

Yaoundé, Cameroon, which increased its female enrollment in 2015-2016 to about 38 percent compared to 27 percent the previous year.

Other African universities have posted similar improvements in their enrollment of women. Though these statistics are a useful tool to monitor the access of women to university, they do not show the programs in which women enrol, in particular engineering. This is equally relevant for South African universities, which have achieved an average of 53 percent female enrollment. It appears that most African universities have focused more on gender parity, to the neglect of gender equity, which looks at gender access and distribution per academic programs, particularly engineering.

SOCIAL JUSTICE STRATEGIES: WHAT CAN BE DONE?

Some African universities have implemented four strategies of affirmative action to boost women's enrollments in their engineering programs:

- *Admission quotas:* a percentage of study places in engineering programs are specifically allocated to women. A common variation of this strategy is to offer admission to prospective female students almost meeting entrance requirements. While empirical evidence from the University of Ghana and the University of Dar es Salaam, Tanzania, supports the viability of this strategy, it has been criticized for lowering academic standards and giving preferential treatment to female candidates. Regrettably, in most cases, female students admitted under this policy strategy are not provided the academic support they need to succeed in their chosen engineering programs.
- *Priority consideration:* qualified female candidates are given priority over their male counterparts. It is a simple strategy to implement, since it does not require any elaborate planning. Many African universities, notably the University of Mines and Technology, Ghana, and others, have implemented this policy strategy with tremendous success. But the problem is that it does not concern itself with how female candidates originally attained the necessary qualifications for admission.
- *Academic upgrading:* a variant of this policy is that female candidates with credits close to the required admission standards are offered admission based on their willingness to participate in, and pass, an academic upgrading program. Despite its merits, it focuses exclusively on knowledge acquisition and skills development, not on confidence building.
- *Conditional admission:* female candidates who have achieved what are considered reasonable marks are offered admission contingent upon their ability to attain

specified marks in their first year courses. For example, female candidates who have achieved 75 percent in their mathematics grade may be offered admission into engineering programs on the requirement that they obtain 70 percent or better in their first year mathematics courses. This strategy tends to exert too much pressure on female candidates to satisfy the condition.

A WAY FORWARD

Affirmative action strategies of quota admission, priority consideration, academic upgrading, and conditional admission are all important for addressing the underrepresentation of women in engineering programs in African universities. However, they do not make any dent in the fundamental causes of gender disparity in engineering enrollment. Two major factors, namely girls' enrollment in upper secondary school, and the difficulties of girls studying science and mathematics at that level, must be addressed. African universities should not stand aloof while gender disparity worsens. They should engage in strong advocacy for girls' education and let their voices be heard as development partners.

Upper secondary school is the major source of students to undergraduate engineering programs. Only a few girls do well in courses that enable them to apply to these programs, owing to unsupportive classroom environment; teachers' use of referents outside of girls' daily experiences; a strong preference for boy students; and a patriarchal image of science and mathematics in society.

African universities could influence the number of secondary school girls opting for engineering programs by designing and teaching science, mathematics, and technology programs specifically for girls as part of their community outreach programs. Such interventions aim at helping girls to develop interests, skills, and confidence in those areas. ■

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Mongolia: Higher Education and Mobility

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The number of Mongolian students abroad has increased tremendously since the country's transition from a Soviet-aligned communist state to a market econo-

my. Persistent challenges in the domestic higher education system have partially fueled outbound student mobility. While higher education enrollment levels in Mongolia have been impressive in recent years, the quality of higher education still lacks, despite near continual reform attempts. Issues of equitable access, particularly for poor and rural students, still persist. Most of these problems stem from chronic government underfunding. Consequently, Mongolia has relied heavily on international donor organizations to address these continued challenges through funding and technical assistance.

Student mobility can benefit Mongolia if effectively managed. Returned students and scholars can bring their skills and experience acquired abroad and help to internationalize the institutions to which they return. In many ways, Mongolia provides insights into the challenges and opportunities of less populated nations managing student mobility to their benefit.

HIGHER EDUCATION IN MONGOLIA

Mongolia's education indicators are on par with its developed neighbors, and since the transition, higher education in particular has expanded dramatically. In 2015, there were 162,626 students enrolled in Mongolian institutions, with a gross enrollment rate (GER) of 68 percent. In the early 1990s, the GER was only about 14 percent. The majority were female, reflecting an established reverse gender gap in the country.

There has been similar robust growth in institutions. Public institutions remain preeminent and have recently consolidated from 42 institutions to 16. Private institutions have grown exponentially in number, numbering 78 in 2015, but most have low enrollments.

TRENDS IN OUTBOUND STUDENT MOBILITY

During the Cold War period, the vast majority of Mongolians who studied abroad did so in the Soviet Union or Soviet-aligned countries. The top countries of study in 2014 were more diverse: China, South Korea, the United States, Russia, and Japan. Over 15,000 Mongolians are now abroad for study. While small compared with major sending countries, this number is quite high for a nation of only about 3 million people.

Only some upper-class families, primarily in the capital, Ulaanbaatar, likely can fully fund such an education, particularly in high-income countries. The Mongolian government sends a small number of students annually on full scholarships, and a larger number with loans. Additionally, a fair number of students go to specific countries, notably China and Russia, largely or fully funded through bilateral scholarship schemes. A relatively small number of Mongolians are able to earn scholarships provided by Mongolian

NGOs and corporations and by foreign governments and hosting institutions.

BRAIN DRAIN AND CIRCULATION

One major challenge is the strong possibility of brain drain. To begin with, little is known about the number of Mongolian students and scholars remaining abroad. The last known government estimate, from 2010, stated that over 107,000 Mongolians lived abroad. Student migration, in particular, has opened up wider migration to others, with families often joining. Around 2011, Mongolia's economy boomed, with one of the fastest growth rates in the world, centered on the rapidly emerging mining sector. This fantastic growth was believed to have lured back many expatriates. Recently, however, Mongolia's economy has stagnated. This has likely prevented some Mongolians abroad from returning home, and incentivized many to emigrate.

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Beyond understanding the scope of the problem, Mongolia should explore options for countering brain drain. Some options involve incentivizing students to return once graduated. Government funding for the sector is crucial for preventing loss of talented students and academics. Larger research and development budgets can incentivize doctoral students and scholars to return. Incentives beyond higher salaries, such as providing returned students with employment services, may help, as has been done with some success in countries like China. Where students and scholars do not return, Mongolian higher education can still find ways to benefit from these expatriates through "brain circulation," or research collaboration and knowledge-sharing.

ACCESS FOR RURAL STUDENTS

Access to international opportunities for rural, disadvantaged students is also a concern. The vast majority of higher education institutions are located in Ulaanbaatar, and most of the nation's financial and social resources are concentrated there as well. Mongolia has also long experienced high rural to urban migration, as many individuals and families migrate from the rural countryside to Ulaanbaatar and a few other urban centers. Nearly half of Mongolia's population now resides in the capital.

It is unclear how many rural students are able to access international study opportunities, but the barriers for such students are fairly clear. Most rural students who study in rural secondary schools or colleges and universities often lack the same access to information as students in Ulaanbaatar, where most advising centers are located. These students usually lack family and friends who have gone abroad, particularly for educational purposes. English language penetration, as well as that of other foreign languages, is significantly lower in the countryside than in the capital and other major cities, even though English is now a required subject in the curriculum at all levels. The ability to pay for an international education is an issue as well.

SCHOLARSHIPS

One area in which the government and subsector can address many of these challenges is through scholarships. Currently, the government awards a small number of scholarships for foreign study at the undergraduate and graduate levels to students admitted to a top 100 institution listed in the *Times Higher Education* rankings. Relatively few students benefit from such a program, and most are likely from Ulaanbaatar or a few other major cities.

The Mongolian government may be able to send more students abroad by opening up more short-term opportunities. Similar to Brazil's Science Without Borders program, the government could fund students for one year of academic study, plus any necessary intensive language training and an internship. Graduate and postgraduate level programs could utilize existing partnerships that Mongolian institutions have with foreign universities.

Such a program can open up more access to study abroad opportunities, including to qualified students at rural institutions. By partnering with organizations in host countries that can help place students, students can go to a wider variety of institutions other than the most selective. Perhaps most importantly, by tying the study abroad opportunity to a domestic degree program, Mongolia can retain more internationally educated students.

MOVING FORWARD

There is clearly a need for more data collection and research on student mobility and the wider social and educational contexts in which such mobility takes place in Mongolia. Such information will help Mongolia better manage student mobility for the benefit of the higher education system and the country more broadly. Informed policy-making in this arena is important for Mongolia, to gain the most from its internationally educated citizens. ■

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What Does Data Tell Us about Cross-border Online Learning?

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Distance learning, MOOCs, and blended and online delivery modes offer new ways to access education across borders without being physically present in the classroom, and have been heralded as potential game changers in transnational education (TNE). Given the attention it receives, what does data indicate about the size and scale of the market, particularly in countries that are host to, and source of, many international students? What evidence exists that students are increasingly turning to cross-border online education?

DATA FROM TOP HOST COUNTRIES

In the United States, host of the largest number of international students, the majority of universities offer at least some learning online: data from the WCET Distance Education Enrollment Report utilizing IPEDS data from fall 2014 shows that one in seven higher education students (14 percent) took all of their courses exclusively at a distance. More than one in four students (28 percent) enrolled in at least one of their courses at a distance.

Moreover, between fall 2012 and fall 2014—since federal data has been gathered—enrollments in exclusively distance education programs by students based outside the United States grew by 8.6 percent, drawing an increase of over 35,000 students in this time period. This outpaced domestic student online enrollments, which increased 7 percent by approximately 185,000 students during that time. Concurrently, total enrollments in higher education decreased 2 percent.

The growth in online enrollments, contrasted with the decrease in higher education enrollments, demonstrates that online education is becoming a more popular choice for students, though international students compose a very small portion of the total distance enrollments. Of 2,858,792 exclusively distance enrollments in 2014, only 1.3 percent (37,788 students) were based outside the United States. The rest were either domestic students (2,730,769) or enrolled from an unspecified location (90,235).

Cross-border online education is further understood in the context of the international student market in the United States. International student enrollments in the United