

SEX-DISAGGREGATED DATA: A BRIEF ANALYSIS OF KEY EDUCATION AND SCIENCE INDICATORS SINCE THE BEIJING DECLARATION AND PLATFORM FOR ACTION (1995)

Introduction

To coincide with the 15th anniversary of the Beijing Declaration and Platform for Action, the UNESCO Institute for Statistics (UIS) conducted an analysis of sex disaggregated education and science indicators to provide insight on the overall progress for achieving equality for women and girls. The UIS collects sex-disaggregated data from pre-primary to tertiary levels of education related to access, participation, progression, completion, student mobility and fields of education. The full UIS database can be accessed at: <http://stats.uis.unesco.org>.

While the UIS collects data on several indicators disaggregated by sex, this information sheet presents a broad picture of international progress in terms of gender targets for school participation, adult literacy and women in science as a contribution to UNESCO's online discussion on Strategic Objective B, "Education and Training of Women", that was held from 10 January to 7 February 2010 as part of the Beijing+15 Review process. Regional averages are compared as the main method of analysis; however, country-level data are also used to shed light within regions. A more in-depth analysis of sex-disaggregated indicators will be presented in the upcoming 2010 edition of the UIS *Global Education Digest (GED)*.

Primary education

As shown in **Table 1**, gross enrolment ratios (GERs) have increased from 1995 onwards in the Arab States, Central Asia, South and West Asia, and sub-Saharan Africa, demonstrating progress in school participation at the primary level. Moreover, the gender parity index (GPI) has also increased over the three reference years (i.e. the higher enrolment rates are increasingly made up of females). Despite this increase, however, GPI figures show that much gender disparity still exists in these regions.

The largest reduction in gender disparity between the years 1995 and 2007 occurred in South and West Asia (GPI increased from 0.8 to 0.96). This was largely driven by changes in India, which is approaching gender parity in terms of enrolment (0.97 in 2007 – up from 0.81 in 1995), and Pakistan where the GPI increased from 0.56 in 1995 to 0.82 in 2007. In Pakistan, gender disparity favouring boys continues to be significant at the primary education level.

More than half of countries in sub-Saharan Africa with reported data in 2007 (23/37) show gender disparities favouring boys (i.e. GPIs under 0.97). In fact, several countries have a GPI below 0.85 (i.e. there are 85 girls for every 100 boys enrolled), including Burkina Faso, Central African Republic, Chad, Côte d'Ivoire, Eritrea, Mali, Niger and Somalia. In contrast, many countries in southern Africa have maintained gender parity at the primary level for sometime, including Botswana, Namibia and South Africa. In Lesotho, gender disparity once favoured girls but has since moved to a position near gender parity.

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February 2010

Table 1. GER and GPI¹ at the primary level of education

| Region | PRIMARY GER (MALES) % | | | PRIMARY GER (FEMALES) % | | | GPI, PRIMARY GER | | |
|----------------------------------|--------------------------|-------|-------|----------------------------|-------|-------|------------------|------|------|
| | 1995 | 2000 | 2007 | 1995 | 2000 | 2007 | 1995 | 2000 | 2007 |
| Arab States | 95.5 | 94.3 | 99.6 | 79.2 | 83.5 | 90.8 | 0.83 | 0.89 | 0.91 |
| Central and Eastern Europe | 106.8 | 104.0 | 99.2 | 104.1 | 100.0 | 97.0 | 0.97 | 0.96 | 0.98 |
| Central Asia | 85.2 | 99.0 | 100.6 | 85.8 | 98.1 | 98.7 | 1.01 | 0.99 | 0.98 |
| East Asia and the Pacific | m | m | 111.2 | m | m | 112.0 | m | m | 1.01 |
| Latin America and the Caribbean | 141.7 | 122.6 | 118.9 | 140.7 | 119.0 | 115.0 | 0.99 | 0.97 | 0.97 |
| North America and Western Europe | 104.3 | 102.6 | 101.6 | 103.3 | 101.5 | 101.3 | 0.99 | 0.99 | 0.99 |
| South and West Asia | 101.6 | 98.5 | 110.4 | 80.7 | 83.0 | 106.1 | 0.8 | 0.84 | 0.96 |
| Sub-Saharan Africa | 81.7 | 88.7 | 103.0 | 68.3 | 75.3 | 93.3 | 0.84 | 0.85 | 0.91 |

Note: m = missing value

Source: UNESCO Institute for Statistics database, 2010

Between 1995 and 2007, progress towards gender parity has occurred in most countries where gender disparity traditionally existed. Countries that have moved from a position of gender disparity (e.g. favouring boys) to parity (i.e. GPI ranging from 0.95 to 1.05) include Gambia, Ghana, Malawi, Uganda and Zambia. One exception is Cameroon, where the GPI decreased from 0.90 to 0.85 between 1995 and 2000 and has since remained there, suggesting that girls have become even more excluded from primary education since the 1995 Beijing Declaration and Platform for Action.

Within the region of the Arab States, Djibouti and Sudan continue to have substantial gender disparity where far fewer girls are enrolled than boys. Since 1995, other countries in the region have moved from a position of disparity in favour of boys to achieving or almost achieving gender parity by 2007, including Egypt, Mauritania, Syrian Arab Republic and Tunisia.

In East Asia and the Pacific, regional figures are not available as many countries did not report data in 1995 and 2000. However, for those that did, gender parity is close to being achieved as the GPI ranges from 0.95 to 1.0 for all countries with data. The exception to this pattern is Lao PDR where the GPI in 2007 was 0.90.

Gender parity has generally been achieved in Central and Eastern Europe, Central Asia, Latin America and the Caribbean, and North America and Western Europe. It should be noted, however, that some countries in these regions still experience varying levels of gender disparity in school enrolment. Disparity favouring boys exists in Guatemala, Tajikistan, Turkey, and Saint Vincent and the Grenadines. During the period spanning 1995 to 2007, gender parity was achieved in Grenada.

¹ GER measures total enrolment at a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year. As such, the GER includes over- and under-aged pupils. The purpose of the GER is to show the general level of participation in a given level of education. Additionally, it indicates the capacity of the education system to enrol students of a particular age group. The GPI measures progress towards gender parity in education participation and/or learning opportunities available for girls in relation to those available to boys.

Secondary education

In regions where gender disparity does not exist at the primary level, the situation is generally the same at the secondary level, as illustrated in **Table 2**. In Central and Eastern Europe, Central Asia, Latin America and the Caribbean, and North America and Western Europe, gender disparities at the secondary level are generally small or non-existent. In East Asia and the Pacific, gender parity was achieved in 2007. In those regions where gender disparities exist at the primary level, disparities are even more significant at the secondary level.

Table 2. GER and GPI at the secondary level of education

| Region | SECONDARY GER (MALES) % | | | SECONDARY GER (FEMALES) % | | | GPI, SECONDARY GER | | |
|----------------------------------|----------------------------|------|-------|------------------------------|-------|-------|--------------------|------|------|
| | 1995 | 2000 | 2007 | 1995 | 2000 | 2007 | 1995 | 2000 | 2007 |
| Arab States | 53.4 | 63.5 | 70.4 | 44.3 | 57.3 | 65.1 | 0.83 | 0.9 | 0.92 |
| Central and Eastern Europe | 77.5 | 91.9 | 90.2 | 77.5 | 89.1 | 86.5 | 1 | 0.97 | 0.96 |
| Central Asia | 91.5 | 85.5 | 95.9 | 88.0 | 84.3 | 93.2 | 0.96 | 0.99 | 0.97 |
| East Asia and the Pacific | m | m | 74.1 | m | m | 76.3 | m | m | 1.03 |
| Latin America and the Caribbean | 39.0 | 80.8 | 85.1 | 42.9 | 86.3 | 92.0 | 1.1 | 1.07 | 1.08 |
| North America and Western Europe | 104.1 | 99.4 | 100.1 | 106.4 | 100.4 | 100.3 | 1.02 | 1.01 | 1 |
| South and West Asia | 50.4 | 51.6 | 56.9 | 33.0 | 39.4 | 49.6 | 0.65 | 0.76 | 0.87 |
| Sub-Saharan Africa | 26.8 | 27.8 | 36.7 | 21.7 | 22.5 | 28.6 | 0.81 | 0.81 | 0.78 |

Note: m = missing value

2007 data for the Arab States reflect 2006 data.

Source: UNESCO Institute for Statistics database, 2010

In the Arab States region, Mauritania, Morocco and the Syrian Arab Republic increased the proportion of females enrolled in secondary education compared to males between 1995 and 2007. However, in all three countries, there are still many children of both genders who are not enrolled. During the same time span in the South and West Asia region, India, the Islamic Republic of Iran and Nepal also increased the proportion of females compared to males in secondary education.

Finally, in sub-Saharan Africa, substantial progress has been made in most countries. Yet, males continue to be enrolled at much higher rates than females in many countries. For example, the GPI for GER at the secondary level is below 0.75 in Burkina Faso, Burundi, the Democratic Republic of the Congo, Eritrea, Ethiopia, Guinea, Mali, Mozambique, Niger, Sierra Leone and Togo. It is below 0.50 for Chad, meaning that more than twice as many boys are enrolled in secondary education as girls.

Tertiary education

Data on enrolment in tertiary education are less available than for the primary and secondary levels. Regional data are missing for most regions for 1995, and the regional GPI is unavailable for the Arab States and sub-Saharan Africa for all three reference years (1985, 1995 and 2005). Nonetheless, country-level data for the Arab States and sub-Saharan Africa are often available.

In the Arab States, gender disparity varies significantly with males favoured in some countries and females favoured in others. For example, males are favoured in Morocco (0.89) and especially in Yemen (0.42) according to GPI figures. On the other hand, females outnumber males in relative terms in Lebanon, Oman, the Palestinian Autonomous Territories and Saudi Arabia. In general, females are increasingly

represented at the tertiary-level enrolment in all countries of the region, with the exception of Djibouti where males were increasingly favoured between 2000 and 2007.

It should be noted that the relative high representation of women in some of the Gulf States may be explained by the early entrance of males to the job market or the high proportion of immigrant, non-educated males in the total population. Such may be the case in Qatar and Kuwait, for instance, where the GPI for 2007 was 6.1 and 2.3, respectively.

Similarly, in sub-Saharan Africa, females are increasingly represented in comparison to males at the tertiary level (i.e. increasing GPI values). Nevertheless, males continue to be favoured over females in participation at this level. Some very significant gender disparities (i.e. less than 0.50) exist in Burkina Faso, Central African Republic, Chad, the Democratic Republic of the Congo, Ethiopia, Guinea, Mali, Niger and the United Republic of Tanzania. In Chad, the GPI was as low as 0.15 in 2007.

Table 3 shows that in South and West Asia participation rates for females are growing at the tertiary level compared to males. Nevertheless, gender disparity favouring males continues to exist in 2007 as the GPI for the region was 0.74. Female participation has increased in India and especially in the Islamic Republic of Iran. Unlike in the former, however, where males are still favoured in terms of GPI, the situation in the latter has reversed completely. In 1995, males showed higher enrolment rates in tertiary education (GPI of 0.56), yet by 2007 females made up the larger proportion of tertiary students (GPI of 1.14).

Table 3. GER and GPI at the tertiary level of education

| Region | TERTIARY GER (MALES) % | | | TERTIARY GER (FEMALES) % | | | GPI, TERTIARY GER | | |
|----------------------------------|---------------------------|------|------|-----------------------------|------|------|-------------------|------|------|
| | 1995 | 2000 | 2007 | 1995 | 2000 | 2007 | 1995 | 2000 | 2007 |
| Arab States | m | m | m | m | m | m | m | m | m |
| Central and Eastern Europe | m | 42.0 | 55.4 | m | 50.7 | 69.8 | m | 1.21 | 1.26 |
| Central Asia | 27.2 | 21.4 | 24.7 | 30.1 | 20.2 | 27.2 | 1.1 | 0.94 | 1.1 |
| East Asia and the Pacific | m | 16.6 | 24.2 | m | 12.7 | 24.1 | m | 0.77 | 0.99 |
| Latin America and the Caribbean | m | 20.9 | 31.3 | m | 24.7 | 38.9 | m | 1.18 | 1.16 |
| North America and Western Europe | 54.7 | 53.6 | m | 64.5 | 68.2 | m | 1.18 | 1.27 | m |
| South and West Asia | m | 10.2 | 14.3 | m | 6.8 | 10.6 | m | 0.67 | 0.74 |
| Sub-Saharan Africa | m | m | m | m | m | m | m | m | m |

Note: m = missing value

Source: UNESCO Institute for Statistics database, 2010

While males were favoured in East Asia and the Pacific in 2000, gender parity was achieved by 2007. This is largely driven by the achievement of gender parity in China during this time period. At the same time, it is important to keep in mind that many countries do not report tertiary data. Among those that do, the majority of countries report higher rates of participation for females. Countries that report a participation rate that favours males include Cambodia, the Democratic People's Republic of Korea, Japan, Lao PDR and Macao (China).

Table 3 also shows that females are more likely to be enrolled in tertiary education than males in Central Asia, Central and Eastern Europe, Latin America and the Caribbean, and North America and Western Europe. Exceptions, however, do exist in Azerbaijan, Tajikistan and Uzbekistan in Central Asia; Turkey in Central and Eastern Europe; and Liechtenstein and Switzerland in North America and Western Europe.

Adult literacy

While there has been growth in female literacy rates in many regions, adult literacy data for 1985 to 2005, as presented in **Table 4**, show that gender disparities continue to exist. Disparities are greatest in the Arab States, South and West Asia, and sub-Saharan Africa. Despite this, growth has been most substantial in South and West Asia, where the proportion of female adult literates has increased by almost 20 percentage points between 1985 and 2005. That being said, still only about one-half of all adult females were literate in 2005.

Table 4. Adult literacy rates

| Region | ADULT LITERACY RATE (MALES) % | | | ADULT LITERACY RATE (FEMALES) % | | |
|----------------------------------|-------------------------------------|------|------|---------------------------------------|------|------|
| | 1985 | 1995 | 2005 | 1985 | 1995 | 2005 |
| Arab States | 70.0 | 77.2 | 80.3 | 46.1 | 56.0 | 61.5 |
| Central and Eastern Europe | 98.1 | 98.8 | 98.9 | 94.1 | 96.0 | 96.3 |
| Central Asia | 98.8 | 99.0 | 99.0 | 96.9 | 97.8 | 98.1 |
| East Asia and the Pacific | 89.3 | 95.1 | 96.2 | 75.2 | 88.3 | 90.7 |
| Latin America and the Caribbean | 87.7 | 90.5 | 91.7 | 85.6 | 89.0 | 90.3 |
| North America and Western Europe | 99.4 | 99.5 | 99.6 | 98.9 | 99.1 | 99.3 |
| South and West Asia | 60.1 | 70.3 | 74.4 | 34.0 | 46.7 | 53.3 |
| Sub-Saharan Africa | 62.6 | 68.8 | 71.2 | 44.6 | 50.8 | 54.0 |

Source: UNESCO Institute for Statistics database, 2010

The proportion of literate females in East Asia and the Pacific, the Arab States and sub-Saharan Africa also increased by 16%, 15% and 10%, respectively, accounting for 91%, 62% and 54%, respectively, of literate females by 2005 in these regions. In contrast, the growth rate for male literacy was slower in each of these regions.

Gender disparities in Latin America and the Caribbean have traditionally been minimal. Nevertheless, in 2005, approximately 10% of females remain illiterate. In North America and Western Europe, Central and Eastern Europe, and Central Asia, the majority of both adult males and females were literate in 2005. Minor disparities, which were reported in 1985 in Central and Eastern Europe, as well as Central Asia, no longer existed in 2005.

Women in science

After going through the higher education system, a research career is one of the logical choices, in particular for PhD graduates. While globally there is more or less gender parity at the level of ISCED 5A enrolment, at the PhD level the share of women in total enrolment drops to about 42% (based on an – admittedly crude – unweighted average of data for the latest available year for 124 countries).

At the research level, the share of women decreases even more. In 121 countries with available data², women represent slightly more than one-quarter of researchers (29%). In 37% of these countries, they represent less than one-third. Only about 15% of countries have achieved gender parity, and only a handful of others have more female researchers than male.

According to the data illustrated in **Figure 1**:³

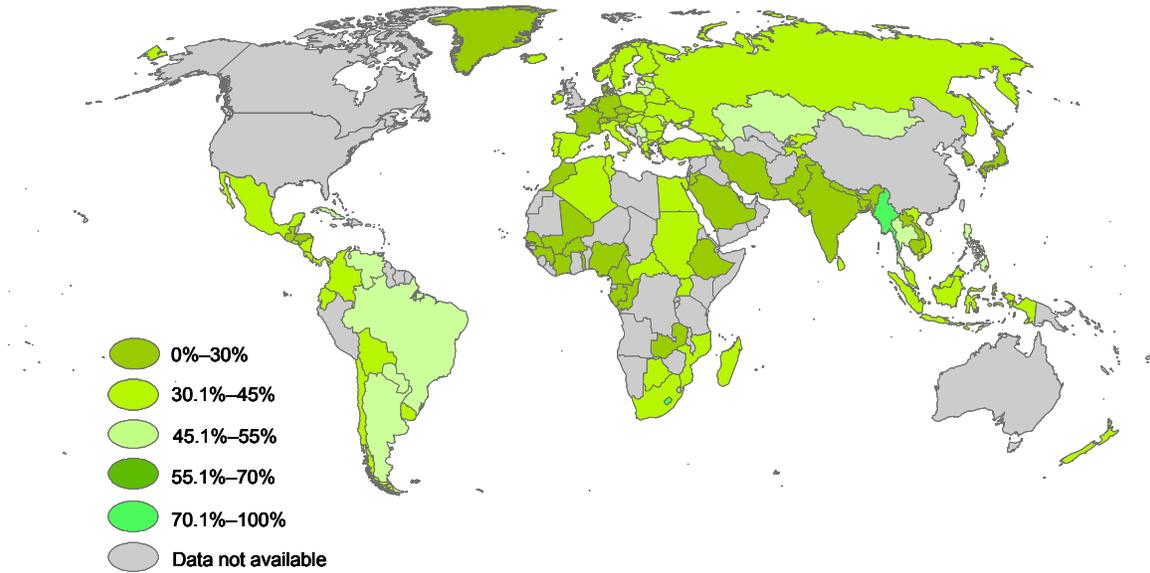
- In Latin America and the Caribbean, 46% of researchers were women, exceeding the world average of 29%. Five countries have achieved gender parity: Argentina, Cuba, Brazil, Paraguay, and Venezuela. In contrast, men accounted for more than 70% of researchers in Chile, Guatemala, Honduras and the U.S. Virgin Islands.
- In Asia, women constituted only 18% of researchers, but there is considerable heterogeneity. South Asia had the lowest rate of 18%, mostly due to the rate in India (13%). Less than 30% of researchers were female in the Asian Arab States (21%), as well as in Japan (13%) and the Republic of Korea (15%). South East Asia reported a high share of female researchers at 40%. Most Central Asian countries reported gender parity (around 50%).
- In Europe as a whole, only five countries achieved gender parity: the Former Yugoslav Republic of Macedonia, Latvia, Lithuania, Rep. of Moldova and Serbia. The lowest share was found in the Netherlands, at 18.0%, while the highest share - 52.7% - was reported by Latvia.
- In the Community of Independent States, women's participation in research was much higher - 43% - than the world average, ranging from 38.8% in Tajikistan to 52.7% in Georgia.
- In Africa, it was estimated that about 33% of researchers were women. In Guinea, the female share was as low as 5.8% (data for the year 2000), while the highest share was found in Lesotho at 55.7% (in 2004).

² Data are for 2007 or the latest year available. Data are lacking for many countries with significant numbers of researchers, such as Australia, Canada, China, the United Kingdom and the United States.

³ Regional totals for percentage of women researchers are based on headcount and available data only; no estimates are made.

Figure 1. The gender gap in science

Women as a share of total researchers, 2007 or latest available year



Source: UNESCO Institute for Statistics, September 2009.