his/her program of study (Hemingway and McMullen, 2004; Lambert et al, 2004). Student debt has also been found to impact students' persistence and completion in university study, as those with higher levels of student loans were more likely to leave earlier than those who received a greater proportion of grant-based funding (McElroy, 2005, 2006). Similarly, the United States Government Accounting Office (1994) noted that a shift in the loan-grant mix could improve retention among low-income students. The study also found that this effect was limited to the first two years of study, after which time students became insensitive to changes in the loan-grant mix. St. John and Starkey (1995) also demonstrated rather clearly that among lower-income students, grants were considerably more effective than loans at improving persistence (all forms of aid were shown to be negatively correlated with persistence because aid is a correlate of need; however, the correlate was much smaller for grants than loans).

The one major difference between access on the one hand and completion and retention on the other is that researchers have identified a different set of "barriers", namely what has variously been described as "academic integration" by Vincent Tinto (1992) or "lack of fit" –by Barr-Telford et al (2003). Basically, this is a variation of the "motivation" barrier which only occurs *after* entering PSE – in essence, what happens is that individuals cease to see their present program of studies and/or institution as being relevant to their long-term future (personal views on vocation and career is particularly important here) and hence they decide to terminate their studies. Tinto – whose theories are paradigmatic in the field – therefore stresses the importance of *integrating* individuals into a campus, both academically and socially, so that they believe they belong there and are less likely to discontinue (Tinto's theories on dropping out are linearly descended from Durkheim's theory on suicide).

There is, however, one group of students which appear to have a very particular set of issues with respect to completion; namely, Aboriginal students. R.A. Malatest and Associates, Ltd. (2004) argue that the key factors impacting persistence and completion among Aboriginal people are family and personal issues. As many Aboriginal students must move to urban centres, away from their home communities, and carry with them complex responsibilities, the challenges they face are much greater than those faced by many non-Aboriginal students (see Holmes, 2005). Being on average older than other students, they also are more in need of child-care services and tend to have more pressing financial needs, which simply add to the overall pressure of attending and completing PSE.

An Ontario Perspective on Accessibility and Retention

The specifically Ontarian literature on access is disappointingly thin; nearly all the significant research about barriers to education is national in scope. However, there are a number of studies about access to education and determinants of education which make it possible to compare Ontario with other provinces in terms of access and retention.

Simple access rates, that is, the rates at which Ontario students access PSE, have been a difficult source of comparison for some time. Prior to 2002, the Ontario Academic Credit system meant that Ontario students entered PSE slightly later than students in other provinces, meaning that comparing participation rate among 18-21 year-olds was not an entirely apples-to-apples comparison. Since that time, the double cohort and its after-effects have also prevented apples-to-apples comparisons being made.

Perfect interprovincial comparisons are therefore not available, but the basic picture is relatively clear: according to Junor and Usher (2004), among 18-21 year-olds, Ontario had a university participation rate of 25.5% and among 19-22 year-olds, a rate of 29.3%. These figures are comfortably above the national rates of 20.8% and 23.8%, respectively. And this is not simply a matter of having a large university system and a comparatively small college system. College-going rates⁴ among 18-21 year-olds in Ontario were slightly below the national average (12.9% vs. 14.3%), but the national average is heavily skewed by the effects of Quebec and its CEGEP system. In fact, outside Quebec, Ontario's college participation rates among 18-21 year-olds is higher than any other province in the country, higher even than Alberta and British Columbia. Ontario's combined PSE-going participation rate of 36.6% is ahead of the national average of 33.9% and just behind those of the leading provinces Nova Scotia and New Brunswick. Undoubtedly, Ontario numbers are inflated somewhat because of the double cohort, but even prior to the arrival of the double cohort, in 2001-02, total PSE participation rates were above the national average (33.4% to 32.4%). In addition, Johnson (2008, forthcoming) finds that Ontario's rates of continuance from high school to university are roughly at the national average though well behind rates in the Atlantic. He also shows that persistence rates from year one to year two are better than in most provinces.

But while these results reflect well on Ontario, it does not immediately follow that access in Ontario is unproblematic. Recall from our earlier discussion that access is to some considerable degree influenced by things such as family income quartile and parental education levels. Ontario's share of the country's high income earners is above its demographic weight, and in terms of parental education, among 25-44 year-olds it has the highest levels of university attainment of any province in the country (Junor and Usher, 2004). This is partly as a result of a healthy university system but

⁴ College data is for 2002-03.

partly due also to its ability to attract highly educated people from across Canada and around the world. In other words, simple demographics and our knowledge of basic determinants of PSE access would lead us to expect that Ontario would have higher access rates than other provinces. The important question is: holding those factors constant, how well does Ontario do in terms of access?

To answer this question we can turn to a number of very recent studies which have looked at determinants of access using the YITS and which have used province of origin as a variable. Frenette (2007b) shows that the gap in university participation between children from the 1st and 4th income quartiles is roughly the same in Ontario as it is in Canada as a whole (gaps are largest in Quebec and smallest in British Columbia). Perhaps the most striking result among recent studies is Johnson (2008, forthcoming). Controlling for a range of other socio-demographic factors, respondents from all other provinces were far more likely to access university directly after high school than a similar youth cohort from Ontario. The effect was not statistically significant in Alberta and Manitoba, but in the rest of the country the provincial effect was both strong and significant, ranging from 7.4 percentage points more likely to enroll in Saskatchewan to 42 percentage points more likely in Newfoundland.⁵ However, Johnson found no statistically significant differences between provinces in terms of year-on-year persistence.

In terms of finances and financial aid barriers, it is certainly the case that Ontario students are paying fees above the national average. As Usher (2006a) shows, this remains true even after tax credits and grants to students are applied. Indeed, among grant recipients – those theoretically most in need of help – net tuition in 2003-04 (the latest year for which information was available) was higher in Ontario than anywhere else in the country, due to higher tuition and lower grants. In terms of debt loads and repayment burdens, Ontario students' incidence of debt appears to be roughly the same as the country as a whole but the amount of debt is higher. However, since starting salaries are somewhat higher in Ontario than elsewhere, this means that repayment can happen somewhat faster. Indeed, according to the National Graduate Survey 2000 (shown in Junor and Usher, 2004), Ontario graduates were repaying their loans at much faster rates than students elsewhere in the country.

So, taken in sum, what does this evidence say about access issues in Ontario in particular? It suggests that while there may be some issues in terms of direct high school-to-PSE transition, overall Ontario looks a little bit better than the rest of the country in terms of access outcomes, but no more than would be expected simply due to the fact that it has a wealthier and better educated population. Poor students tend to be paying more out of pocket and taking on more debt than students elsewhere, but this has not resulted in a noticeably less equal system or a situation of abnormally difficult-to-repay student debt.

⁵ To an extent, this may represent the Ontario secondary school system's tolerance for so-called "victory laps" (the practice of staying on in secondary school for a fifth year to improve one's grades for college or university), but it is a remarkable statistic nonetheless.

Ontario's access and persistence issues are therefore likely to be very similar to the issues of Canada as a whole, and the barriers and necessary remedies likely to be the same, too. This is not to say that the country is homogeneous and undifferentiated. In Ontario, access issues regarding students from remote areas are important given its vast size, as are access issues related to immigration and visible minorities. But issues of distance and immigration will not be different in Ontario than they are in, say, British Columbia. What we learn about access and barriers about each of these groups nationally is likely to apply to each of them in the specific context of Ontario as well.

Part II –

Knowledge Gaps in Access to Postsecondary Education

From the perspective of an organization like HEQCO, there are two research agendas that present themselves with respect to the issue of access.

The first agenda is a diagnostic one: monitoring participation rates of various groups and keeping track of certain affordability indicators. The second is a more exploratory one: finding out more about how various barriers combine to stop individuals from pursuing PSE and what measures can be taken to help people overcome these barriers. Each of these agendas is examined in turn over the next few pages.

Measuring Access and Completion on an Ongoing Basis

Given the current constellation of policy concerns, the basic indicators which need to be examined on a regular (i.e. annual or biannual) basis are overall university and college participation rates, by gender, income, ethnicity, language, disability status, Aboriginal status, urban/rural status, and the newly-important “first generation” status. At the moment, most of these access rates are not tracked at a provincial level, and HEQCO could perform a valuable service simply by regularly collecting and publishing these data, thereby creating a set of standard “official” statistics on access to PSE which can then become the touchstone of future policy development in the area. However, given current data collection practices, providing consistent data on each of these subjects is somewhat problematic. What follows is a description of the state of data in each area and the possibilities for data collection in future.

Overall Participation Rates. In order to report overall participation rates, one needs to have a common numerator and denominator. Normally, this is reported as the percentage of youth of a particular age group (18-21 or 18-24) who are enrolled in a given year. Therefore, one needs to know both how many Ontarians are in a particular age range (easily available through Statistics Canada) and how many Ontarians of this age are enrolled in a PSE institution.⁶ This latter number is not quite so easily obtained. Postsecondary Student Information Survey (PSIS) data from Statistics Canada should in theory capture this, but there are institutions in Ontario which are not yet participating in the PSIS process.

Participation Rates by Gender. Effectively, the state of data on gender should be the same as it is for overall participation rates. PSIS should provide most of the necessary

⁶ Canadian provincial participation rates are traditionally calculated as total enrolments in an age group over total population; however, to the extent that the province is a net importer of students, this tends to inflate actual participation rates because of the presence of international students and out-of-province students in the numerator.

data, while the rest can be easily filled in directly by institutions. Information on the number of males and females in the relevant age population can easily be obtained from Statistics Canada to derive a “rate”.

Participation Rates by Family Income. Accurate data on rates of attendance by family income are very hard to obtain. Some attempts in Ontario have been made using student self-reports (e.g. the Acumen applicant survey), but these are widely regarded as unreliable since it is quite unclear how well students can estimate their parents’ income. Some data on income is collected by student aid officials at the provincial and institutional level, but not all students fill in these forms.

Since both student survey data and existing administrative data are incapable of answering this question, tracking participation is an area where some kind of new instrument will be required to produce regular results. The three possibilities are: 1) use institutional data on students’ “permanent addresses” to create a sample that would allow for a survey of parents which would focus on income and resources; 2) use institutional data on “permanent addresses” to create a sample which allows for a “postal code” analysis of students’ parents’ income; 3) use a combination of data from PSIS and data from the Longitudinal Administrative Database (LAD) to do periodic checks of parental income using taxfile data.

Each of these options has advantages and disadvantages. Of these, there is no question that a PSIS-LAD connection is likely the most accurate (and provides both the numerator and denominator to create a “rate”, which the other two options do not), though certain obstacles exist to using this on a regular basis, the most obvious being that PSIS is not entirely operational and that a PSIS-LAD connection is still awaiting clearance from Statistics Canada’s data protection committee. A postal code survey could be done relatively cheaply, and indeed, has already been done by Acumen Research for the Council of Ontario Universities earlier this decade. However, there are significant doubts about how well individual incomes can be approximated from census-tract data at the postal code level. A survey of parents could be done relatively cheaply, though it is not clear how easy it would be to get parents to answer questions about their income. In either of the latter two cases, data would need to be obtained on the family income distribution of youth in particular age brackets (age 15-18 is probably the best bet; an older sample would likely be biased by children leaving home), in order to create “denominators” for the participation rates. This cannot be done with a census, but might be done either through the Survey of Labour and Income Dynamics or the Labour Force Survey (both of which are generally inferior to the census in that they have smaller sample sizes which may make their estimates for particular province- and age-specific groups less reliable).

Ultimately, an annual look at parental income using PSIS-LAD is the best option, but in the short-term, an annual postal code survey is probably the best alternative. It will not be especially useful in terms of determining the *exact* incomes of parents, but it should be sensitive to changes in the composition of the student body, which is probably what matters in policy terms in any case.

Participation by Ethnicity. Data on ethnicity and language is not currently collected administratively. Data on ethnicity therefore needs to come from some kind of survey. The most complete possible sample source here would be the census, which could easily provide data on student participation (albeit from a previous year). The National Survey on Student Engagement (NSSE) collects data on both ethnic identity and ethnic ancestry, which means that Ontario universities are relatively well-covered on this question (currently, all Ontario universities administer NSSE to a large percentage of their freshman and senior classes every two years), though at the moment this data is not public. The Ontario College Student Engagement Survey (OCSES), which now collects data at all Ontario colleges on a regular basis, also has an ethnicity question, though the options for identification are somewhat different than the NSSE version, meaning that reporting outcomes for the college and university system are at this point incompatible. There is no reason, however, that the questions on the two surveys could not be harmonized in relatively short order.

In the short term, it is therefore probably best to use census data to report on the ethnicity issue (data for 2006 will be available early in 2008). In the medium term, it should be possible to negotiate the release of NSSE data in universities and then create some kind of survey data collection system in the colleges which would provide data to match the universities' data in this area. Some use of census would still be required in this case in order to create denominators for the "rates" of participation.

Participation by Aboriginal Status. The situation with Aboriginal status is very similar to that for ethnicity in that data is available from the census and through the ethnicity and ancestry questions on the NSSE and the OCSES.⁷ Again, NSSE and OCSES have slightly different ways of asking about Aboriginal status and so the two reporting systems are not entirely compatible. Options for improvement of coverage are therefore identical to those for ethnicity.

One "twist" in the Aboriginal student data, however, is that Aboriginal students traditionally attend PSE much later in life than other students. As a result, while a "denominator" of youth aged 18-21 may make much sense for the non-Aboriginal population, an older age group is probably required for Aboriginal groups.

Participation by First Generation Status. The situation with first generation status is somewhat similar to that for ethnicity in that data is available from the census and through the ethnicity and ancestry questions on the NSSE and OCSES. The main difference is that one cannot use the census to derive rates in the short term; nor is it entirely obvious how a "denominator" should be constructed.⁸ Options for

⁷ The NSSE does not, however, permit a distinction between status and non-status Indians. If this were an important policy variable then changes to the instrument would need to be recommended for the 2010 round of NSSE.

⁸ It might be possible to use the census education questions to identify children aged 15-18 who live with parents without PSE (older than that would not be advisable because it would bias the sample by excluding those individuals who had left home); however, it should be noted that because the census looks at "highest level completed" rather than "highest level participated in", the resulting definition of "first generation" would be somewhat different than that used by the Government of Ontario. The Labour Force Survey uses questions which could be used to create a denominator which is more in line with Government of Ontario definitions, but obviously, with only about 15,000 respondents in

improvement of coverage in improving the collection of data on the numerator are therefore similar to those for ethnicity; how to collect data on the denominator is a more complicated matter which would need to be examined further.

Participation by Language. The situation with respect to data on language is similar to that on ethnicity except that NSSE does not currently collect this data (though OCSES asks about mother tongue). So, again, the best data on this subject at the moment would probably come from the census; over the medium term (2010), a language question could be added to the NSSE data collection process. Some use of census would still be required in this case in order to create denominators for the “rates” of participation.

Participation by Disability Status. There is no administrative data collected on students with disabilities, which means that survey data must once again be used. Currently, again, only the census really covers the entire province (OCSES asks about the presence of a disability while NSSE does not).⁹ More data could be collected through the kind of process described above for “language”.

Participation by Rural/Urban Status. This is probably the most difficult group for which to measure access for the simple reason that rural/urban status changes for many rural students simply by attending college or university in an urban area. It might be possible to track students whose addresses are from rural areas longitudinally, though this brings with it a host of problems related to practicality and cost which are examined below in the section on completion rates. The census is not an option for tracking here in either the short or long term because it does not ask questions about rural/urban origins.

One option, of course, would be to insert a “community of origin” question into the NSSE and OCSES (the Canadian Undergraduate Survey Consortium has been using such a question for some years). However, that only provides a numerator; a denominator would still need to be created in order to create a “rate”. In this respect, using data from the *previous* census to look at total numbers of youth of particular ages might create something close to a comparable cohort from which to calculate a denominator and hence a rate of participation.

Completion Rates by Various Statuses. To this point in this section we have been examining simple participation rates. This is in general a relatively easy thing to do:

Ontario (fewer than 10% of whom, it should be expected, will have children in the relevant age range) the sample size is less than ideal.

⁹ Statistics Canada does not have a set definition of “disability”; instead, the census long form asks a series of questions wherein respondents are asked if they have one of a number of conditions which limit daily activity in one of a number of ways. The census therefore could be used just to examine participation rates of Ontarians in a particular age range with *some kind* of activity limitation. The census does not carry specific information by *type* of disability (e.g. visual disability, hearing disability). Information of these is collected nationally through a post-censal survey known as the Participation and Activity Limitation Survey (PALS); however, the PALS sample size is not sufficiently large to take a detailed look at rates of participation at a provincial level.

survey students, count them by whatever statuses one cares to use, extrapolate the number over the entire student population, and divide by the relevant denominator. Calculating completion rates is a much more complicated thing to do because it requires one to actually *follow* students over a period of time. It is even more complicated to do by status because that status must be recorded somewhere. There are two possible ways to follow students longitudinally: either through administrative or survey data.

Administrative data is problematic for a couple of reasons. The first is that not all institutions have the same capabilities in this respect; and the second is that administrative data on family income, ethnicity, language, aboriginal status, disability status, and parental education simply do not exist.

The alternative longitudinal method would involve creating a survey such as YITS at the provincial level. This would provide an enormous wealth of data over time, but the sample size would need to be very large indeed to capture data on each of the statuses enumerated above and the cost would likely be very high. YITS itself could be used, of course, but the sample size for Ontario would probably not be high enough to provide any useful data on completion by ethnicity, aboriginal status, and disability status. Moreover, the younger of the two YITS cohorts is currently 22 years old; as no new YITS cohorts are currently confirmed, even if a new cohort were to be recruited today (say as a follow-up to the 2009 PISA), they would not reach PSE until 2012 at the earliest and would not provide reasonable completion data until 2017-2018.

A cheaper alternative to completion rates might be to measure attainment rates. All the necessary data on attainment rates by age range (e.g. age 25-30), ethnicity, language, Aboriginal and disability status are easily available from the quinquennial census. These are of course somewhat contaminated by inflows and outflows of graduates after graduation, but they still represent a reasonably good source of information on who completes postsecondary education in Ontario. To the extent that a group's attainment rates and participation rates differ, one can infer that this group may have some extra issues with respect to completion which require further investigation.

What We Need to Know About Access and Completion: Filling in the Gaps

There are definite limits to what existing databases can tell us about barriers to access. The work of scholars such as Marc Frenette, Ross Finnie, and Dianne Looker (to name but three of the many scholars that have worked at exploiting databases such as YITS and PEPS) have gone a long way to filling in some of the basic gaps in the access literature, but it is not clear that there is much left to learn from these databases. Presumably some new details will come from the YITS as more survey cycles come in, but these are more likely to add colour to an existing picture rather than facilitating genuinely new discoveries.

In effect, Canadian researchers have done an extremely good job over the past decade of pin-pointing which groups are disadvantaged in terms of access and in describing the relative importance of the various barriers. What we are left with are a number of questions about “why” barriers affect some people and not others and “how” these barriers can be overcome. It is these questions which this final section will highlight, along with some brief suggestions about the kind of research that can be conducted in order to answer these questions. For the sake of convenience, the broad research categories have been divided into two – *getting into PSE* and *paying for PSE*.

1) *Getting in to PSE*: We know from various studies that academic achievement is positively correlated with family income. We know that the poor academic results in secondary school negatively affect students’ chances to attain PSE. And we know that in general over half the people who are not going on to PSE say that they either have “no barrier” going to PSE or have an academic barrier to going.

What is at issue here, then, is a mix of mutually-reinforcing low expectations and low academic achievement, both of which are correlated with low-income status. But family background is not destiny. Many individuals who come from low-income backgrounds are capable of surmounting these barriers; why, in short do some people manage to do this and others not?

In part, the research that is needed is really research about preference formation: why do people form preferences for PSE and why do they form attitudes for specific forms of education (i.e. college vs. university)? Answering this question will require a great deal of qualitative research – interviews with young people (preferably junior high school and the early years of secondary school) who have been deemed “at-risk” and/or who have low grades. There are clearly ways in which these individuals have conceptualized their futures which are fundamentally different from the ways in which high academic achievers do. Without understanding more about how these conceptions are formed, it is unlikely that new policies can be developed which will affect youth aspirations.

One particularly useful type of research in multi-cultural Ontario would be to conduct at least part of this research on ethnic lines. We have hints from a number of surveys and studies (Sweet and Anisef, 2005; Junor and Usher, 2004) that different ethnic groups appear to have systematically different preferences in terms of educational aspirations. In part, this is no doubt rooted in those communities’ lived experiences in terms of the intersection between education and the labour market: parents with Chinese backgrounds may have very different ways of talking about education with their children than parents from Mediterranean or Latin American backgrounds.

In combination with research on aspirations, a great deal more work needs to be done on raising educational achievement in schools. Data from PISA suggest that in Canada, much more of the difference in educational achievement exists within schools, rather than between schools. This is good news in the sense that it means that neighbourhood (and hence income) effects are relatively low compared to other

countries. But it also means that whatever solutions we have in terms of raising standards is going to require a lot of work within each and every school to raise the standards of the lowest-performing students.

One relatively promising sign for the province of Ontario is that after a decade of work by the Educational Quality Assessment Office (EQAO), there is evidence that secondary schools are beginning to create a “culture of data”, whereby annual test results are dissected and examined within individual schools and form the basis of curriculum experiments designed to improve academic results. A number of these experiments have been highlighted by the EQAO on its website under the title “School Success Stories”¹⁰. Yet these initiatives for the most part cannot be called “success” because their initiatives have not yet been evaluated rigorously – for the most part they are simply examples of schools basing remedial action plans on quantitative data. It might well be a good use of HEQCO’s money to work with schools and school boards to fund evaluations of some of these initiatives in order to begin to create some depth of understanding about the efficacy of these changes.

More generally, to the extent that there are general attempts in the community to either raise educational achievement (e.g. the JUMP foundation and its work on Mathematics curricula), increase PSE aspirations, or both (e.g. Pathways to Education¹¹), there should be money available to study the effects in a systematic fashion, ideally through experimental or quasi-experimental means.

2) *Paying for PSE*: Thanks to work conducted over the past decade, there is a much better understanding now of students’ financial condition than there used to be, as well as a better grasp of the extent to which financial matters are on their own responsible for disparities in participation rates between rich and poor. What remains to be learned is how financial aid programs can be tweaked in such a way as to help those youth who do see finances as a barrier actually make it into PSE.

In this respect, the key research debate – still unresolved – is whether liquidity constraints represent a more important barrier than cost/benefit constraints. If liquidity constraints are the problem, then the proper policy response is to increase the amount of repayable aid available to students (i.e. loans). If the problem is the cost/benefit analysis, then the proper policy response is to increase the amount of non-repayable aid to students (i.e. grants).

¹⁰ <http://www.eqao.com/Success/Stories.aspx?Lang=E&Aud=Success&App=Success&gr=036&yr=07>

¹¹ Pathways to Education has published an “executive summary” of an “assessment” of its program which was done pro-bono by the Boston Consulting Group. But this document is missing some basic information with respect to data sources and controls which would be considered normal in program evaluation; given the wide enthusiasm for the Pathways model, which does appear to be rooted on some principles which might be seen as “best practice”, it might be useful to evaluate the program and its effects more thoroughly.

There are a number of projects underway which may shed some light on this question – mostly related to the Measuring the Effectiveness of Student Aid (MESA) project funded by the Canada Millennium Scholarship Foundation. But it is a difficult question to answer based solely on existing databases and surveys; as MESA has found, a *combination* of administrative databases and surveys may be the best way forward in terms of research. Beyond that, it is difficult to see how anything other than experimental research (i.e. research using random assignment methods) are likely to explain very much.

A related question worth investigating is that of “debt aversion”. The concept of debt aversion is foremost in the public discussion on access to education, and has been for about a decade. But, remarkably, the idea that “fear of debt” is actually responsible for deterring individuals from pursuing their studies has remarkably little empirical support. Part of the problem from a research perspective is that it is extraordinarily difficult to distinguish conceptually between “debt aversion” and a “cost/benefit constraint” (that is, a perception that a course of study costs too much given the expected returns). When a student says “I will not borrow in order to pursue a course of studies”, it is possible that they are expressing an aversion to holding any debt (some Muslim students, for instance, may object to interest-bearing loans on religious grounds). It seems more likely, however, that they are expressing a fear that they will not be able to repay the loan, which is just another way of saying that the program of studies is too expensive given the benefit. This creates a problem from an analytical point of view because it means that comparing a “treatment group” which takes on debt and a “control group” which has reduced debt due to grants is useless. True, the grants reduce debt, but they also reduce net cost and hence affect the cost/benefit of education as a whole.

One possible alternative line of experimental research would be to offer a treatment group work opportunities rather than grants. This is a slightly purer debt-aversion experiment than a grant providing incentive because it provides an opportunity to increase resources without tying the benefit to attendance (which implicitly lowers the cost of attendance and thus contaminates the experiment).

A final area which is in need of some examination is the extent to which the student aid application system itself might be a barrier. A number of recent studies in the United States (see Dynarski and Scott-Clayton, 2006) have focused on the question of whether or not the student aid application is more complicated than it needs to be and whether this complication itself actually acts as a deterrent to low-income students. Similar studies might be valuable, perhaps one to see if it is possible to reduce the complexity of the student aid form without substantially altering its distributive properties and another to see if providing students with better information about student aid or even providing professional assistance in filling out the forms makes a measurable difference in aid applications and access.

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