Educational pathways to equity: A review of global outreach and bridge practices and policies that promote successful participation in tertiary education

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Abstract

Global efforts to widen participation in tertiary education, especially among populations historically denied access or opportunity, have brought about an array of programs and policies to ensure disadvantaged students aspire to, plan for and succeed in tertiary education. Through the creation of outreach, partnership and bridge programs, many countries have taken positive steps towards expanding the educational pathways available to its most vulnerable populations. This report provides a meta-analysis of the global practices related to outreach and bridges between tertiary institutions and primary/secondary education. By providing a map of the practices and policies used worldwide, this report offers concrete strategies for practitioners and a framework for policymakers to use in considering areas for reform. The report concludes with gaps in practice and areas that warrant future attention, support and research.
Introduction

Today’s global emphasis on widening participation in tertiary education is largely driven by arguments for equity, citing the myriad of benefits of extending educational opportunities to individuals and societies worldwide. There are several mechanisms designed to enhance educational equity ranging from modified admissions policies, the establishment of new institutions, financial schemes, special programs, loan, grant and fee waiver programs and government driven educational reform.

Yet, despite these efforts, access to post-compulsory educational opportunities continues to favor those with the most privilege. Rates of enrollment vary across national boundaries, between racial and ethnic groups, by gender and within class or caste systems. These gaps suggest that despite efforts at massification and broader policies to widen access, the benefits of tertiary education have yet to fully reach those who have been previously excluded.

The complicated dynamics of widening participation in tertiary education require targeted interventions to reduce academic, social, informational and monetary barriers to access and success, particularly among disadvantaged groups. Research to date has identified several kinds of interventions that intend to help students overcome the aforementioned barriers and complete higher education. Outreach and bridge interventions are particularly effective at promoting equity by targeting two important levers in access and success.

First, they widen the possibility of participation in tertiary education by increasing awareness, exposure and preparation for university study.

Second, these programs work to equip students with the skills, knowledge, and expectations necessary for successful tertiary education participation and completion. This dual benefit makes outreach and bridge initiatives critical to the pursuit of equity.

The objective of this report is to document the range of interventions used to expand successful participation in tertiary education worldwide. Based on existing research that identifies critical mechanisms for ensuring access and opportunity, this paper presents a scan of practices and policies used globally to ensure that disadvantaged students aspire to, plan for, and succeed in tertiary education.

By providing concrete strategies for use by practitioners, and a framework for policymakers to use in considering gaps in intervention strategies and areas for policy support, we hope the examples provided will encourage new strategies to benefit those who have been previously excluded from postsecondary schooling opportunities. Moreover, we hope that others will adapt and borrow from this report when working to help students from marginalized communities overcome barriers to tertiary degree enrollment and completion.

Methodology and Scope of Study

This section describes the methodology used to inform this paper, including types of programs and practices considered for inclusion in this report, populations described, sources used, and scope of this report.
Global efforts to expand access to tertiary education span a wide range of intervention types including admissions reform, financial schema, and broad education reform. This report specifically examines outreach and bridge programs and policies that focus on preparing students to plan for and successfully matriculate in tertiary education.

Although the terms “outreach” and “bridge” are used with some variation around the globe, outreach programs typically include services and activities that engage primary and secondary school-aged children and youth, while those considered bridge programs generally targeted graduates of secondary education. Practices and policies included in this report meet at least one of the following criteria:

- Population targeted is currently underrepresented in tertiary education;
- Intent is to widen access to tertiary education through a formal intervention;
- More than a monetary intervention; or
- Focus population includes students enrolled in primary or secondary education or first year university students.

Outreach programs typically include services and activities that engage primary and secondary school-aged children and youth, while those considered bridge programs generally targeted graduates of secondary education.

As efforts to promote social justice seek to redress past exclusion or marginalization, this paper focuses on students for whom higher education was previously inaccessible are those. As such, this report describes efforts to promote equity in tertiary education and completion for the following underrepresented or underserved groups:

- Low-income students;
- Students who have minority status in their country of residence based on their racial, ethnic, religious, or cultural characteristics;
- Students from rural communities;
- Women; and
- Students attending primary and secondary schools or residing in neighborhoods reporting low tertiary enrollment rates.

It should be noted that for the purposes of this paper, determination of “low-income” status varies depending on the average level of income in the student’s country of residence. Since monetary income alone is often variable, particularly in the current economic climate, parental education and occupation is often a proxy for income. In addition, individual countries usually have their own poverty benchmarks, and often use these markers to determine eligibility for governmental government-funded programs and policies.

Definition of minority status is also country-specific, and can be tied to indigenous affiliation or migration status. Ethnic status, as well, varies by region and country, and some areas include more than one indigenous or ethnic minority group. Minority and ethnic groups are often underrepresented in tertiary institutions, both as students and as faculty members.
Rural students are another important equity group targeted by many interventions. Rural students often have restricted access to resources and educational opportunities, few formally educated community role models, and limited exposure to tertiary institutions. In addition, young people from remote rural areas may have limited access to primary and secondary education, which further limits their academic preparation and aspirations. Women are another equity group that has historically been excluded from much of tertiary education. While the number of women in tertiary education is growing, there is still completion inequity in some countries, particularly those countries with a smaller population of students enrolled in tertiary education.

Also, although the numbers of women who complete tertiary education are increasing, women are often overrepresented in areas of study such as education, the humanities, and nursing, and underrepresented in science- and mathematics-related disciplines. Finally, many outreach programs target specific schools or communities reporting low tertiary enrollment rates, as this is another way for programs to reach students who are members of many of the aforementioned groups.

Research for this report was collected from a wide array of resources, drawing on primary and secondary data and seminal research in the field of higher education access. Specifically, the following sources were consulted in the development of this report:

- Websites (universities, educational ministries, non-governmental organizations, foundations)
- Books, articles, and scholarly reports
- Policy reports and documents
- Program documents
- Funded program descriptions
- Multiple program and research databases
- Communications with program staff
- News articles and reports

The intent of this report is to review the literature related to outreach and bridge programs and policies that aim to connect primary or secondary education to higher education. This report offers a range of ideas used worldwide and, in some cases, provides real examples that illustrate these ideas. The strategies presented in this report are not exhaustive but present a sampling of outreach and bridge policies and practices being implemented globally. Furthermore, “programs of note” are offered as a way to contextualize strategies.

We faced some challenges in the process of data collection for this report, such as the fact that there was limited program documentation available from some regions of the world. We were also limited to publications and websites that were written in English, or easily translated into English, which further limited our pool of resources. Other limitations to this report include:

- **Exclusion of monetary interventions** - A major barrier to tertiary study is financial. Financial barriers prevent students from aspiring to tertiary study, preparing for tertiary entrance examinations and applications, and ultimately paying for university study. The interventions that seek to mitigate the impact of financial barriers range from national
funding policies and loan programs to grant opportunities and institutional scholarships. Given the intractable nature of most financial challenges and the wide array of funding schemas, we have deliberately excluded them from our analysis. A full review of funding schemes, both national and private, warrants a separate review and is thus beyond the scope of this report. To the extent, however, that grants, scholarships and related financial support are integrated with broader programs or policies, we have included them in examples of other non-monetary interventions.

- **Focus on baccalaureate programs** – Formal education beyond compulsory education exists in many forms, including vocational education, certification programs, skill courses, or trade programs. However, the goal of widening participation in tertiary education in most countries is to ensure that all citizens have access to opportunities for economic mobility. In most cases, educational attainment at baccalaureate-granting institutions has the biggest impact on economic mobility. Therefore, without devaluing the benefits derived from other postsecondary programs, this report highlights bridge programs and outreach programs that create pathways to baccalaureate-granting institutions.

- **Scarcity of empirical research or program evaluation** - A key goal of this report is to document global efforts intended to widen successful participation in higher education through effective practices and policies. While our research uncovered a sizeable body of documentation describing the existence of such efforts, very few program evaluations or impact studies were available, thereby offering very little empirical evidence of a given program’s true impact. This has implications for replication, as well as for ongoing program improvement. We therefore included United States (U.S.)-based research on the effectiveness of practices while documenting their use globally.

Outreach and bridge programs and policies take many forms, ranging from stand-alone programs to comprehensive initiatives. The body of this report is divided into two sections: outreach programs and policies, followed by bridge programs and education. We conclude with a summary of findings, as well as recommendations for future research, practice and policy.

**Outreach Programs and Practices**

The hurdles facing educationally or economically disadvantaged students on the path to tertiary education are numerous and often debilitating. Inadequate academic preparation and schooling, insufficient financial resources, low educational expectations and aspirations, absence of college knowledge or awareness, scarcity of support for tertiary planning, competing family or cultural interests and personal uncertainties are just some of the barriers preventing students from marginalized communities from successful participation in tertiary education (Egins, 2010). To reduce the impact of environmental, social, and educational risk factors that inhibit students from continuing their education beyond compulsory education, a variety of outreach interventions are used in every region of the world.

Outreach is a widely used term, particularly in the education sector. For the purpose of this paper, we set out to describe the practices and policies used in primary and secondary
education with the explicit intention of generating increased interest in and preparation for successful participation in university study. The strategies described in this section reflect a wide array of approaches to motivate, engage, assist and prepare students to succeed in tertiary education. Outreach practices and policies included in this report fall into four primary categories: academic preparation; awareness and aspiration building; personal planning and preparation, and structural interventions.

**Academic Preparation**

Research shows that academic preparation is among the most powerful predictors of students’ enrollment in tertiary education (Adelman, 1999). As a consequence of exposure to low-quality educational opportunities, students from disadvantaged populations are often inadequately prepared to study at the tertiary level, and thus unlikely to enroll in higher education. Academic preparation initiatives compensate for prior educational disadvantage by providing supplemental academic support, with the overall goal of increasing the number of academically prepared students from disadvantaged backgrounds who enroll in institutions of tertiary education.

Disadvantaged students’ educational experiences and academic needs vary across contexts and populations, Academic preparation outreach programs also vary accordingly. Many programs have relatively general goals, such as academic skill development or academic support. Other programs set specific goals, such as skill development within a particular content area or college entrance exam preparation. Several programs target high achieving, talented students from marginalized communities who show promise for tertiary study, while others target a broader student population. Categories of academic preparation described in this report include: tutoring; entrance exam preparation; skill development and language training; content knowledge and instruction; and dual or concurrent enrollment.

**Tutoring**

Tutoring programs are intended to compensate for students’ previous educational disadvantages by providing supplemental instruction customized to students’ individual academic needs. Tutoring programs typically match tutors with one or more students to facilitate provision of intensive academic support. The specific content of tutoring programs depends on program goals and student needs. In some programs, tutors work with students to develop content knowledge in specific subjects such as math or science in order to help students prepare to successfully complete secondary school coursework, pass exit exams, or prepare to study a particular subject at the tertiary level.

Other programs focus on building academic skills, such as reading comprehension, writing, or communication in an academic language, in order to prepare students more broadly for academic success at both the secondary and tertiary levels. In general, however, tutoring programs are designed to supplement the educational opportunities provided by schools, as well as to increase the number of students from disadvantaged groups who complete secondary school and enroll in tertiary education.
The structure of tutoring programs varies across programs. Tutors typically meet with students outside of school hours: before or after classes, on weekends or holidays, or during summer recess. Tutoring programs are often based on partnerships between the entity responsible for the program (e.g., a higher education institution or non-profit agency) and a nearby secondary school. Because of these partnerships, many programs are able to provide tutoring at the secondary school site. Tutoring programs often recruit university students to serve as tutors. The latter strategy has the additional benefit of being a very low-cost staffing solution as, in many cases, university students tutor on a volunteer basis. In addition to providing academic support, tutors can also become mentors to students, serving as role models and providing valuable advice and inspiration. In some cases, tutors represent models of continued education for the students they serve.

Program of Note

- TeachOut is a tutoring program staffed by student volunteers from the University of Cape Town in South Africa. The program targets disadvantaged schools in the townships around Cape Town, aiming to increase students’ academic readiness for tertiary study through tutorial workshops held after school and on Saturdays. For students in grades 8 through 10, workshops focus on developing skills in written and spoken English, the primary language of instruction at South Africa tertiary institutions. For students in grades 11 and 12, workshops cover a range of subjects, including English, math, physical science, and others as needed. The goal of the tutorial workshops is to supplement school-day instruction and help students overcome gaps in knowledge and skills. According to program materials, students, teachers, and volunteers report that tutorial workshops have improved students’ academic outcomes, including scores on standardized tests. TeachOut was founded in 2003 and is funded by Swiss Re Africa Limited (TeachOut, 2010).

Entrance exam preparation

Global demand for expanded access to tertiary education has prompted some institutions to modify admissions policies, in some instances eliminating entrance examination requirements. However, in some parts of the world, entrance to tertiary study continues to be populated by elite students who are well prepared for examinations that are either the sole or primary determinant of admission. Disadvantaged students who have not had access to high quality primary and secondary schools are very often underprepared to perform well on entrance exams. The goal of entrance exam preparation programs is therefore to increase the number of students from disadvantaged populations who are prepared to succeed on entrance exams and thereby gain access to tertiary education.

These programs use diverse strategies to support the needs of the students they serve. Many programs provide direct academic tutoring support and supplemental instruction in order to help students overcome gaps in content knowledge. For example, the Maths and Science Exam Preparations Project at the Nelson Mandela Metropolitan University in South Africa provides intensive exam preparation to disadvantaged students during grades 10 and 11, with a
particular focus on preparing them to enter tertiary study in science, engineering, and technology (Nelson Mandela Metropolitan University, 2010).

Another example is the Preparatory Program for Blacks and the Economically Disadvantaged, which coaches Brazilian secondary students in the full complement of exam subjects, including math, sciences, history, geography, and languages (Valentim, 2004). In other programs, students may be exposed to previous exam questions or participate in mock entrance exams, as has been done in Kenya, in order to build their familiarity with exam content and their comfort with exam-taking situations (Choti, 2009). In addition, exam preparation initiatives often provide students with other types of support such as guides with practical exam-taking tips and strategies to use during the exams (Ministry of Education, 2010).

Another approach to entrance exam preparation involves providing support to teachers at secondary schools that serve a high proportion of disadvantaged students or have low success rates on entrance exams. For example, the Pathways Program at Hue University in Vietnam targets teachers at nearby secondary schools that primarily serve low-income, ethnic minority students, including some schools where no students had previously passed the college entrance exam. As a result of training provided to the teachers, a growing number of students from schools involved in the program have now passed the entrance exam (Young & Chang, 2008).

The variety of strategies represented by entrance exam preparation programs reflects major differences in program goals and resources. Some programs seek to impact a targeted population and customize services to the needs of that group. In Brazil, the University of Roraima organized Ema Pia -- which translates to “the beginning of a path” -- to help indigenous students -- who face language and other cultural barriers to exam preparation -- prepare for the entrance exam (Phillips, 2008).

Similarly, the Preparatory Program for Blacks and the Economically Disadvantaged, discussed above, provides exam preparation support to Black and low-income students in Brazil’s cities (Valentim, 2004). Other entrance exam preparation programs are available to all interested students, such as the state-funded Own Your Future campaign in South Africa (Western Cape Education Department, 2010).

Program of Note

- The privately funded Super 30 was founded in India in 2003. Each year, the program selects 30 low-income students from across the country and prepares them for the entrance exam that determines admission to the prestigious Indian Institutes of Technology (IITs). Selected participants are provided with free academic coaching, lodging, and food. In the last eight years, 212 students out of 240 have qualified for IITs admission. In 2008, 2009, and 2010, 30 out of 30 students were admitted (Super 30, 2010). Inspired by the success of the Super 30 program, India’s Rahmani Foundation established the Rahmani 30 program in 2008. This program, which targets low-income Muslim students, also prepares participants for the IITs entrance exam (Majumder, 2010).
Skill development and language training

Even high achieving students from under-resourced communities are limited in their access to tertiary education due to inadequate educational preparation. As a result, many students pursue university study with skill deficits, specifically in the areas of language and technology. Students from language or ethnic minority groups may be educated in linguistic isolation, never gaining exposure to the academic language of nearby institutions of tertiary education. These students may have some familiarity with the academic language, but require practice using the language of instruction in an academic setting. Language preparation programs focus on building students’ academic literacy to enable them to succeed on entrance examinations, complete the application processes, engage academically with the institution and successfully participate in courses taught in the primary language of instruction.

A similar set of obstacles are faced by students who cannot effectively use technology. Students educated in resource-poor environments may not have gained exposure to computers or other technologies that are often crucial for gaining access to and succeeding in tertiary studies. These skill deficits may become major barriers as students attempt to gain access to information about opportunities in tertiary education, navigate the application process, seek financial support for their studies, and enroll in institutions that assume students have a basic proficiency in technology.

In order to rectify specific skill-deficits, language and technology skill development are common features of outreach programs that provide broader academic preparation services to secondary students from disadvantaged backgrounds. For example, the Siyabona Programme in South Africa targets disadvantaged secondary students with a strong interest in studying commerce at the tertiary level. The program provides students with training in computer literacy, in addition to offering tutoring in subjects relevant to their future studies (Blunt, 2000; Weir, 2002).

Program of Note

- As part of an institutional commitment to easing the transition to tertiary education, the University of Port Elizabeth (UPE) offers a Saturday morning program designed to increase university going among disadvantaged students. The programs emphasizes academic literacy through modules, notably "English for Academic Purposes" modules for those for whom English is a first or second language.

Content knowledge and instruction

Many outreach programs provide students with knowledge and instruction in content areas that are gateways to university study. Research shows that level of math preparation, for example, is a sign of academic preparation for university study, therefore content-focused programs typically focus on building students’ math skills, preparing students for entrance into math-related fields such as science, technology and engineering.
Indeed, many content-based academic preparation programs focus on the skills needed for science, technology, engineering, and math (STEM) fields. These programs prepare students from disadvantaged backgrounds to transition successfully into these fields of study at the tertiary level while simultaneously meeting the market demand for more professional expertise in disciplines critical to local economic development.

South Africa’s Math Incubator Schools, for example, are organized by Nelson Mandela Metropolitan University to prepare students for tertiary programs in STEM fields by providing between seven and 14 weeks of intensive math instruction to students in the eleventh and twelfth grades (Nelson Mandela Metropolitan University, 2010).

Similarly, the Pathways Program at the University of Namibia targets students from the marginalized Owambo ethnic group, with a focus on helping them prepare to study science and engineering at the tertiary level. The year-long program provides intensive study of science and math, and also develops students skills in computer literacy and communicating in English, Namibia’s academic language (MacGregor, 2008).

In addition to the short-term goal of helping students pursue opportunities to study at the tertiary level, content-specific academic preparation programs have the longer-term goal of encouraging students to pursue careers in a specific field of focus. While academic support services -- such as workshops and tutoring -- are aimed at achieving the short-term goal of exam success, programs frequently also provide additional career development support aimed at helping students develop their career plans, such as mentorships and internships that build valuable connections and experience in their field.

Program of Note

- The Student-Mentored All-Round Tutoring (SMART) project at the University of Cape Town (UCT) in South Africa started at the beginning of 2006, in order to provide assistance in math and science education to under-resourced high schools. The project, funded by South Africa’s First National Bank, recruits students to take part in 45-minute tutoring sessions in math, science, and English four times during the school week and activity and skills workshops for four hours each Saturday. The program places a strong emphasis on ongoing mentorship and learner evaluation, with teachers and about 100 UCT student volunteers working with participants on an ongoing basis. As of 2009, SMART was working with 180 high school students at each of its two study centers (University of Cape Town, 2010).

Dual or concurrent enrollment

Dual enrollment opportunities offer secondary students the opportunity to study at the tertiary level. Dual enrollment programs generally target students in the final years of secondary study and are intended to provide students with early exposure to university studies and the college environment, build aspirations to continue to study at the tertiary level, and expose students to the rigors of tertiary study.
These programs can be particularly effective for first-generation university students who might not otherwise be exposed to tertiary education. Like other outreach strategies, dual enrollment opportunities are implemented in a variety of ways. In some cases, secondary students are taught by faculty from a nearby institution of tertiary education, and attend class meetings at the institution. In some cases, institutions offer courses for which secondary students can earn credit toward secondary school completion while simultaneously earning credit at for tertiary study.

Our scan of global practices identified only a few examples of dual enrollment opportunities being utilized outside of the U.S. This may be due to the fact that dual enrollment programs can be quite costly to the university and operate best within educational systems that govern both secondary and tertiary education. These concerns are valid and warrant consideration prior to implementation. However, this approach carries long-term benefits including reduced time to degree completion and the decreased likelihood of losing students in the transition between secondary and tertiary study (Hoffman, Vargas, Venezia, and Miller, 2007).

Our research uncovered opportunities for dual enrollment embedded in larger, comprehensive partnerships between institutions of tertiary education and local secondary schools. For example, the Advanced Credit Experience Program in Canada -- developed by the Westview Partnership in cooperation with the Toronto District School Board -- offers low-income, minority, and immigrant high school students the opportunity to take part in dual enrollment courses at York University and Seneca College. Students selected to participate in the program spend one semester in an introductory half-course at the university, while also participating in a cooperative education placement. The aim of the program is for students to gain exposure to tertiary education within a structured and supportive environment, thus building confidence in students who would not otherwise have considered college as an attainable goal (Robinson, n.d.).

**Program of Note**

- At Stellenbosch University in South Africa, students from disadvantaged high schools who demonstrate academic potential have the opportunity to participate in the SciMathUS Post Matric Programme. Participants are registered as “special students” of the university, and have full access to facilities, such as the library, laboratories, computer labs and the student center. The structured 10-month program, which accommodates around 100 students per year, covers tuition for college preparatory coursework in math, science, or accounting. Students are also introduced to problem-based learning, aided in the development of study skills and computer literacy, and assisted with educational and career plans (Stellenbosch University, 2010).

**Building Awareness and Aspirations**

- The pipeline to tertiary education can be conceptualized as a process that begins when a student develops the predisposition to enroll. Students from disadvantaged backgrounds may, for a variety of non-academic reasons, believe that tertiary education is not a viable
option for their futures. Based on their low expectations, many disadvantaged students never develop an ambition to attend tertiary education.

- Others may entertain nascent aspirations to pursue tertiary education but, because they do not really expect to realize that goal, never seek out information or other supports that could break down perceived barriers. In either case, low expectations interfere with disadvantaged students’ development of aspirations to pursue tertiary education, effectively making it inaccessible. In order to help disadvantaged students see tertiary education as a viable option, many programs seek to build college awareness and enrollment aspirations.

- The low expectations of students from disadvantaged backgrounds can be partly understood as a social phenomenon. Students whose families or community members have not historically had access to tertiary education may not be exposed to role models who illustrate the possibility and promise of advanced study. Instead, they may assume that tertiary education is only accessible and valuable to those with more advantaged backgrounds.

- Awareness and aspiration-building outreach programs therefore aim to disrupt low expectations and narrow the information gap, facilitating the development of aspirations that include tertiary education. These outreach programs typically include the following types of activities: informational outreach, public awareness campaigns, and campus visits.

**Informational outreach**

Lack of information about tertiary education is the primary rationale behind outreach programs that seek to reduce gaps in students’ information or knowledge about opportunities in tertiary education. Sometimes referred to as “college knowledge,” the information that comes from outreach programs seeking to increase aspirations and readiness for higher education includes general knowledge of the benefits and experience of tertiary education and the specific content knowledge necessary for successful university study. College knowledge also encompasses the types of tacit knowledge that inform daily activities and behaviors associated with envisioning and planning for university experiences, such as how to pay for tertiary education, where to seek assistance to plan for admission, and the process for selecting a field of study.

Information outreach programs target a specific population (e.g., women, members of ethnic groups, or low-income students) or a community, and seek to provide information that may be missing or particularly relevant for a particular student, community, or culture. With regard to content, some programs provide information or advice about how students can select and gain access to a tertiary institution that will fit their needs and interests, what will be expected of students at the tertiary level, and how their formal education and related experiences can help prepare students to meet their goals.
Other programs introduce students to mentors and role models from diverse, and often disadvantaged backgrounds who have successfully used tertiary education as a pathway toward a rewarding career. These strategies provide students with role models who have overcome barriers and invite students to see themselves as potential members of a diverse educational or professional community. In this model, university students act as mentors or counselors to inspire and motivate secondary school students.

These programs also often target specific age groups. While aspiration and awareness programs are typically focused on secondary students, we discerned a few early awareness outreach programs which target students in primary schools, capitalizing on the early formation of future orientation and choice behavior. By raising aspirations, early awareness programs can influence students’ academic behaviors and outcomes so that they become increasingly prepared for tertiary study. Such programs introduce the concept of tertiary study through visits from current tertiary students, visits to tertiary campuses, and short lessons on the benefits of obtaining a tertiary degree.

Early awareness outreach programs are designed to increase access to tertiary education by providing students from disadvantaged groups with motivational messages about their potential, providing inspirational role models and highlighting the benefits of tertiary education. For example, the Top-Up Programme, a component of the Focus on College and University Study in the West of Scotland initiative, targets students in grades 5 and 6 from a region of Scotland with a low rate of tertiary participation.

Through workshops in schools and on the University of Glasgow’s campus, students learn about opportunities in tertiary education and steps they can take to become academically prepared to study at that level (University of Glasgow, 2010). In addition, because of the gender inequity that exists in some parts of the world, some programs include specific outreach to girls, hoping to encourage them to pursue tertiary education. Those initiatives that target girls typically also include raising awareness of careers outside of gender expected areas. Other programs simply encourage girls to value and continue their education.

Other awareness and aspiration-building programs target secondary students. For example, Canada’s Explore Your Horizons program provides secondary students with academic and career advice in order to help them clarify their goals and to promote higher aspirations. At the same time, the program provides information about college financial aid and applications in order to demystify these processes and reduce student perceptions that they the processes will be barriers to realizing their postsecondary goals (Canada Millennium Scholarship Foundation, 2007). Other programs provide secondary students with frequent or intensive exposure to tertiary education through mentorships or residential programs on campus in order to shape their aspirations and awareness.

Program of Note

- The Oxford Young Ambassadors Program in the United Kingdom, funded by the Sutton Trust and a private donor, serves secondary students who would be the first in their family to pursue university study. Students participate in a four-year-long program that
includes many opportunities to engage with Oxford University students and faculty members. Participating students visit Oxford three or four times each year for special lectures, workshops, residential stays, and other activities designed to build aspirations and raise students’ awareness about opportunities for university study.

- Students are exposed to information about a range of tertiary options to consider, rather than just information about Oxford. Their experiences at the university are intended to shape the aspirations of Young Ambassadors themselves, and also to encourage participants to become student leaders who can share information about Oxford and promote high aspirations among their peers in secondary school (University of Oxford, 2005).

Public awareness campaigns

In many parts of the world and in many sectors, public awareness campaigns are an effective strategy for shaping individuals’ thoughts and actions. This is certainly true of tertiary awareness and planning. Public awareness campaigns related to tertiary education work best when they directly engage with community members, in addition to using television, radio, print, billboards, cell phones, and the Internet.

One of the benefits of public campaigns is the possibility for multiple audiences: the primary audience for a public marketing campaign may be adolescents, or even primary school students, and its secondary audience might include parents or community members. Materials and messages shared with students or spread through mass media will likely also be seen or heard by family members, possibly influencing them to provide additional support for their child or even influence their thinking about their own opportunities in tertiary education.

The Pathways Program at Ateneo de Manila University in the Philippines illustrates how a public awareness campaign can effectively reach its targeted audience. The institution launched a media campaign that shares the life stories of students from disadvantaged backgrounds who overcame challenges in order to pursue study at the university. These stories appeal to their primary audience -- secondary students from disadvantaged backgrounds -- by encouraging them to identify with the success of the featured students.

The campaign also provides information about new affirmative action policies and scholarships targeted at disadvantaged students, encouraging students in the audience to use those resources to overcome the obstacles they face. Through these messages, the campaign seeks to both build students’ aspirations to pursue tertiary education and to make them aware of opportunities to realize those aspirations (Silva, 2008).

Program of Note

- South Africa’s Own Your Future campaign was launched in 2010 by the Western Cape’s Provincial Minister of Education and the Education Department at the University of
Western Cape. The campaign’s primary goal is to change the behavior of Grade 12 students so that more of them are prepared to pass their secondary school exit examination, called the “matric.” The campaign provides motivational messages in order to promote high aspirations and also shares practical study tips that encourage students to continue to grow academically during their final year of secondary study.

- The campaign’s slogan indicates that the primary audience is students: "Own YOUR future. Own YOUR success. Study hard to pass YOUR matric." However, the campaign has also sought to raise awareness amongst an important secondary audience that includes parents and other community members. Western Cape Education Minister Donald Grant, a spokesperson for the campaign, said “We need to treat the class of 2010 as the most important people in the province and I encourage all of the citizens of the Western Cape collectively to ensure that they are kept motivated, prepared and supported until they write their examinations” (Ministry of Education, Western Cape Province, 2010, para 5).

**Campus visits**

Visits to university campuses are utilized as singular outreach efforts and as components of broader awareness and preparation programs. The rationale behind this practice is simple: exposure to the university experience can foster interest and belief in one’s place on a campus, as well as educate on the range of possibilities associated with tertiary education. Campus visits are often part of efforts to expand perceptions of opportunity among disadvantaged populations. In this context, campus visits are used to counter previous negative perceptions or aspirations, while also introducing students to the range of opportunities available to them. Visits often include introduction to role models or student groups with similar cultural or social identities, in order to demonstrate pathways for students who may otherwise feel they are not represented in higher education.

Campus visits also allow for interactions with faculty members and enable participants to gain familiarity with an institution’s physical environment, culture, resources, and processes – helping students learn to identify the unique features of different institutions and evaluate which tertiary environments best match their goals. It is widely believed that student departure from tertiary education can be attributed to lack of fit, among other things. For all of these reasons, campus visits can be a powerful tool for raising students’ motivation to pursue tertiary study.

**Program of Note**

- The Aimhigher Programme - which is funded by the Higher Education Funding Council for England and the Department for Business, Innovation and Skills - organizes campus visits in order to increase tertiary participation rates among underrepresented groups in England. Because such visits may be inaccessible to disadvantaged students who live in rural or remote areas, the program also developed a "roadshow"—an interactive, informational exhibit that is housed in a van so that information about colleges can travel to areas with low levels of tertiary participation.
In addition to organizing one-time campus visits, Aimhigher also organizes summer schools for secondary students that are hosted by local universities, granting more prolonged exposure to the tertiary environment. Between 2003 and 2008, over 40,000 students participated in this Widening Participation Summer Schools Programme. A 2006 survey of universities found that almost 80% considered the summer school program to be among the five most important activities for widening university participation (Aimhigher, n.d.).

**Personal and Planning Outreach**

For students from economic or educationally disadvantaged backgrounds, even a very strong aspiration to pursue tertiary education can become stymied by the many other obstacles -- academic, social, financial, and informational -- that stand between students and their postsecondary goals. Personal and planning outreach programs are intended to help students overcome those obstacles and realize their aspirations.

These programs are designed to help students identify specific, concrete steps toward realizing their educational and professional goals, as well as provide information, guidance, and other resources that scaffold progress. Such programs also reinforce student success. Personal and planning outreach programs provide students with support in a variety of ways: through mentoring, career development and counseling, and instrumental assistance. All of these approaches share the goal of helping students understand and enact the steps to successfully enroll in and transition to tertiary education.

**Mentoring**

Mentoring programs match students with role models who can relate to or validate students’ experiences and goals, provide individualized guidance to students about how to reach their goals, and supply a source of encouragement and constructive advice as students work to overcome obstacles. Mentoring programs are often specifically intended to introduce students to mentors who share their ethnic or cultural identity, inviting students to identify with role models who successfully overcame obstacles. In many cases, high-achieving university students from disadvantaged backgrounds are used as mentors to provide ongoing support and advice, while also reflecting the possibility for tertiary education.

Relationships between students and mentors are built through a series of one-on-one meetings, such as discussions over shared meals. Mentors might discuss with students how they chose, made progress toward, and finally realized their educational or career goals. They might also talk about people or resources that were most helpful to them as they worked toward achieving their goals. Through these discussions, students gain access to information about how they, too, can successfully transition into and complete their own tertiary studies.

Mentoring programs often target students in disadvantaged schools, with mentors visiting students in their schools. While sometimes used as a stand-alone outreach strategy, mentoring is often embedded as one component of more comprehensive programs that also include tutoring or career development. For example, the University of Leeds in England organizes the Looked-
After Child Mentoring Program to improve tertiary access and attainment for secondary students, Grades 10 and 11, who have been cared for by public authorities rather than by their families. Students in the program are paired with university student volunteers who provide both one-on-one mentoring support -- focused on building students’ aspirations to pursue tertiary education -- and tutoring, that develops students’ academic readiness for more advanced study (University of Leeds, 2007).

Program of Note

- Inkanyezi (which translates to “let us shine”) is a student-run program at the University of Cape Town, South Africa. Founded in 2005 and supported by funding from the Goldman Sachs Foundation’s Social Entrepreneurship Fund, Inkanyezi aims to improve access to tertiary education among disadvantaged high school students who live in the university’s community. University students serve as mentors and are placed at disadvantaged secondary schools in townships around Cape Town.

- Each week, mentors meet with the same small group of Grade 12 students to facilitate workshops and discussions. Mentors are provided with a handbook and training that outlines the program’s core curriculum, which includes information about opportunities in tertiary education, navigation of the application and financial aid process, and development of students’ skills so that they are better equipped to successfully transition to tertiary education and eventually into rewarding careers. (Inkanyezi, 2009).

Instrumental assistance

The process of applying to universities and identifying and securing sources of financial aid can be particularly daunting to students from disadvantaged backgrounds. Students from families or communities with low levels of participation in tertiary education are often without the benefit of guidance from community members who have successfully completed those processes. Outreach programs that provide instrumental assistance with applications and planning are designed to overcome this information gap by helping students navigate information about their tertiary options, submit complete applications on time, and identify and secure funding that can support them until they complete their degree. By providing these supports to students, instrumental assistance programs increase the pool of applicants from disadvantaged backgrounds and help low-income students navigate financial barriers to tertiary enrollment.

Some instrumental assistance programs provide information about application processes and funding sources through workshops, allowing a small staff to reach many students. Other programs are able to provide counselors who can support students one-on-one. Instrumental assistance is often one component embedded in programs with goals of helping students overcome multiple obstacles to tertiary enrollment.

Program of Note

- The Pathways Program at Ateneo de Manila University in the Philippines was founded in 2002 with support from the Ford Foundation’s Pathways to Higher Education initiative.
The program targets secondary students from low-income or ethnic minority backgrounds, aiming to increase these students’ chances of gaining access to tertiary education. In addition to other services -- including academic tutoring and career counseling -- the Pathways Program provides students with instrumental assistance to complete applications for admission and financial support.

- In addition to providing instrumental support to students at secondary schools, the program also created Schoogle, the first website in the Philippines to provide an information database about universities, application processes, and funding options. While not all students in the nation have access to the Internet, consolidating information about many opportunities and processes makes this information more accessible to a broader audience than the program could reach through outreach to schools alone (Silva, 2008).

**Career Development and Counseling**

For many students from disadvantaged backgrounds, the costs of tertiary education -- both in terms of tuition and other costs associated with study, as well as the opportunity cost of not going directly into full-time work -- can be a major obstacle. Outreach efforts that provide career development and counseling are designed to help students overcome this obstacle by helping them understand the professional opportunities and financial benefits accrued upon completion of tertiary education.

Career counseling involves helping students develop concrete short-term and longer-term career objectives, and appreciate the role of their past, current, and future experiences and education in shaping their future goals. It also helps students develop a sense of agency in choosing goals and understanding pathways toward reaching those goals. Career counseling helps students gain perspective on how their careers might unfold, beginning with their existing experience, building upon those experiences through their tertiary education, and then feeding into a career that involves multiple pathways to higher-level positions through on-the-job experience and professional development.

Career development includes a range of support services, including the development of skills that will help students succeed in professional settings, such as social etiquette, interview preparation, and résumé development. Other aspects of career development expand students’ perceptions of career choices, removing gender stereotypes, especially for women. To foster healthy career development, programs connect students with the local business community and provide students with networking opportunities to meet people through which they can learn about internships or other opportunities to gain work experience while they study. Outreach programs that build awareness about options in tertiary education also include visits to high schools to introduce school-aged children about the various occupational options available to them.
**Program of Note**

- In Haiti, the Haitian Education and Leadership Program (HELP), which offers financial scholarships to Haitian students who are in the top of their secondary school classes, is committed to reducing the gender inequity in Haitian higher education. To meet this goal, HELP visits all-girls schools across Haiti, where they talk with girls and persuade them to focus on their education and aspirations for a positive future. Part of their mission to is educate girls about gender stereotypes in specific math and science related careers. The fact that 45% of HELP scholarship students are young women, many of whom are studying in the math and science fields, is a testament to mission of this non-profit organization, now based in New York.

- Explore Your Horizons is a career education program designed to help address under-representation of low-income and other disadvantaged students in Canadian tertiary educational institutions. Explore Your Horizons is part of the Future to Discover program, which is funded by the Canada Millennium Scholarship Foundation, in partnership with the provincial governments of New Brunswick and Manitoba. Explore Your Horizons provides secondary school students with a series of after-school workshops that scaffold their development of career plans.

- Workshop activities include assessing students’ strengths and interests, advising students about careers that match their strengths and interests, and helping students identify steps along specific career paths. Students participate in these workshops in grades 10 through grade 12. During grade 11, students’ parents or other significant adults in their lives also participate in workshops.

- Parents and students are educated about the labor market and taught skills for career planning, as a way of building parental understanding and support for students’ goals. Participants also gain access to information about the costs and benefits of tertiary study through the program’s website and magazine. In a pilot study of Explore Your Horizons, over 1700 students were randomly assigned to participate in the program between 2004 and 2007. Outcomes of the study included an increase in the number of participants who planned to apply to college, and a reduction in the number of participants who viewed finances as a barrier to tertiary study (Canada Millennium Scholarship Foundation, 2007; Currie et al., 2007; Fowler et al., 2009).

**Structural and Policy Reform**

While the majority of the programmatic strategies discussed thus far are components of larger structural programs or policies, there are also practices and policies that have been instituted with an eye toward systemic reform or broader benefit. Embedding support strategies into institutional structures can create environments and cultures that provide multiple reinforcements to meet a range of needs. While these broader structure and policy efforts are not
as abundant, they play a role in widening successful participation in tertiary education. Categories of structural and policy reform include distance education, intercultural universities, school-university partnerships, national policies and multi-tiered programs.

_Distance education_

Distance education, defined as a formal education process in which the student and instructor are in different physical locations, is one way in which tertiary institutions are expanding educational outreach to students systematically. A practice made easier by advances in information and media technologies, distance education may involve video, audio, or computer-based communication (Parsad & Lewis, 2008).

Distance education is widely used in the U.S.; in a related study, two-thirds of U.S. tertiary institutions reported offering distance education courses. While distance education is increasingly popular in developing countries as well, barriers to distance education in these countries include: lack of resources required for development and maintenance of learning technology; lack of infrastructure to support modern technologies; and a lack of consistent funding needed to acquire, develop, and maintain software and equipment (Shrestha, 1997).

Indeed, studies of distance education initiatives in China and South Korea (Motlik, 2008), South Africa (Breetzke, 2007), and the Commonwealth Caribbean Nations (Thomas & Soares, 2009) have illustrated the ways in which such issues affect students’ access to and experiences in distance education courses. That said, distance education has been implemented with some success in developing regions. The creation of African Virtual University sites, for example, has made it possible to offer computer literacy training and advanced computer skills to students in Ghana (Ng’ethe, Assie-Lumumba, Subotzky, & Sutheland-Addy, 2003).

In addition to directly serving students, distance education has made a major contribution to teacher training in the developing world (UNESCO, 2002). In Eritrea, for example, a distance learning program was offered to middle school teachers wishing to upgrade their teaching certification (Ravinder, 2007). In Burkina Faso, as well, a course was developed to provide in-service professional development for school headmasters.

The course, which was focused on strengthening participants’ management capacity, reached about a quarter of Burkina Faso’s headmasters over four years (UNESCO, 2001). Brazil offers a daily television series, “A-Plus,” which uses a private educational television channel to stimulate interest in education, teaching and learning among teachers. With a regular viewing audience of 13 million, surveys reveal that while 60% of “A-Plus” viewers are teachers, programs are also viewed by parents, social workers, nurses, and childcare providers (UNESCO, 2001). Distance education has also facilitated delivery of teacher training to underserved populations in developed countries. In Australia, for example, Queensland’s Remote Area Teacher Education program provides teacher training to Indigenous students, preparing them to teach in geographically isolated schools (Centre for the Study of Higher Education, University of Melbourne, 2008).
Program of Note

- In India, Indira Gandhi National Open University (IGNOU) is a government-run distance learning system that has provided a gateway to tertiary education since its establishment in 1985 (India.gov.in, 2010). IGNOU offers more than 117 programs at various levels, and reaches out to students through an extensive support network that includes nearly 3000 study centers, 269 of which are for women and people with disabilities. Academic and personal support services are available at these study centers, or students can also access support services online (Sharma, 2001). Student support is also provided through a 24-hour television channel and a network of radio stations. Some of the challenges faced by IGNOU since its inception are illustrative of the problems faced by many other distance learning initiatives. Because most of IGNOU’s programs are offered through the Internet, which is still unavailable in some rural areas, IGNOU is not as accessible as it was intended to be for some groups of students (Sharma, 2001).

Intercultural universities

In many regions of the world, indigenous populations are underrepresented within tertiary education. Institutions are working to foster interculturalization in a variety of ways, including scholarships, academic support programs, and affirmative action initiatives. Another strategy for increasing the proportion of indigenous students in tertiary education is the establishment of intercultural universities in indigenous regions. As explained by Schmelkes (2009), intercultural universities are typically located in regions with high indigenous populations, and operate as bilingual or multilingual institutions. The goal of these universities is not only to increase indigenous enrollment in tertiary education, but also to educate intellectuals and professionals who are committed to regional development.

Intercultural universities have been the focus of much governmental and non-governmental support, particularly in Latin American countries. The German Federal Ministry for Economic Cooperation and Development, for example, recently collaborated with the Fondo para el Desarrollo de los Pueblos Indígenas de América Latina y el Caribe in Bolivia to establish a virtual university, Indigenous Intercultural University (IIU), specifically geared to the needs of indigenous groups in 11 participating countries. Countries involved in the project include: Bolivia, Brazil, Chile, Costa Rica, Ecuador, Guatemala, Colombia, Mexico, Nicaragua, Peru, and Spain. IIU’s programs are delivered using an online system and require part-time attendance in order to facilitate enrollment by students who would otherwise be unable to attend university classes because of their work, living, or income situations.

The programs, which are offered through 25 universities in Latin America and one in Spain, have succeeded in attracting significant numbers of students. In the first three years of the initiative, more than 2,000 individuals applied, representing 20 countries and 90 indigenous peoples. Furthermore, 356 students have enrolled in the various programs and 292 students have successfully completed their programs and gone on to work in indigenous and international
organizations, as well as government and academic institutions (Deutsche Gesellschaft für Technische Zusammenarbeit, 2010).

Indigenous-serving universities have also been established in several countries, including Australia, Norway, New Zealand, Ecuador, Peru, Bolivia, Mexico, and China. The Universidad Nacional Intercultural de la Amazonia, located in the Ucayali region of Peru, is one such institution. The university was established in 2000 and opened its doors to students in 2006. The institution’s 1000 students can choose from among four areas of specialization that are in demand within the region: bilingual early education, bilingual primary education, aquaculture and agroforestry engineering, and agroindustrial engineering (Universidad Nacional Intercultural de la Amazonia, 2010). Similarly, at Bolivia’s first three indigenous universities, which were established in 2008 and enroll 480 students from rural communities, the curricula are comprised of the ancestral knowledge of the Aymara, Quechua and Guarani peoples as well as 12 degree programs.

At the Aymara University, for example, degree programs include high plains agronomy, food and textile industry studies, veterinary medicine and animal husbandry. At the Quechua and Guarani universities, programs include forestry, fishery cultivation, and the study of hydrocarbons. Graduates of all three Bolivian universities are expected to apply their newly acquired knowledge in their home communities, with the aim of regional improvement (Universidad Indígena Internacional, 2010). China, as well, has established a system of 13 colleges and universities that are focused on providing access to tertiary education for members of its 56 designated ethnic minority groups. At Minzu University of China, for example, 70% of the institution’s 15,000 enrolled students are members of ethnic minority groups (Minzu University of China, 2010).

Program of Note

- In Mexico, the development of intercultural education at the tertiary level began in 2000 with Universidad Veracruzana Intercultura (UVI). As documented by Zuany (2009), the nation’s federal government proposed to build a network of intercultural universities in states with high indigenous populations. As of 2008, nine intercultural institutions had been established. One, the Universidad Veracruzana Intercultural (UVI), was established as part of a pre-existing public university. At four campuses in indigenous regions of the state of Veracruz, one bachelor’s degree program is offered, titled Intercultural Management for Development.

- The aim of the program is to train students to serve as “intercultural mediators.” Nearly 600 students were enrolled in the 2007-2008 academic year, studying five areas of specialization: health and medical pluralism; human and indigenous rights; languages and interlinguistic communication; heritage and communication; and sustainable development in intercultural regions. The program employs an intercultural model of education, drawing upon the knowledge of indigenous community members and consulting with community advisory councils. Students also take part in research and
extension projects that are designed to contribute to community and regional development (Universidad Veracruzana, 2010).

School-university partnerships

In many parts of the world, universities partner with businesses, communities, and in some places, primary and secondary school systems. Used broadly, the term partnerships can mean a formal or informal relationship between a particular school, a set of schools, a region and one institution, or a set of institutions. In our research we found several types of partnerships: multi-service partnerships, campus schools, and teacher training and development.

School-university partnerships as a means to foster tertiary planning and enrollment have gained momentum in the last few years. In fact, several of the specific outreach programs described in this report stem from larger, existing partnerships between educational systems and universities. Our review of programs and practices indicated that outreach programs often originate as part of an institution’s commitment to serve the nearby community and as such, an outreach program is one of many service projects offered by a university. This model presents university students with volunteer opportunities, supports national goals for widened access, while enabling the institutions to further their mission to provide a public good.

Program of Note

- The multiservice partnership in Canada known as the Westview Partnership began in 1992 as a cooperative project of the Toronto District School Board’s Westview family of schools and York University’s Faculty of Education. This partnership’s model targets schools or neighborhoods rather than relying on individual criteria to identify participation. The partnership offers a continuum of services that seek to interrupt barriers to enrollment and completion, totaling almost 30 programs under the partnership umbrella. Programming includes academic enrichment, tertiary awareness and planning, mentoring, dual enrollment opportunities, career development, and student teacher practicum placement. These programs are made possible by the partnership’s collaboration with multiple organizations that provide resources and volunteers. The Westview Partnership is primarily funded by Ontario’s Ministry of Training, Colleges and Universities, with additional donations from community members (Robinson, n.d.).

- A unique, and not so common, offshoot of school-university partnerships is the creation of campus schools, or primary or secondary schools developed by and managed by a university. These schools, often referred to as “laboratory schools” are especially common in areas where there is limited access to quality primary and secondary education for all students. In more developed regions, these schools often serve low-income or underrepresented students. Institutions of higher education, commonly through their department of education, establish a school with a mission to improve the quality of education afforded to a disadvantaged population.
In this model, the existence of a school on a college campus further opens opportunities for practicum placements, volunteer options and research projects. One benefit of these types of partnerships is the access to university facilities and resources. Campus schools have emerged in countries such as Germany, Thailand, Philippines and China, however, it is important to note that some campus schools maintain competitive entry and many not qualify as a strategy to widen access for underrepresented students.

**Program of Note**

- The Dunya School, founded in 1998, is located on the campus of Khazar University in Azerbaijan. The school enrolls students from the preschool level through high school with high school coursework that is geared toward preparation for the university exam. The school reaches disadvantaged students in three ways: partial scholarships to children from a particularly poor village; scholarships for bright students from poor families; and a scholarship provided to students who are orphans. Faculty from the Khazar School of Education provide professional development for teachers at the Dunya School (Khazar University, 2010).

- The most well documented and researched types of school-university partnerships are those used as a means to improve teacher development and training. This kind of partnership benefits teachers, teacher educators and students. In contrast to academic preparation outreach programs that direct services to students, these programs target educators instead, with the aim to increase school engagement and completion. However, in doing so, these programs simultaneously improve the academic preparation students receive.

- Global attention to teacher training and development is part of large-scale educational reform. In many parts of the world, data show that engaging and retaining students in their primary and secondary years is a continuing challenge and teacher-focused interventions hold the most promise to enhance learning. Because widening participation to tertiary education is immaterial in the absence of students who have completed secondary schooling, broad education reform is critical to preparation for tertiary education.

- Dropout prevention-type programs and postsecondary access programs share an interest in educational equity and many of the approaches are the same. Engaging students in their education, identifying new strategies for effective teaching, increasing motivation and academic behaviors, and providing caring adults with whom students can connect all serve the purpose of improving secondary and postsecondary outcomes.

- Teacher-training efforts support local learning communities and in many regions, are considered to be transformers of practice. Variation in these programs includes content focus and location of activities. Some programs are focused on improving specific content knowledge of teachers, while others are focused on teaching practice. Other teacher training and development programs prepare teachers to more effectively meet the needs of specific disadvantaged student populations. For example, New Zealand’s Ka
Hikitia program provides professional development aimed at helping secondary school teachers better engage Maori students in grades 9 and 10, when they are at increased risk of dropping out (Ministry of Education, New Zealand, 2009).

Program of Note

- STEM Brasil was designed to increase the number of girls, mixed-race and Afro-Brazilian students, and low-income students who pursue tertiary study and then careers in science, technology, engineering, and math (STEM). The program, which is funded by WorldFund, uses an interactive, project-based curriculum designed to stimulate secondary students’ interests in STEM fields. The curriculum was developed in collaboration with the Center for Occupational Research and Development, a non-profit organization focused on advancing math and science education. In order to deliver this curriculum effectively, teachers in schools targeted by STEM Brasil participate in a rigorous teacher-training program, which includes 480 hours of training over four semesters. In addition to advancing their skills to deliver the curriculum in an engaging and effective way, teachers also learn how to build stronger relationships with their students. STEM Brasil has rapidly expanded to cities and states across Brazil and, by 2015, the program hopes to operate in 1000 of the nation’s poorest secondary schools (WorldFund, 2009).

Multi-tiered Interventions

To this point, we have presented individual practices and policies to promote outreach, but many of these are a component of a multi-tiered intervention program. The primary benefits of large-scale programs and initiatives are the breadth of services, which often address multiple barriers. Additional benefits include large target populations, and the likelihood for cohesion and integrated support across efforts. Comprehensive interventions are generally those sponsored by ministries of education or broad-based organizations with an interest and commitment to education equity or workforce needs.

Multi-tiered interventions often originate from broad governmental or national mandates to improve access to postsecondary education. In the United States, for example, federal TRIO programs were started to redress the inequity in postsecondary access and enrollment among first-generation college-bound students. These programs, which include longstanding programs such as Upward Bound, Education Talent Search, Gaining Early Awareness and Readiness In Undergraduate Programs (GEAR UP), and the McNair Scholars Program, are broad in scope, service and students served.

In Canada, the Canada Millennium Scholarship Foundation – a private, independent organization endowed by Canada’s federal government -- provides students with the experience and opportunities (financial, academic and instrumental) they need to prepare for future educational endeavors. These governmental initiatives, unlike private organizations, use public funds and are therefore accountable to the public.
In many cases multi-tiered interventions are used to target the same issue on multiple levels, targeting students, teachers and families. In other cases, the scope of services provided includes advising, mentoring, tutoring and aspiration and awareness support.

The focus of the Upward Bound University-Wide Enrichment Project at the University of KwaZulu-Natal in South Africa, example, is on improving access through in-school assistance to disadvantaged high school students and provision of support for these students once they entered the university. At the high school level, project goals are approached in three different ways: marketing the university to high schools; preparing and recruiting high school students for college; and assisting high schools in the development of participatory pedagogy (Council on Higher Education, 2010).

Program of Note

- Future to Discover, a project funded by the Canada Millennium Scholarship Foundation, was designed to test the effectiveness of two interventions in improving access to tertiary education, with a focus on students from low-income families whose parents have little or no tertiary education experience. Future to Discover was comprised of two interventions, one of which targeted students in 51 New Brunswick and Manitoba high schools. This intervention, titled Explore Your Horizons, ran from 2004 to 2007 and included 40 hours of after-school workshops that provided participants with academic, career, and financial aid education. Project outcomes included an increase in the number of participants who planned to apply to college, and a reduction in the number of students who viewed finances as a barrier to college attendance (Fowler, Currie, et al., 2009).

- The interventions described above range from targeted interventions with a focus on a particular aspect of readiness for tertiary study, to broad, universal interventions that aim to provide comprehensive services and structural reform. With special attention to deficits in a student’s personal or academic experience, the programs and policies detailed in this report suggest that positive steps have been made in the area of outreach interventions, especially between secondary and tertiary education. However, very few programs were found in developing countries, which is not necessarily a reflection of the reality, but rather a reflection of available documentation.

Bridge Programs and Education

It is widely held that countries’ ability to widen successful participation in tertiary education rests heavily on the academic preparation and completion of secondary education. This is especially true in countries that lack compulsory primary education. Despite reform in educational systems, many countries continue to demonstrate low secondary school completion rates, high dropout rates among specific populations, and low participation and completion in tertiary education.

To address the gaps in academic preparation and varying skill levels, particularly among disadvantaged groups, many countries have used bridge programs that offer alternative pathways to and through tertiary education. National interest in bridge programs has been shaped by low rates of tertiary degree completion, which further contributes to the skills shortage and vacant
positions in fields of national importance. In addition, bridge programs are seen as an important mechanism to reduce the waste of public dollars spent on students who drop out or repeat courses in higher education.

Bridge programs, foundation programs and bridging education are terms used to describe programs and opportunities in post-compulsory education (tertiary, postsecondary, university) that respond to the low academic interest in and skills for university study in general, and in particular fields. Note that unlike outreach programs, which target students enrolled in primary and secondary education, bridge programs target students who have completed secondary education.

These intervention programs target academic and vocational preparation to provide alternative pathways towards successful participation in and completion of tertiary education. The structure of bridge programs varies across institutions. In some cases, bridge programs are embedded in the first of multiple years of university study, while others are entirely distinct, requiring completion before entrance to the university. Such bridge programs and related academic pathways have emerged worldwide, tackling the twofold challenge of widening access and participation, while also leveraging resources to ensure success in university study. In the following paragraphs we describe traditional bridge programs, conditional admissions programs, pre-entry summer programs, and discipline-specific foundation programs.

The most traditional form of bridge programs is that which focuses on preparing students who otherwise fail to meet the requirements for admission to university study. Broadly, bridge programs can be found in regions where the gaps in college readiness due to poor educational preparation preclude underrepresented students from gaining entry into tertiary study. Some of these programs originated in communities and regions to serve students who wish to pursue tertiary education at a range of institutions. In contrast, other programs exist in affiliation with a specific university.

These programs provide students with an opportunity to demonstrate college readiness during a period of academic preparation and skill building. Students often participate in developmental courses, may work to complete a secondary school diploma, participate in language development classes, or participate in test preparation programs that will help a student gain admission to a university. In addition, many bridge programs offer additional tertiary preparation support such as college visits or workshops to learn more information about the opportunities available in tertiary education. Such programs are offered by tertiary institutions but are not specifically linked to admissions at the same university.

Program of Note

- The Academic Bridge Program at Education City in Doha, Qatar, aims to provide top graduates of high schools in Qatar and the region with the academic and personal skills that they will need to succeed in English-language university programs. Presently in its ninth year, the program annually enrolls 200 students. The Foundation Year program is a nine month course of study that emphasizes: English, computer skills; TOEFL, SAT, and ACT test preparation; English language terminology for math-related coursework; and
scientific methods of inquiry combined with laboratory experiences. The program also allows students to experience coeducation and participate in extracurricular activities. These students are also permitted to enroll in a limited number of college courses at Education City universities while participating in the program (Qatar Foundation, 2010).

- Some bridge programs focus on developing students’ skills in specific disciplines in order to prepare to enter tertiary education and are termed foundation courses and programs. The purpose of these programs is to widen the pool of students prepared for university admission and positioned to fill positions in fields deemed critical for national development. For example, in most developing, as well as industrialized nations, there is an extreme focus on increasing student competencies in math and science-related fields.

- Tertiary education is seen as the means to populate the career fields in science, technology, engineering and mathematics (STEM). Thus, some foundation courses and programs aim to strengthen students’ math and science skills, with a goal of preparing students for entry into STEM degree programs. These programs often consist of pre-university work to prepare students for higher education and include courses related to math and the sciences. Programs may also provide students with career information to cultivate an interest in that specific discipline. The Pre Entry Science Programme (PESP) at the National University of Lesotho in South Africa is one such bridge program. The three-month PESP course is a prerequisite for students who have been admitted to programs including agriculture and health sciences. Other discipline-specific bridge programs are offered in fields that yield high attrition rates with explicit intentions to foster persistence and retention in higher education, such as medical education.

- In some parts of the world, bridge programs are known as foundation programs. This term reflects a similar approach as bridge programs, but is typically used to describe programs with a specific university affiliation. In these cases, foundation programs are offered to students in preparation for university entrance.

Programs of Note

- University of the North’s Science Foundation Year (UNIFY) in South Africa is a mathematics and science foundation year program at the University of the North, intended specifically for disadvantaged students from previously black-only educational systems. The program seeks to expand the pool of qualified students pursuing science degree programs by improving students’ cognitive and practical skills.

- This program targets students from low-income and rural areas who do not qualify for admission in science degree programs on account of low skills or failure to meet admissions requirements. Students spend one year in this program following a required curriculum that covers biology, chemistry, English, study skills mathematics and physics. This program has inspired at least three others other similar programs at South African universities. (Mabila, Malatje, Addo-Bediako, Kazeni & Mathabatha, 2006)
- The University of Namibia’s Pathways Program targets secondary school students from the marginalized Owambo ethnic group, who are concentrated in a remote and very poor region of northern Namibia. These students face multiple obstacles to tertiary education, including attending under-resourced schools and gaining limited exposure to English, Namibia’s academic language. The program, which is funded by the Ford Foundation’s Pathways to Higher Education initiative, provides students with a “foundation year” during which they build skills to prepare for tertiary study, with a particular focus on gaining access to science and engineering courses.

- While the foundation year includes intensive academic support in math and science, students also build skills in written and spoken English and learn to use previously unfamiliar technologies, including computers and laboratory equipment. Between 2005 and 2008, over 250 students participated in the Pathways Program, which reported that “the great majority” of participants progressed to university study after the foundation year. Several even moved on to further study of medicine and engineering at institutions in South Africa. Based on its success at preparing disadvantaged students for tertiary study, the foundation year has been used as model for replication nation-wide (MacGregor, 2008).

- In South Africa, some institutions have shifted from foundation programs to “extended curriculum programs” and exist within respective majors or departments. These models target disadvantaged populations who lack adequate academic preparation, but otherwise demonstrate motivation and intellectual capabilities. According to the Cape Peninsula University of Technology, the shift from calling these programs, “foundation programs” to “extended curriculum programs” was based on the fact that these are not distinctly different programs and do not require separate admissions, but rather constitute an extension of an existing academic program.

- There are two major benefits to these programs. First, the courses or modules offered are credit bearing, which prevents such a program from lengthening a students time in university study. Second, these programs embed social support and academic support into the first, and sometimes second, year of study to ensure students are prepared to enter the mainstream courses in later years.

- Another category of bridge programs are those that offer conditional admissions to a university. Institutions use conditional admissions policies to bridge the gap between students’ lack of preparation and students aspirations to enroll in a degree program. These programs broadly target students who do not yet meet the requirements for entrance to university, fail to meet standards on entrance examinations, or have been out of school for many years. Through these programs, students deemed to show academic potential are “conditionally” admitted to a university while they complete developmental education requirements.
Once students have successfully completed these requirements, they are then fully admitted to the institution. For example, at Sacred Heart Junior College in Belize, students not immediately meeting entry requirements in English and mathematics are enrolled in a developmental program consisting of college preparatory instruction in these two disciplines. In these models enrollment in courses within their major depends on their placement status. The conditional status of the admission lifted when they test out of the Developmental Program.

Similarly, the Academic Bridge Program at Zayed University (ZU) in the United Arab Emirates is designed to help Emirati students become fluent in English and develop the academic skills needed to succeed in university coursework. The program consists of six levels of instruction, each of which lasts approximately nine weeks. Thus, depending on a students’ level of English proficiency, they may spend between nine weeks and two years in the bridge program prior to being fully admitted to university degree programs. The disadvantages of these types of programs include the costs charged to the institution and those a student inherits as conditional admissions programs delay time to degree completion.

Program of Note

Asian University for Women, located in Bangladesh, launched its Access Academy program in 2009, graduating a class of 129 in July 2010 (Asian University for Women, 2010). The aim of the program is to prepare students from underprivileged communities for tertiary education. In order to qualify for admission to the program, students must: be females between the ages of 17 and 25; have completed a total of 12 years of primary and secondary education; and have secured marks of above 60% or equivalent grades on secondary school certificate or examination. Applicants must also "demonstrate leadership potential, commitment, and the ability to work for positive social change" (Access Academy Admissions FAQ, 2010).

The program’s curriculum focuses on English language studies, mathematics and quantitative reasoning, and computer skills training. Seventy-five percent of students admitted into the program were provided with full scholarships. Once these students are admitted into the undergraduate program of the university, they will continue to be supported financially as long as they meet academic performance standards.

Pre-entry summer programs help to ease the transition between secondary and tertiary education. At some institutions these are part of a conditional admissions program, while others target groups of disadvantaged students who would benefit from support services prior to their first semester. Students who are accepted to the institution and are a member of a target population are invited to participate, often free of charge. This type of bridge program is an induction-type program as it seeks to equip incoming students with skills and knowledge to ensure a smooth transition to tertiary education.

Furthermore, pre-entry programs help to ensure that students follow their postsecondary intentions upon completion of secondary schools by directly moving into tertiary
education without a break. Pre-entry programs accomplish this by familiarizing students with their new academic environment and community and ensuring realistic expectations of workload and standards. These summer induction experiences often include general campus orientation, study skills workshops, peer community building, and in some cases, modules for preparation in a specific discipline.

- Often students take one or two courses in order to get a “jump start” on their academic career. Sometimes, students do not accept the offer to participate due to the need to work during the summer, the desire to stay near family and friends, or they feel that they do not need this program in order to be successful.

Program of Note

- At the University of Virginia, the Rainey Scholars program invites low-income students who have been accepted to the institution to participate in a 9-week summer program to become acclimated to the institution. Students live in residence halls on campus, eat in the dining halls, and take two college courses in order to start to gain academic credit at the institution. Students also are connected with a peer mentor and participate in workshops on study skills, technology, and other relevant topics throughout the summer. Students are also introduced to faculty and staff members who help the students to build a strong network at the University (University of Virginia, 2010).

- Based on our scan of global bridge programs, many institutions offer alternative pathways to admissions and degree completion, thereby providing “bridges” between secondary and tertiary education. These opportunities are especially critical for students whose educational background puts them at a disadvantage in terms of admissions or readiness for university study. The bridge programs described in this report intentionally offer alternative pathways to admission, while also reducing the risk of student attrition through skill development and preventative support. Dependent upon their scope and length, these programs may be costly to a university; however, to the extent that they reduce attrition, the returns can be rich.

Lessons Learned and Recommendations

Our research on outreach and bridge policies and programs suggests that in many countries, unequal educational systems are seen as key determinants in tertiary enrollment rates. This reality creates an interest in not just programmatic interventions, but also more comprehensive policies that target academic readiness for tertiary study.

Policies that insist “education for all,” or “access for all” exist in many parts of the world, signaling the importance of opening the doors to higher education for those from marginalized communities. The establishment of national equity policies provides the impetus for the institutional practices and policies described in this report. This report did not provide an overview of specific national policies; however, it was evident that institutional and organizational commitments are behind these efforts.
In addition to the role that policy plays in shaping outreach interventions, policies also directly support some interventions through funding and/or accountability measures, such as the Future to Discover program in Canada receives federal support for its initiatives, much like Federal TRIO Programs in the United States.

This paper provides a map of the practices and programs used to support pathways between secondary and tertiary education. As the findings from this paper suggest, interventions reflect modest steps to support students’ transitions as they pass through the educational pipeline available to them. The majority of these outreach and bridge interventions seek to reduce the academic, aspirational, informational, and personal barriers that restrict access among students currently underrepresented in tertiary education.

While there are global efforts to promote successful participation in higher education, there are inconsistencies and gaps in both the existence and documentation of programs and policies, making it difficult to discern whether initiatives are truly having an impact on young people from disadvantaged backgrounds. The following recommendations for improved policy and practice are based on our review of policies and practices currently operating around the world. These recommendations seek to promote the existing innovation and expand upon current efforts to foster the most important kind of access – access to degree completion.

Policy Suggestions

Examples of policy interventions were described throughout this paper, however, outreach and bridge efforts are largely driven by institutional practice and programming. While it can certainly be argued that institutional and national policies prompted these interventions, few warranted inclusion in this report. As such, we offer the following recommendations for policy-level change to increase, and in some cases, expand the value added through outreach and bridge programs.

- **Create linked programs.** The importance of linking interventions to funding is evident in multi-tiered programs where scholarships and bursaries act as incentives and rewards for successful participation in comprehensive programming. By doing so, students are more likely to receive support for the multiple barriers they face when pursuing tertiary education, rather than creating dichotomies between their academic, social and financial needs.

- **Balance systemic changes with services directed at students.** With the exception of teacher training, the majority of programs presented in this report reflect services directly provided to students. Policymakers should consider establishing goals for systemic growth and improvement that alters the structural contexts in which students learn about and plan for tertiary education. Structural or systemic reform might include building school cultures that value and support tertiary education planning, setting high expectations for participation in tertiary education and offering curriculum that supports student’s postsecondary and career development. These strategies, which typically act as universal interventions are especially important in that they motivate students who may
have prematurely foreclosed on tertiary study and thus, will not qualify for other targeted programs.

- **Establish early intervention programs and policies.** Ensuring that students possess adequate skills and aspirations to successfully enroll in tertiary education must start early. The programs and policies reviewed for this report were primarily focused on students in upper grades, with some attention to primary grades. Children’s career and educational aspirations are formed in early grades and negative experiences and messages about their chances for entry into tertiary education may diminish their motivation and interest before many of these programs reach them. This is especially important in developing countries where enrollment in primary education is low.

- **Build collaborative partnerships.** Programs and institutions may be able to more effectively serve students over time when they partner with other organizations, such as universities, government agencies, non-profit organizations, or corporate partners. Some benefits to programs may include: financial and operational support, increased institutional capacity through professional development and knowledge-sharing, and dissemination of best practices through publication and outreach. Partner organizations also benefit by gaining access to local expertise about student needs, finding opportunities for research about program effectiveness, and developing a more positive reputation.

- **Consider policies to strengthen partnerships between primary/secondary and tertiary education systems.** Several of the programs presented in this report are guided by existing school-university partnerships that allow for multi-level interventions and support. These partnerships are ideal context for this work for a few reasons. First, many outreach programs rely on institutional faculty and staff, especially in departments and schools of education. These human resources are extremely beneficial to the primary and secondary institutions with whom they partner. Second, many interventions staff their programs with university students, who volunteer their time as tutors, mentors, as counselors in community centers and advisors to support tertiary preparation and planning in secondary schools. Finally, the presence of a university partner in a school community shapes the aspirations of students, expectations of teachers and the possibilities for creating a broader community of learners. For these reasons, partnerships hold great promise for improving secondary school completion rates and access to higher education.

- **Increase policy attention to the importance of engaging families in interventions.** It is widely held that parents and extended family members play a key role in tertiary education aspirations, planning, transition and participation. Family support, both monetary and emotional, plays an important role in students’ aspiration formation, as well as their academic preparation for tertiary education. In some cases, programs described parent evenings or workshops; however, these were few in number and limited in scope. This is an area that warrants additional attention, especially among communities highly saturated with first generation college-attenders and cultures where access for women has been limited due to cultural beliefs about women. Educating families of
these two equity groups about the importance of further education is vital to national
goals and values.

**Suggestions for Improved Practice**

This review of practices and programs was not exhaustive; rather it provided a map of the
types of non-monetary intervention efforts that exist globally. Based on our review, we offer the
following recommendations for improved practice:

- **Enhance the capacity of school-based staff with responsibility for tertiary education planning.** The outreach and bridge programs reviewed for this report largely engaged university staff and student volunteers, with other outreach programs targeting teachers. Little to no evidence described efforts to collaborate with, support, train or enhance the efficacy of school-based guidance counselors in secondary schools. Although the presence and use of school-based guidance counselors varies widely by region, these staff are often well positioned to address the academic and social/personal barriers that preclude students from aspiring to and planning for university. Sole reliance on universities for this work is costly and misses an opportunity to create systemic change.

- **Expand opportunities for dual or concurrent enrollment.** Our research found very few programs dedicated to providing experience, exposure and academic enrichment and credit-carrying opportunities. This strategy offers multiple benefits, exposure to university study, experience, motivation to pursue tertiary study, reduced time to degree completion and improve academic skills. Alternatives to dual enrollment include International Baccalaureate (IB) curricula or other advanced academic skill preparation. In addition to easing the transition between secondary and higher education, dual enrollment opportunities can be used to motivate otherwise disengaged youth.

- **Include academic and social supports in programming.** Many programs target one, sometimes two areas for development with little attention to related challenges. For example, bridging education and transition courses offer instructional support for academic skills, but rarely address the related social, personal or cultural adjustments students make in tertiary education. Institutions that offer bridge opportunities programs should be held accountable for addressing the range of barriers that prohibit otherwise, academically unprepared students to succeed in tertiary education.

- **Establish a clearinghouse of programs and related best practices.** This paper was limited to secondary data and especially to programs in developed countries due to the limited documentation of programs, policies and practices operating globally. Such a clearinghouse would serve those countries and small institutions without the means to conduct feasibility studies, while also providing access to best practices and ideas for program planning.

- **Continued attention to dropout prevention.** Outreach programs must continue see their efforts as part of broader educational pipeline support and integrate school completion strategies. Too often the ambitions of young people are misaligned with their
academic behaviors, thus resulting in lack academic preparation and career commitment. Strong partnerships between secondary and tertiary education systems that build intentional strategies to both improve secondary completion rates, as well as enrollment in tertiary education are needed. University programs should continue to provide specific services to schools that serve high-need populations.

- **Prioritize coordination and cohesion across programs.** To ensure efficacy and capitalize on limited resources, institutional programs should work towards coordination and cohesion. In some cases, programs should be managed in conjunction with one another to avoid serving the same students, share existing resources and training support, and foster integration among the support strategies. For example, providing transportation to university-sponsored events is critical, especially for students living in rural areas. Coordination of transportation across multiple programs, or even institutions, would allow for cost sharing and perhaps expanded participation.

**Future Research**

The means of expanding opportunities in tertiary education includes a range of outreach and bridge programs. The large majority of these programs and policies are focused on extending equitable access to those least represented in tertiary education. In spite of the global efforts among the educational, government and private sectors, our research uncovered a few gaps and areas for development. First, with very little documentation from small, less developed countries, it is difficult to surmise the scope of practices and policies worldwide. Additional research on the existence of outreach and bridge programs in developing countries will require a targeted data collection. Our research relied primarily on secondary data and that which was available in English, with some exception, which certainly limited inclusion of research from many parts of the world.

Our review of the global practices and policies presented in this meta-analysis revealed one clear point - more research on the effectiveness of these programs is sorely needed. Very few of the described programs have been evaluated, and some have not been documented beyond a website or program flyer. Much of the existing documentation is in the form of reports related to interventions; however, evidence-based research documenting the efficacy or economic benefits of these interventions was scarce. Furthermore, available information and documentation fails to represent efforts in developing countries. This imbalance of information emphasizes the need to undertake additional primary data collection that focuses on specific regions and disadvantaged populations. To remedy these gaps in the research, and subsequently ensure replication and scalability of evidence-based practice and policies, we recommend a few areas for future research. These are not meant to be exhaustive; however, based on our review of the practices and policies, the following areas warrant careful consideration:

- Which barriers are most predictive of university enrollment for which populations?
- What is the impact of bridging education? Which type of bridging education is most effective and for which populations?
- Are different forms of support more effective in different contexts (institutions of higher education, secondary schools, primary schools or community settings)?
• Are certain types of institutions (public or private) better positioned to partner with secondary education?
• What is the feasibility of K-16 councils in a variety of educational and regional contexts?
• What are the long term outcomes associated with outreach programs? Degree completion? Employment?
• To whom do young people rely for information about career and postsecondary options? Teachers? Counselors? Family members? Peers?
Conclusion

Calls for social justice and equity are clear: it is imperative that educational sectors around the globe transform their institutions and their efforts to ensure that students graduate from secondary school with the academic and social skills necessary for successful participation in higher education. Failure to do so compromises the economic and social futures of any given country. This demand for greater access to high quality higher education is behind the outgrowth of outreach and bridge programs. By raising awareness, providing information and support for postsecondary planning and improving academic readiness for tertiary study, outreach and bridge programs are critical to calls for increased equity.

Our review of the practices and policies used across the world to increase educational equity for the purpose of social justice reflect more than a symbol of the potential in this domain. There is little doubt about the use and viability of outreach efforts and bridge programs to widen successful participation in tertiary education. In particular, partnerships between secondary and tertiary education hold a great deal of promise in widening participation through outreach programs, especially when they extend beyond traditional teacher preparation partnerships. Yet despite these steps, gaps remain, suggesting that the scope of these interventions remains limited in content, population and scale. The next step is to build upon this foundation, expanding upon existing innovation and documenting and disseminating information about effective practice around the world.
References


