

Global Educational Trends

1975-2025

A Brief Review of Data on
Ten Key Issues

GLOBAL EDUCATIONAL TRENDS

1970-2025

A Brief Review of Data on Ten Key Issues

Education and Policy Data Center

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The Education Policy and Data Center is a public-private partnership of FHI 360 and the US Agency for International Development. Its mission is to improve education policy and planning in developing countries by expanding access to and use of quality data.

INTRODUCTION

The Education Policy and Data Center is pleased to present this Global Education Briefer as a summary of data on ten key issues in education in developing countries.

The briefer covers a range of issues: access to early childhood, primary, and secondary education; inequality by gender, income, and area of residence (urban/rural); projections on reaching the EFA goal of universal primary education by 2015; demographic projections on population, pupils, teachers, and youth; the role of non-formal education; and the relationship between education and health¹. The briefer does not cover a range of important issues less amenable to data analysis, such as quality, curriculum, and government effectiveness, but emphasizes that these issues are critical to a good education system.

The data used in this briefer cover a range of time periods and countries², depending on the most reliable statistics available for the most number of countries. For some issues the data goes back to 1970. For a few issues, trends are projected to 2015 or 2025³.

It is hoped that this briefer will be useful to policy makers and practitioners as a guide to education trends – showing how education has advanced over the past several decades and the trends that can be expected in the next decade.

¹ There are various ways to measure participation in an education system. Several terms are particularly important to understanding the data presented in this briefer. **Enrollment rates** measure the number of children registered at a specific point during the school year as a proportion of all children of school age; this data is compiled by the UNESCO Institute for Statistics (UIS). **Attendance rates**, based on household surveys, count children reported to be attending school as a proportion of all school age children. **Educational attainment rate** refers to the proportion of the population that reaches a particular education level as its highest level of education. See Appendix 2 for the definition of additional terms.

² The main data sources are: UNESCO Institute for Statistics, Demographic and Health surveys and Child Welfare surveys.

³ All of the models and the assumptions can be obtained from the EPDC by mailing epdc@aed.org.

The numbers in brief

- In 2005, one-third of the world's school age children were not on track to complete primary school – 12% of children were not on track because they would never enter school and 22% because they would drop out of school before completing primary.
- Globally, in 2005, for every 100 boys in primary school, there are 95 girls. In Sub-Saharan Africa there are only 89 girls for every 100 boys; in the Middle-East 92, and in Latin America 97.
- There are roughly equal numbers of male and female secondary pupils, but they are unevenly distributed. In countries where secondary enrollment is low – below 60% - males outnumber females by 1.24 to 1; in countries where secondary enrollment is high, females outnumber males in a number of countries.
- School access is uneven. In cities, more than 8 out of every 10 school age children are in school, but in rural areas, this falls to less than 7 out of 10 (in 47 developing counties sampled).
- Among the wealthiest fifth of children, 9 out of 10 are in primary school, but among the poorest fifth only 6.5 out of 10 are.
- In 2015, more than 80% of children will complete primary school in 50 out of 88 developing countries sampled. If all countries accelerated primary enrollment growth to that of the fastest five in the group, 64 out of 88 countries would exceed 80% completion in 2015, and 80 of 88 would do so by 2025.
- According to 2005 data, less than one-third of young children attended pre-school in 33 out of 74 countries. At the same time, in 27 out of 114 countries, more than one-fifth of first graders entered primary school early. Underage first graders on average perform worse than on-time first graders.
- Non-formal schooling plays a varied role in education. Non-formal school attendance in primary school age varies from 0 to 10% of total school enrollment in 27 countries sampled. The income benefit of non-formal schooling to the individual varies from being equivalent to less than primary schooling, to being equivalent to an upper secondary degree.

- Given present trends, the number of primary pupils will rise from 688 million in 2005 to 726 million in 2015. Most of the growth is concentrated in Sub-Saharan Africa where the number of pupils will rise from 116 million in 2005 to 166 million by 2015. The need for more and better trained primary school teachers is most acute in Sub-Saharan Africa and South Asia.
- Trends suggest the number of secondary school pupils will rise from 507 million in 2005 to 583 million in 2015. The growth will be most rapid in Sub-Saharan Africa and South Asia, while smaller youth cohorts will lead to a decline in secondary school pupils in East Asia. The shortage of trained secondary school teachers will be even greater than for primary school teachers.
- Educational attainment is on the rise. Globally, the proportion of adults over 15 years of age with at least some secondary education will rise from 60% in 2005 to 71% in 2025. Tertiary education attainment is projected to rise from 10% to 14%. The number of highly educated adults will rise fastest in Asia.
- The youth bulge – a large group of 15-24 year olds relative to the rest of the population – will stabilize in Asia and Latin America, but will continue to grow in Sub-Saharan Africa over the next 20 years.
- The higher the education level, the less likely that a young adult (age 15-24) is working. For some, it is because they are in secondary school or in university. However, it appears that on average, youth with only primary school attainment have higher unemployment rates than their counterparts with no schooling at all.
- Education and health are linked. In a sample of 37 developing countries, children of unschooled mothers are twice as likely to die before their fifth birthday as children of mothers with secondary education.
- In 43 developing countries, teenage girls with no schooling are over three times more likely to get pregnant than teenage girls with secondary schooling.

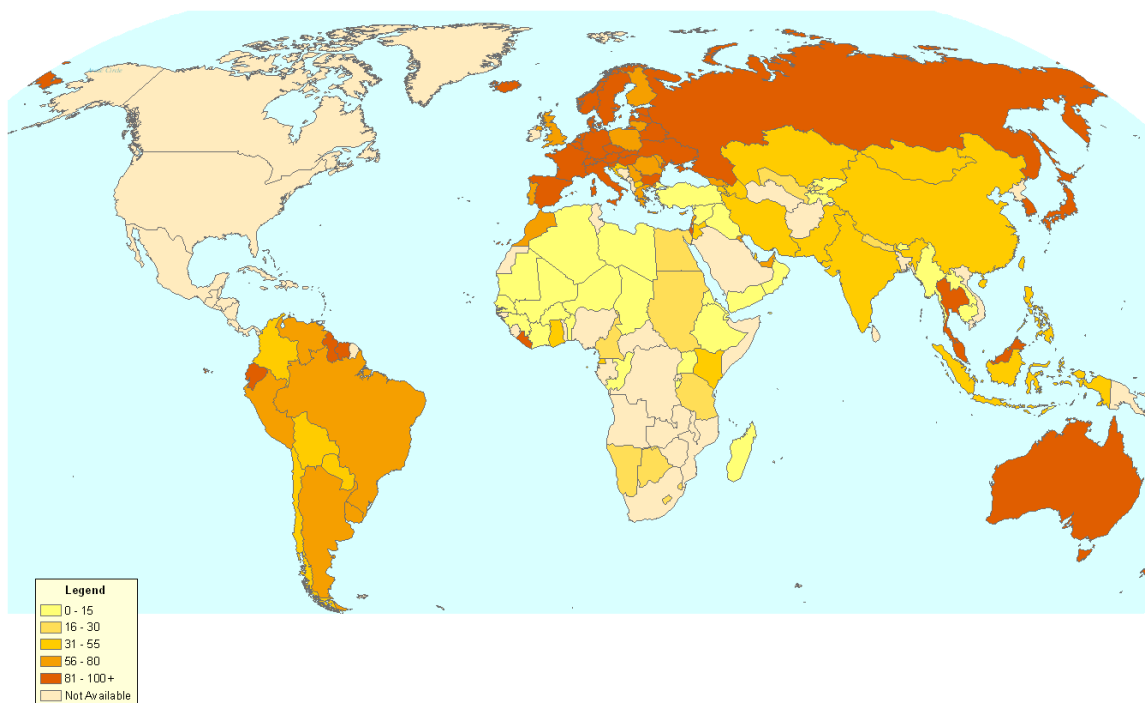
1. There is unmet demand and need for pre-primary education.

Early education offers many long-term benefits to children, enhancing long-term cognitive abilities and performance in primary school and beyond, particularly if combined with quality nutrition and health care. Disadvantaged children gain the most because early programs can help overcome education barriers posed by poverty, race, ethnicity, gender, and religion¹.

Despite clear benefits, enrollment in pre-primary programs in many countries is low, lagging far behind enrollment rates for primary school. The map below shows distinct regional differentials in gross pre-primary enrollment rates around the world. The only places where pre-primary enrollment is consistently high is in industrialized countries, with a few developing country exceptions – Ecuador, Liberia, Malaysia, the Maldives, Mauritius, Suriname, and Thailand. Latin America has moderately high pre-primary enrollment, followed by Asia. There are very low levels in the Middle East and in Sub-Saharan Africa (gross pre-primary enrollment rates were below 15% in 16 of 26 countries in Sub-Saharan Africa).

At the same time, many underage children enter primary school. Data differ somewhat on the extent of underage school entry but suggest that in 25 to 50% of developing countries, over one-fifth of the children in first grade are underage². Underage entry is 2.5 times as prevalent in countries where the official school age is 7 than where entry age is 6³. In a few countries, for example, Burkina Faso, Indonesia, Mali, Syria, and

Pre-primary gross enrollment rate, 2006



Data source: UIS, values for 2006.

the United Arab Emirates, half or more of first graders are younger than the official entry age. The second map shows the percentage of first grade students who are underage.

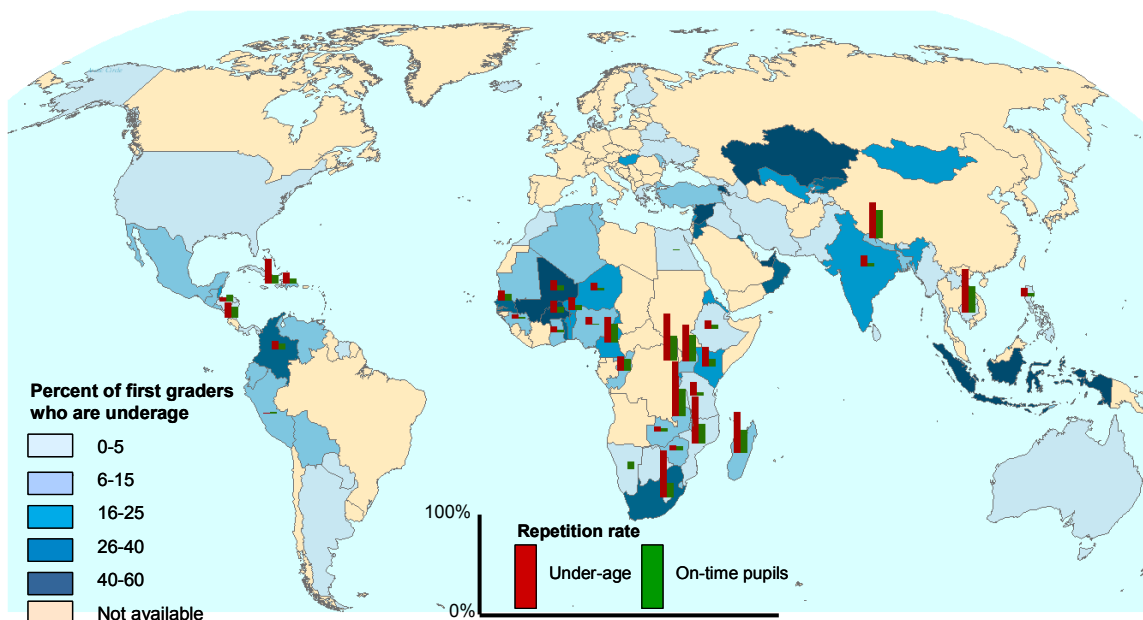
Underage first graders do not perform as well as older pupils. The map shows repetition rates of underage first graders (in red) and on-time first graders (in green) for 35 countries where household surveys enabled the calculation of age-specific repetition rates⁴.

High rates of underage school entry suggest that parents are sending their young children to school early in lieu of sending them to pre-primary school (presumably because there are no affordable or suitable pre-primary facilities).

High repetition rates of younger pupils in first grade represent a waste of resources and give the wrong message to young learners. The learning environment for the younger pupils is likely not age-appropriate, and the attention and resources devoted to children that are underage may detract from age-appropriate pupils' learning.

While responding to this unmet demand for early childhood education by providing age-appropriate facilities for underage first graders would take additional resources, it could lead to improvements in performance for on-time and older first graders, provide resource savings in first grade, and result in better preparation and subsequent success in school of first grade entrants.

Underage first grade attendance and repetition rates, 2000-06



Data sources: UIS per special request for percent underage; EPDC calculations from DHS household surveys 2000-06 for first grade repetition rates by age.

2. The world is getting closer to universal school entry, but is still far from universal primary completion and secondary participation.

Primary entry rates are approaching universal coverage in most countries of the world. Near universality of enrollment has led to improved gender equality. But primary completion rates are far from universal. If present trends continue, many countries will continue to see large proportions of students depart primary school prior to completion. Even fewer students will complete secondary school. In addition to high dropout rates throughout primary and secondary, insufficient secondary places result in low transition rates. After a decade of attention to primary school entry, the challenge is retaining children so they can finish primary school and have a decent chance of success in secondary.

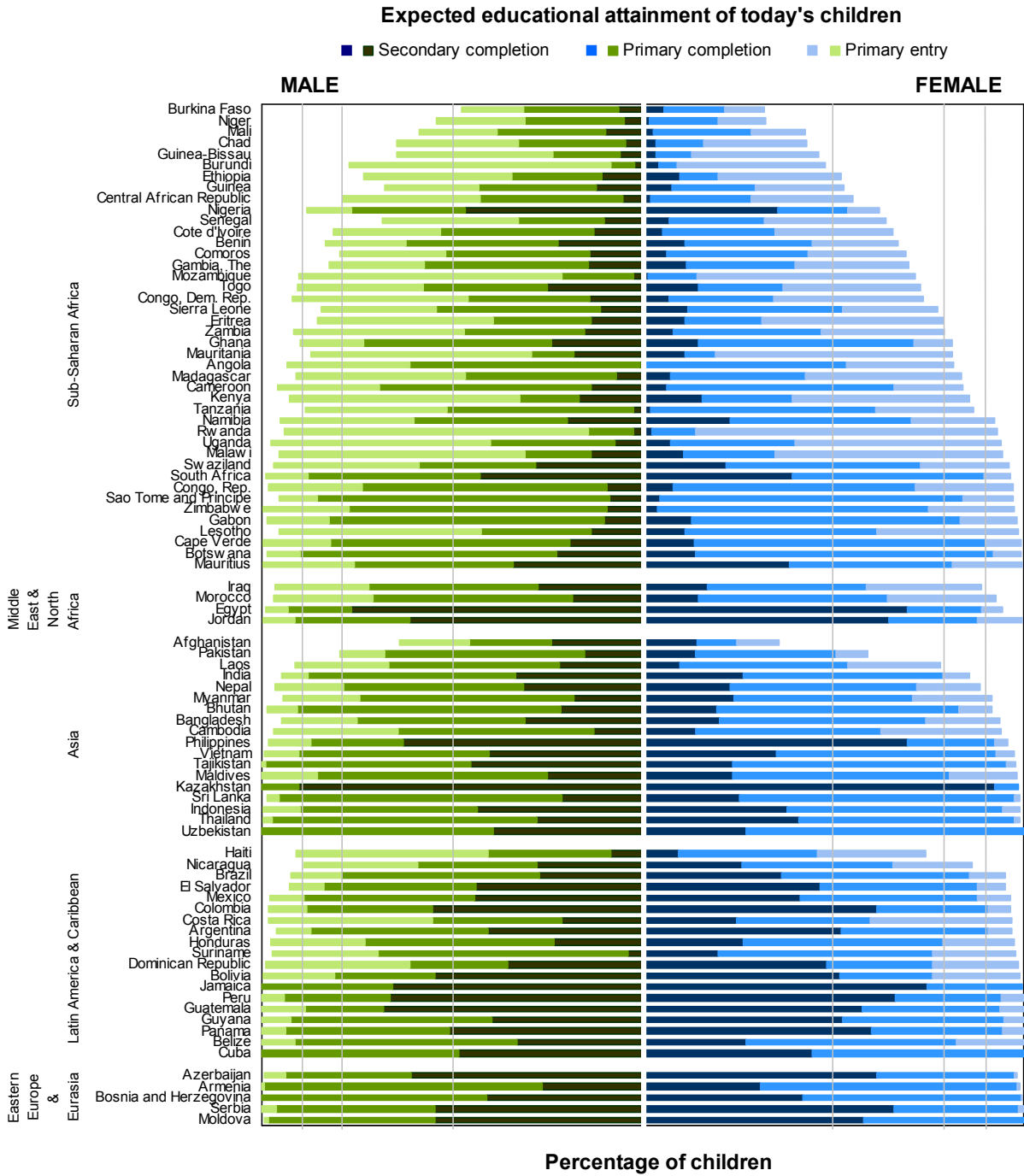
Today, according to data from household surveys and the UIS, approximately one-third of school-age children will not finish primary school – 12% because they will never enter school and 22% because they will drop out of primary school before they have finished.

The figure to the right shows the expected educational attainment of today's children for 88 countries in five regions, given current patterns of school entry, dropout, and graduation⁵.

The expected portion of children who will enter school is shown by the total length of the bars in the pyramid. In 75 out of 88 countries, more than 80% of boys will enter primary school, and in 63 countries, more than 80% of girls will enter primary school. Almost all of the countries with low entry levels are in Sub-Saharan Africa, but in many of these countries, data indicate that entry rates are rising quickly.

The proportion of children who will complete primary school, shown by the middle-blue and middle-green sections of the bars, is much lower. This can be seen in Sub-Saharan Africa, but also in a number of Asian and Latin American and Caribbean countries. The difference between primary entry and completion, the primary dropout percentage, signals significantly reduced opportunities for the children involved and a waste of resources.

In much of the world, a complete secondary education, shown by the darkest sections in the bars, remains a remote dream for the majority of children. In Africa and Asia, as well as much of Latin America and the Middle East, far fewer than half of today's children will graduate from upper secondary school. Unless the opportunities for secondary education are expanded quickly, these children and the countries they are in will fall further behind the rest of the world.



Data source: EPDC calculations using data from 2000-06 DHS surveys.

3. The world is not on track to reach universal primary completion by 2015, but an acceleration to match the fastest historical trends could make a significant difference.

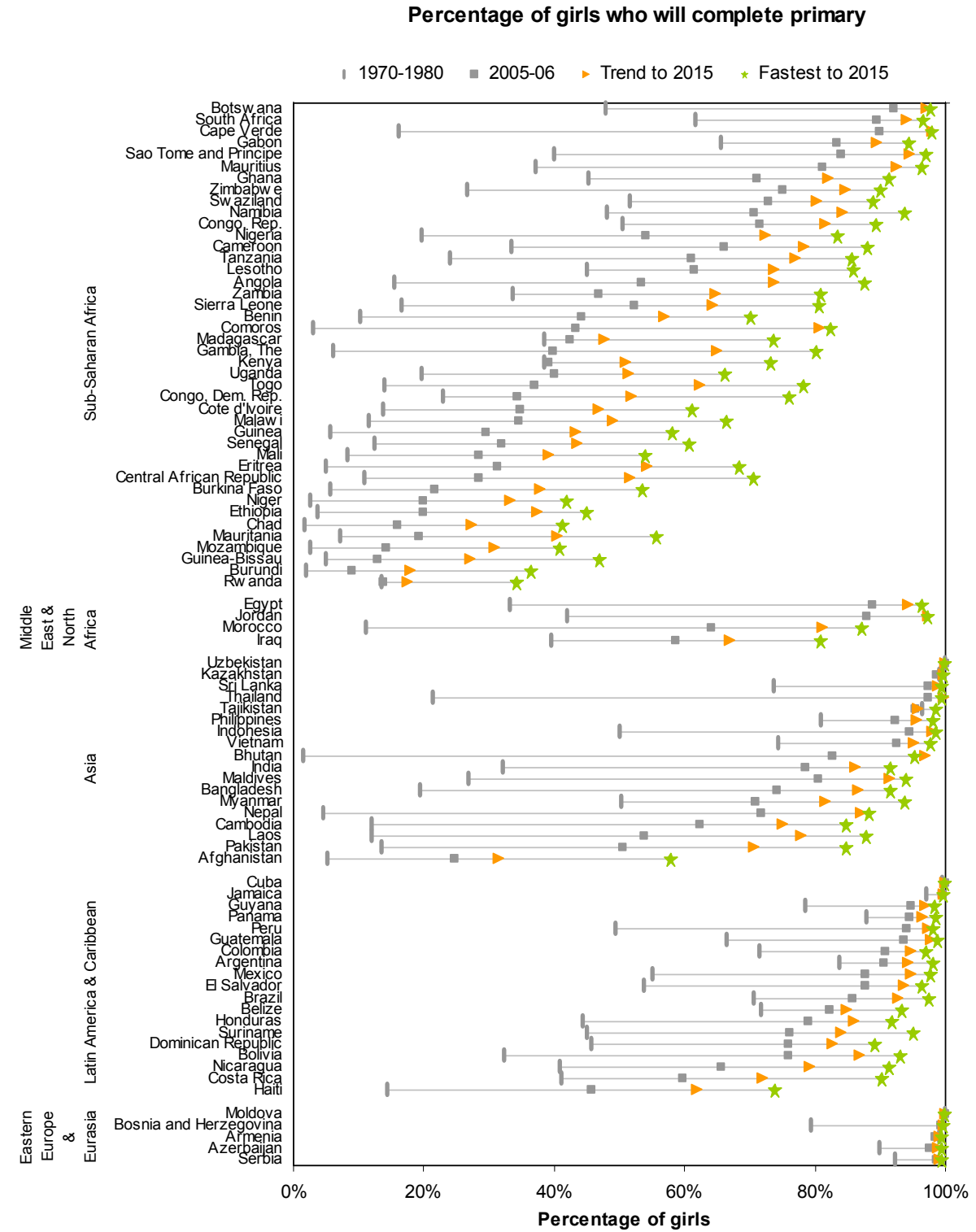
In 2000, leaders of the world convened in Dakar for the World Education forum and re-committed to six education goals from the 1990 World Conference on Education for All. The second goal is “universal primary education by 2015”⁶. While progress has been made, this goal will not be achieved in all countries if present trends persist. The issue is a combination of some countries having begun at extremely low levels in 2000, and some countries increasing enrollment rates too slowly. If these lagging countries (and all others too) accelerated to the most rapid historically observed growth rates for primary completion, the goal of universal primary education would be much closer to attainment in 2015⁷.

To simplify the presentation, and because of the strong interest in girls schooling and because projections of girls and boys schooling reveal similar trends, this summary assessment deals only with girls primary completion.

The graph on the adjacent page shows trends in female primary completion rates for 88 countries. The *gray bars* show historical female primary completion rates in the 1970s (the particular year varies by country). The *gray squares* show the percentage of females who completed primary school in 2000-06. The *orange arrow heads* show the expected completion rate for 2015. The *green stars* represent the 2015 rate that might be achieved if countries accelerated to a more rapid rate of advancement. The most rapid advancement in the five fastest growth countries has been an increase of between 56 to 81 percentage points over 35 years in Bhutan, Cape Verde, Egypt, Nepal, and Thailand. In a little over one generation, these countries were able to move from a minority of girls finishing primary school to a majority of girls finishing primary school.

As noted above, the orange arrow heads show the female primary completion rate in 2015 *if present trends persist* in each country. Of the 88 countries, 38 would still be below 80% in 2015⁸.

If all countries accelerated to the average advancement rate of the fastest five, then 64 out of 88 countries would achieve an 80% female primary completion rate by 2015; 80 countries out of 88 would reach this level by 2025.



Data source: EPDC projections based on household surveys from 2000-06

4. Focus of gender inequity is shifting from the school to the work place.

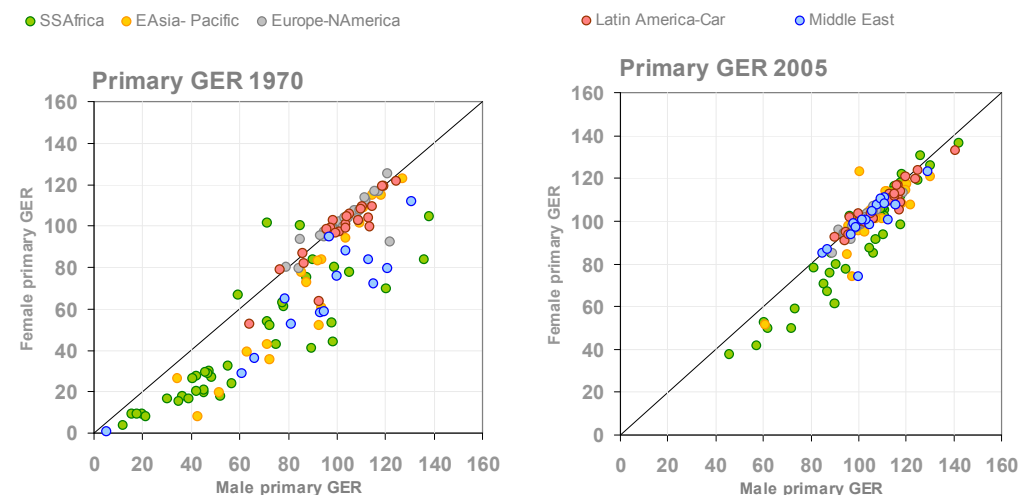
Today, the overall level of female access to education is approaching male access in most of the world's countries. This is a big leap forward from the situation in the 1970s, when girls' chances to get an education were only a fraction of boys'. As the accompanying graphs below show, gender inequality in access to primary school does endure in places, particularly in Sub-Saharan Africa, Afghanistan, and Pakistan; but, as of 2005, young women outnumber young men in the half of countries at the secondary level⁹.

Contrasting starkly to these impressive advances in education is the situation with women in the workplace. According to a 2008 World Economic Forum report, women still lag far behind men in overall employment, wages, and presence in top political and decision-making roles¹⁰.

The accompanying figures below show 35 years of education progress and reductions of gender inequality in education enrollment. The first two graphs show primary school enrollment for boys and girls in 1970 and in 2005, and the third and fourth show secondary school enrollment for the same years. The diagonal lines of the graphs show where male and female enrollment is equal. The dots on the graphs represent countries, color-coded for world region. Dots below the diagonal are countries where girls have lower school participation than boys.

The pair of primary school graphs show a significantly changed situation in 2005 compared to 1970. In 1970, girls were far less likely than boys to be in primary school, but by 2005 their enrollment rate was approaching that of boys. It is also clear that overall primary school attendance is significantly higher in 2005 than in 1970. The exception to this story is Sub-Saharan Africa (green dots), where girls are still at a noticeable disadvantage in primary school. *Gender inequality in primary education in this region needs continued and urgent attention.*

Gross enrollment rates, male and female, primary, 1970 and 2005



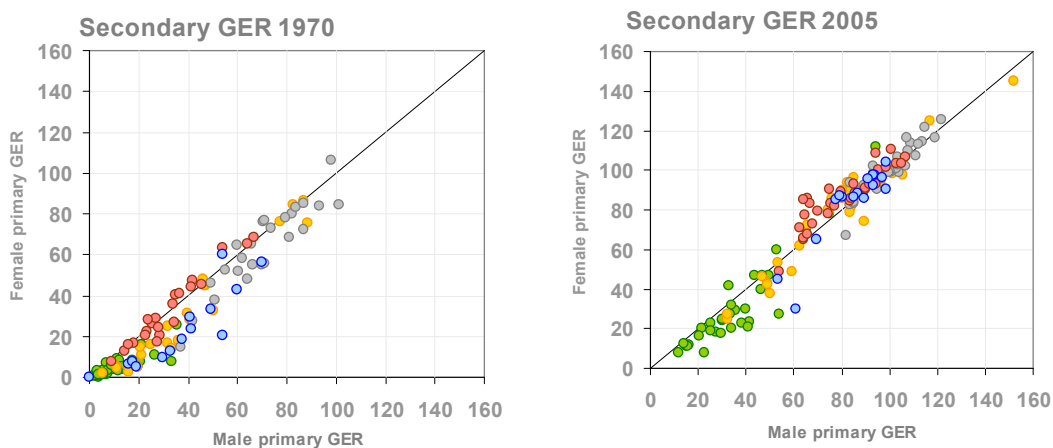
Data source: World Bank, EdStats, accessed November 15, 2008

The second set of graphs (below) on secondary enrollment, which show 35 years of progress in secondary school attendance, tells a different story. First, secondary enrollment has risen enormously, *more* than the increase in primary enrollment in most of the world (except Sub-Saharan Africa). Next, a new phenomenon called *reverse gender exclusion* has emerged. In 2005, young men still have much higher secondary attendance in countries where secondary school attendance is very low; but in 77 of 113 countries in this graph where secondary enrollment exceeded 60%, young men were *less* likely to be in secondary school than young women.

What are the social implications of this new trend? One perspective is that the secondary rates of return are lower for males than females; there is also concern that some young men are discouraged and turn to crime and violence. This concern is pertinent as youth unemployment rates have risen since the 1990s¹¹; however, not enough is known about what is driving relatively lower secondary school attendance of males and what the policy response should be.

Despite gains in education, women's labor force participation rates are persistently low in most countries¹². Although there is ample evidence showing that better educated women have healthier children and experience other social benefits, especially for families, the low female labor force participation rates imply a significant under-utilization of female talent and education investment. *Programs to encourage young women to make the transition from school to work would give countries – and the women themselves – a higher return on the important investment they are making in their education.*

Gross enrollment rates, male and female, secondary, 1970 and 2005



Data source: World Bank, EdStats, accessed November 15, 2008

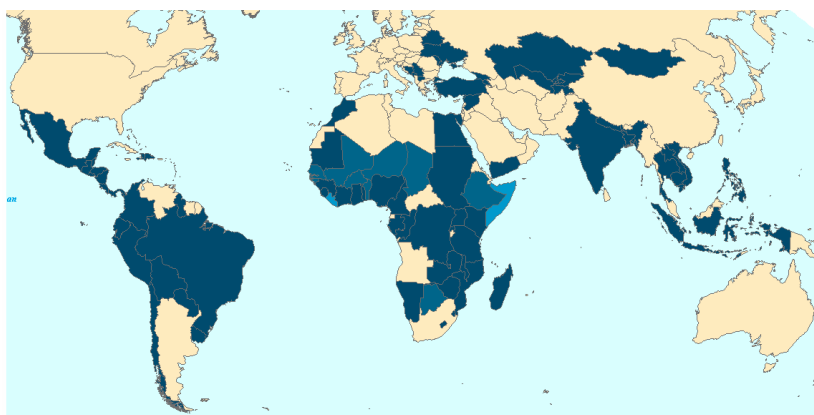
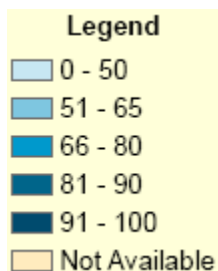
5. Worlds apart: school attendance of wealthy and urban children compared to poor and rural children

Two of the greatest exclusion factors for education are poverty and rural location¹³. In a sample of 47 developing countries covering 2000-06, only 66% of primary school age children from the poorest fifth of households were in primary school, as compared to 90% of children from the wealthiest fifth of households¹⁴. The average urban/rural attendance gap was smaller, 68% of rural primary school age children were in school, compared to 82% of urban children¹⁵. In some countries, however, the urban/rural attendance rate difference was more than a factor of two (Benin, Burkina Faso, Chad, Ethiopia, Mali, and Niger, for example).

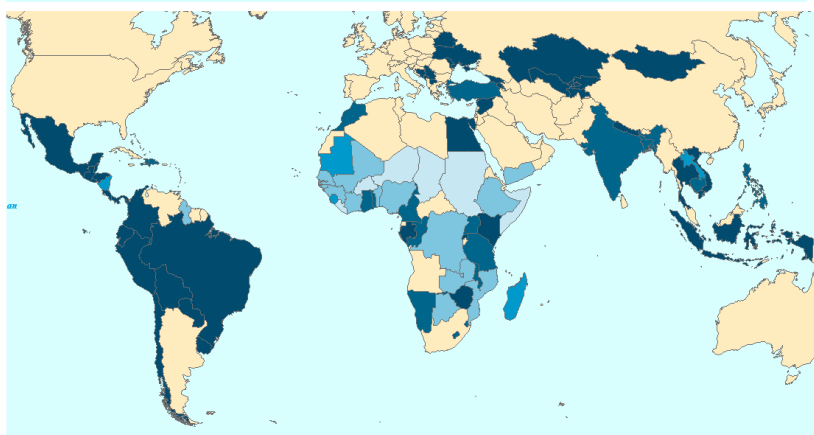
At the secondary level, the inequality in net attendance rates for these groups is even larger. In a sample of 37 developing countries, the average net attendance rate of secondary school age persons from the poorest fifth of households was 26% compared to 71% among the wealthiest fifth of households¹⁶. In a sample of 81 developing countries, net secondary attendance was 39% in rural areas, compared to 56% in urban areas¹⁷.

Primary school net attendance rates by household wealth, 2000-06

Wealthiest 20%



Poorest 20%



Data source: EPDC
extractions from
DHS 2000-06

The accompanying maps display the inequality between wealthy children and urban children compared with poor children and rural children. Primary school attendance of children from the wealthiest fifth of households and urban households are shown in the top maps on each page respectively, and attendance of the poorest fifth and rural children are shown on the bottom maps.

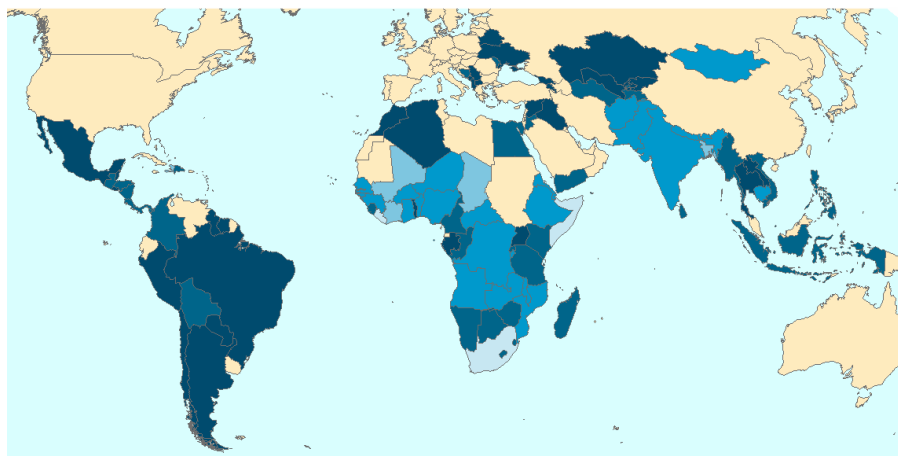
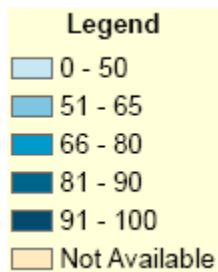
The high attendance rates among wealthier children and urban children are illustrated by the dark coloring on the top maps. In contrast, light coloring on the bottom two maps indicates low attendance rates for the poorest fifth and those living in rural areas.

Historically, in those countries where there is now near universal primary and secondary school attendance, the poor and the rural children appear to have been reached last. Other countries seem to be following the same path¹⁸. Is it possible to change this pattern? Perhaps not with current approaches. *But it is possible to accelerate the rate poor and rural children catch up to others in the education system.*

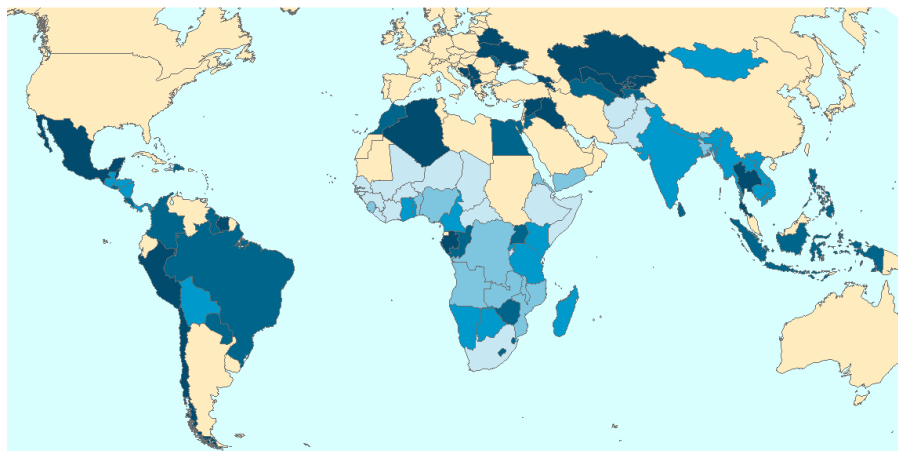
Countries where the attendance rates of poor and the rural children have recently made rapid increases are: Benin, the Dominican Republic, Ethiopia, Guinea, Mali, Morocco, and Senegal¹⁹.

Primary school net attendance rates by area, 2000-06

Urban



Rural



Data source: EPDC extractions from various household surveys 2000-06

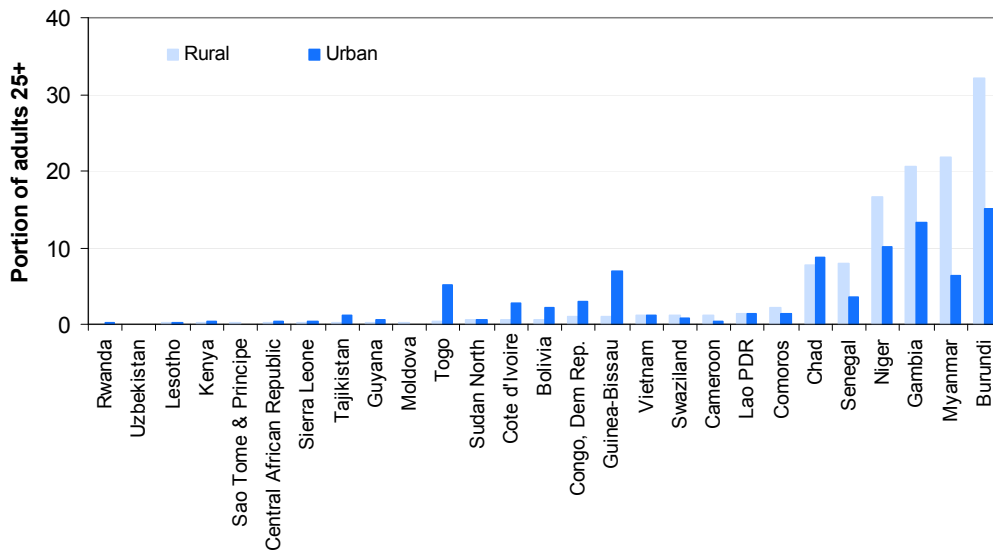
6. Non-formal education: a varied role

Available data²⁰ suggest that the role and value of non-formal education varies widely – it is a significant element of education in some countries and not significant in others; its contribution to income generation varies from being equivalent to secondary education or higher in some countries to equivalent to no schooling at all in others.

The figure below reveals that in 6 of 28 countries surveyed more than 5% of adults listed non-formal as their highest level of educational attainment. Non-formal programs are an umbrella designation for a wide array of activities, including alternative primary schools, youth training, literacy programs, and professional education. In some countries, where there are gaps in the formal public and private education systems, non-formal education programs may be a way to reach children, youth, and adults with instruction.

For formal education, there is a well-established correlation between an adult’s level of education attainment and outcomes such as that person’s income, health, or the schooling of their children. One might surmise that non-formal education should also be correlated in the same way, with higher levels of non-formal leading, for example, to higher income. A comparison of the correlation of income to formal education and non-formal education should give an indication of the education level of the non-formal programs.

Percentage of adults age 25+ with non-formal education as the highest level, by sex.



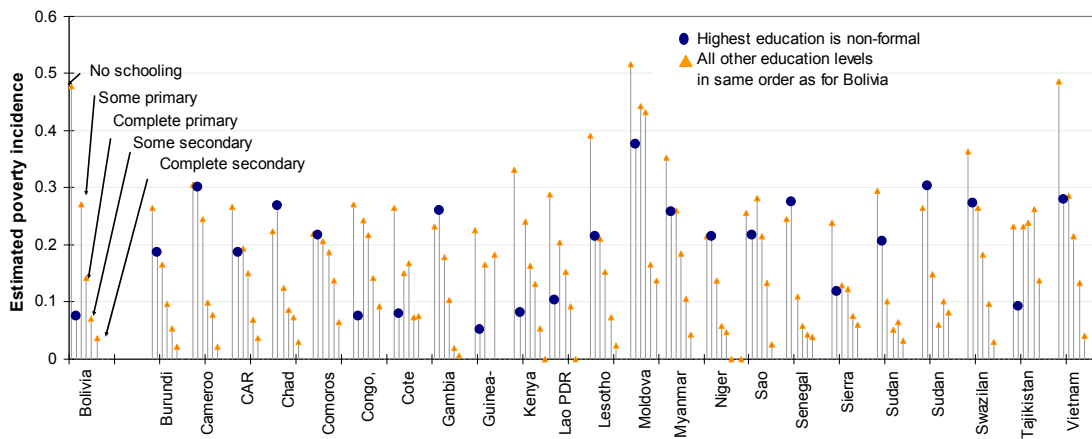
Data source: MICS 2000 surveys

The figure below shows relative poverty incidence by six education attainment categories. The education levels are arranged from lowest (no schooling) to highest (completed secondary), with non-formal highlighted with a bolded circle. The other education levels are designated with small orange triangles.

For formal education levels, there is a clear gradient of poverty - the higher the level of education attainment, the lower the poverty incidence. In contrast, the poverty levels of adults with non-formal schooling differ widely from country to country and there is no clearly discernable geographical pattern.

The largest group is those countries for which non-formal education appears to be equivalent (in terms of income generation) to primary schooling: Burundi, Central African Republic, Lesotho, Moldova, Myanmar, Sao Tome, Sierra Leone, Swaziland, and Vietnam. The next group is countries for which it appears non-formal education is comparable to no schooling at all: Cameroon, Chad, Comoros, Gambia, Niger, Senegal, and Sudan. The last and smallest group is countries for which non-formal education appears to result in incomes equivalent to at least some secondary education: Bolivia, DR Congo, Cote d'Ivoire, Kenya, Laos, and Tajikistan.

Estimated Poverty Incidence (income Q1) by highest educational attainment, both sexes age 25+



Data source: EPDC extractions from MICS 2000 Surveys.

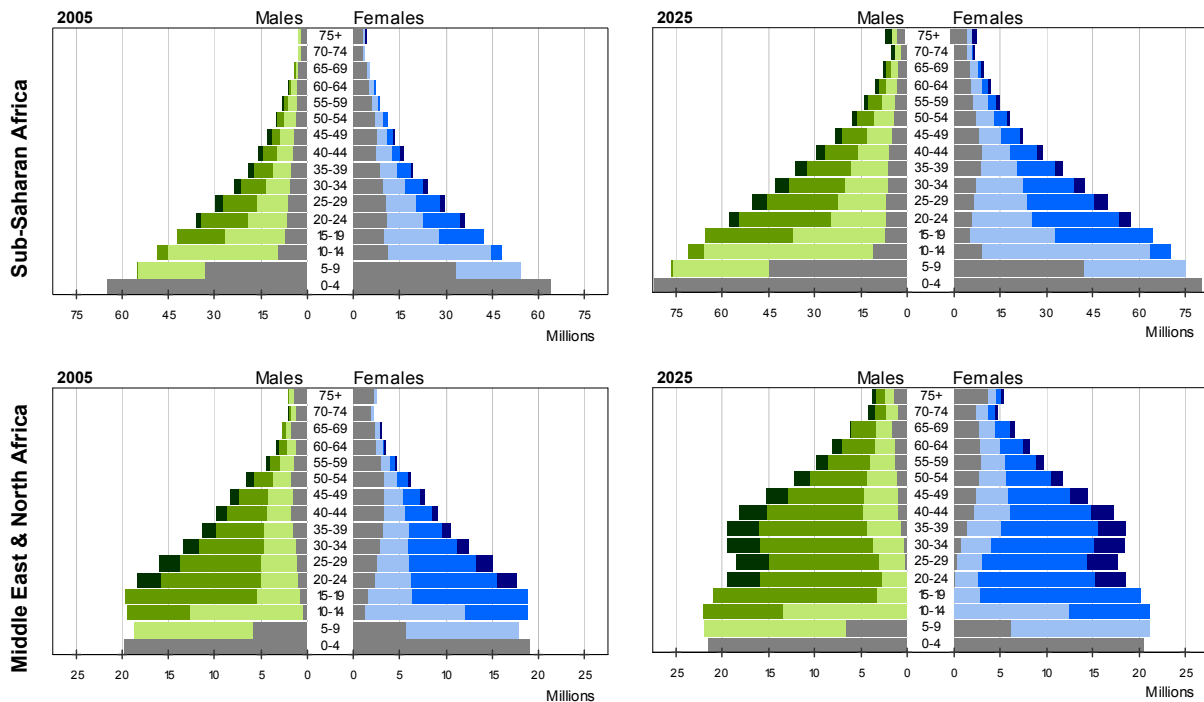
7. Human capital change in the world

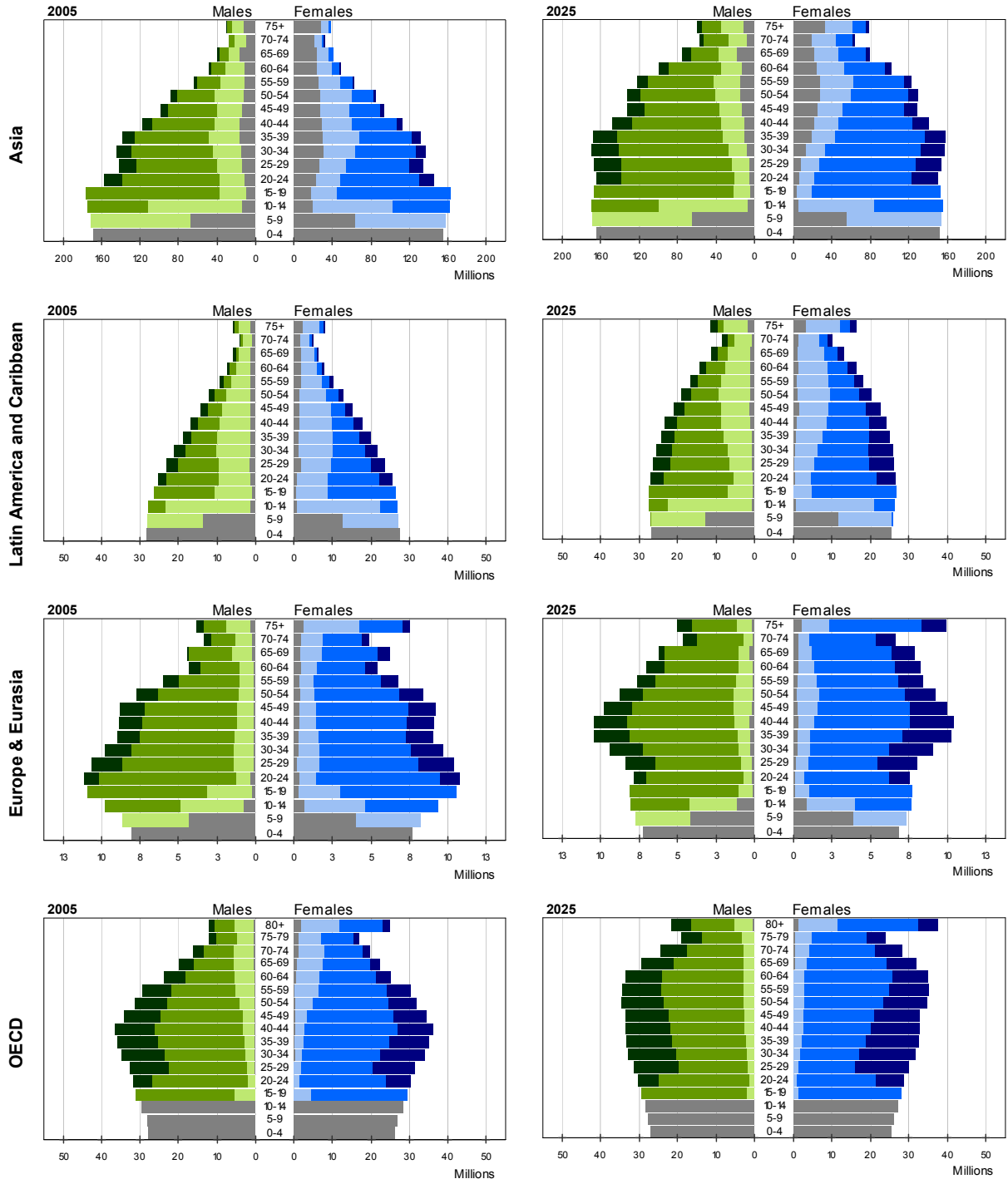
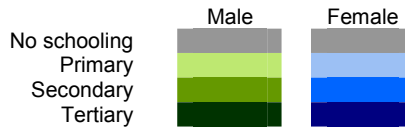
The dynamics of the world’s human capital is changing. In most regions, population growth is slowing down and the age-structure is becoming more balanced. Educational attainment levels for adults are rising in all regions²¹. Despite the progress, however, significant regional differentials are projected to persist to 2025. The gender gap in adult education attainment is shrinking in all world regions, though in some countries the gender gap endures.

In Sub-Saharan Africa and some countries of Asia, population is growing rapidly and the age structure of the population will continue to be dominated by youth for many decades. In other regions, the youth bulge is presently close to its maximum. In the next decades the population distribution will become more balanced. In Eastern Europe and Eurasia the precipitous fertility decline of recent decades²² is leading to a rapidly shrinking youth population, which surely will have an economic and social impact. To a lesser extent the same holds for the OECD nations²³.

In the pyramids shown on these pages, educational attainment levels are defined as having received: no formal schooling at all, any level of primary school, any level of secondary school, and any level of tertiary education. This image of human capital is somewhat optimistic, because, as discussed in section one, in most countries many of the children who begin primary or secondary school drop out before completing the level.

That said, primary attainment is becoming nearly universal. By 2025, Sub-Saharan Africa will be the only region with significant proportion of uneducated persons across all ages. In Asia and the Middle East, a proportion of older adults will also remain uneducated. Secondary attainment will be the norm for younger adults by 2025 in most countries. Despite these gains elsewhere, the proportion of adults with tertiary attainment will remain highest by a large margin in the OECD and Eastern European countries, meaning that these regions will maintain their significant advantage in labor force skills.





Data source: data from EPDC extractions and projections. See appendix for list of countries in each region.

8. Pupil and teacher projections 2005-2015: in some regions training enough teachers for the projected numbers of primary and secondary pupils will be a challenge.

In 2005, there were 688 million children in primary school²⁴. By 2015, given current trends, the number will be 726 million²⁵. Chart 1 on the accompanying page shows that growth by region. There will be considerable growth of primary pupils only in Sub-Saharan Africa, where the number is projected to increase from approximately 116 million in 2005 to 166 million in 2015. In Latin America, the Middle East, Eastern Europe, and South Asia the number of primary pupils will be relatively constant or grow slowly, but in East Asia, the number of primary pupils is projected to *decline* by almost 20%. This development is the result of falling fertility rates and a shrinking school age population (largely, but not exclusively, in China).

Mirroring these trends, chart 2 reveals that the need to expand the number of teachers is greatest in Sub-Saharan Africa, namely from approximately 2.8 million in 2005 to 4.4 million in 2015. The need for new teachers in this region is intensified because of the necessity to reduce extremely high pupil-teacher ratios in some countries²⁶.

Many teachers in developing countries (excepting the Middle East and East Asia) are untrained. Many more trained teachers are needed to fill this gap, not only in Sub-Saharan Africa, but also in South Asia, Latin America, and the Caribbean. The gaps in primary level trained teachers are shown in chart 2 as the distance between the dark green bar for trained teachers in 2005 and the orange arrow for total teacher need in 2015. Research suggests that the *quality* of teacher training is low and is one cause of very low learning levels in many developing countries.

In addition to expanding the number of trained primary teachers in some regions, all regions need to consistently address teacher attrition. Evidence from a small selection of developing countries suggests annual turnover of primary level teachers varies from 3% to 8%²⁷. UIS has noted that reducing attrition rates even by 1% could greatly lower the need for training new primary teachers²⁸.

In 2005, there were 507 million secondary school pupils in the world. By 2015, there will be almost 583 million if present trends hold²⁹. Chart 3 shows the regional trends. The increase will be largest in South Asia, but notable also in Sub-Saharan Africa and Latin America. This is largely the ripple effect of earlier primary school growth. In Eastern Europe and Eurasia and in OECD countries, the number of secondary school pupils is falling, largely because of population decline, not because of a reduction of secondary attendance rates.

Graph 4 reveals the trained teacher gap at the secondary school level³⁰. The gap is even larger than for primary schools. To meet growing pupil demand *and* bridge the trained teacher gap, the number of trained secondary school teachers would have to increase by 250% in Sub-Saharan Africa and South Asia; in East Asia the increase would have to be 70%, and in Latin America and the Caribbean 45%³¹. As Moore et al. (2008) note, simply meeting this demand may still not be enough to raise education quality.

Chart 1. Estimated primary pupils in 2005 and 2015



Chart 2. Estimated primary teachers by training in 2005 and 2015

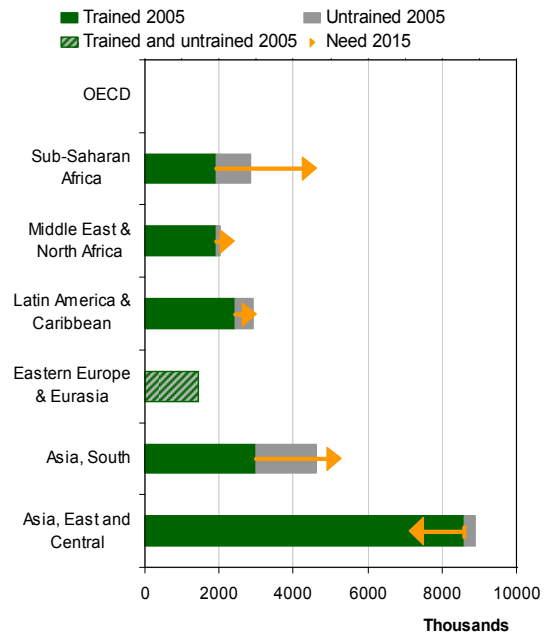


Chart 3. Estimated secondary pupils in 2005 and 2015

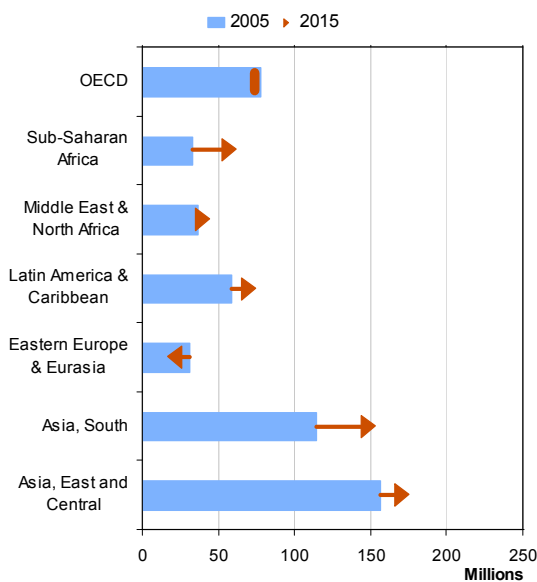
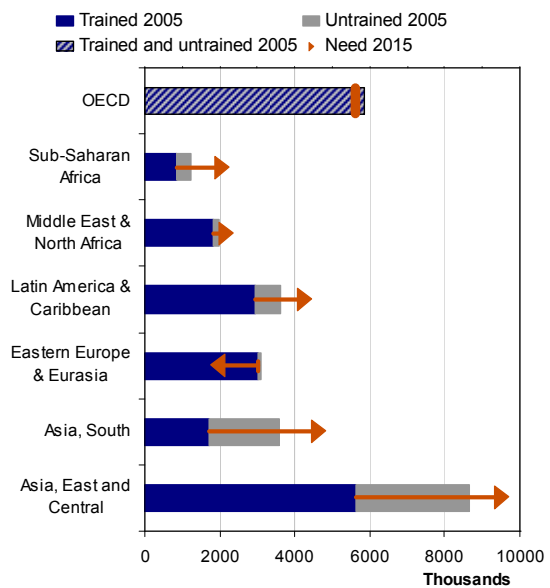


Chart 4. Estimated secondary teachers by training



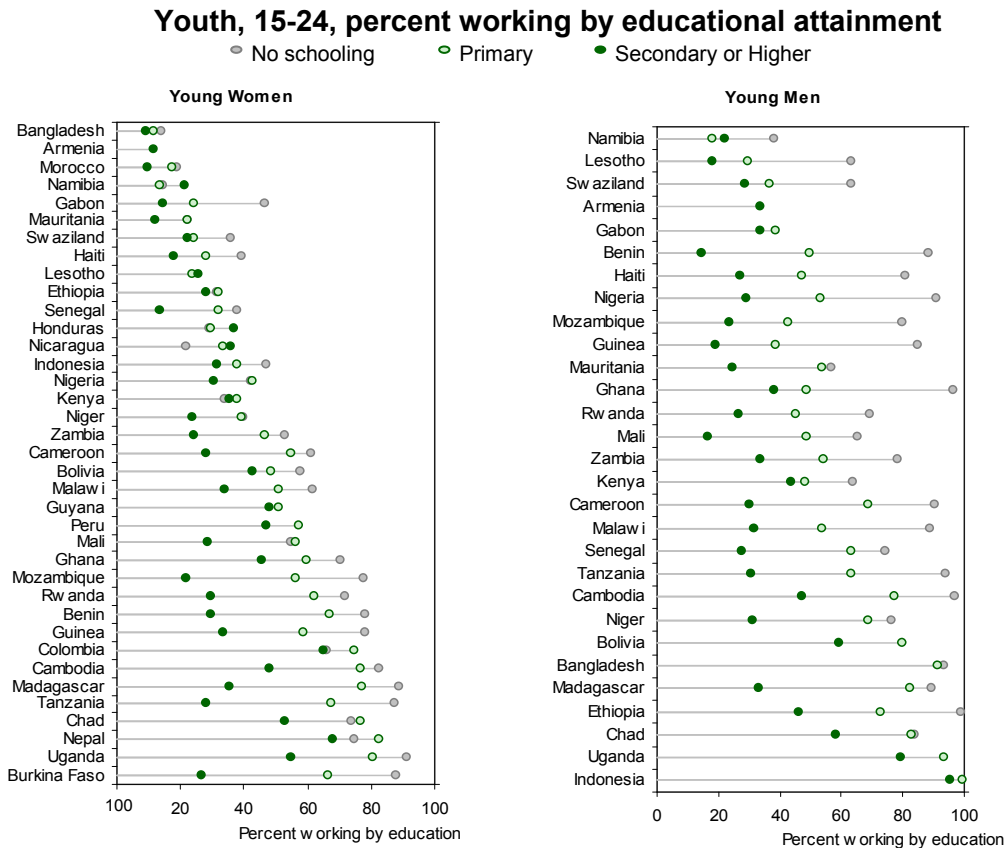
Data source: EPDC projections based on UIS data.

9. Proportions of youth working projected to decline as youth stay in school longer.

The 2007 World Bank Development report describes youth, typically ages 15-24, as an age of many transitions, including the transition from being in school, dependent on parents or others, to working and supporting themselves as adults³². Some youth have trouble making the transition – the ILO³³ reports that global youth unemployment rose from 12.3% in 1995 to 13.5% in 2005³⁴. In 2003, youth unemployment was highest in the Middle East and North Africa at 25%. Moreover, youth employment is more vulnerable than adult employment to economic variations such as the 2008 global economic downturn³⁵.

Global economic trends will affect the youth transition to work, but so will education trends. The charts below show there are substantial differences in the percentage of youth who work by education level. They also show that in most countries, youth with more education are *less likely* to be working³⁶. For example, in Sub-Saharan Africa in 2000-07, 61% of young men aged 15-24 with no schooling were working, compared to 37% of young men with primary schooling, and only 19% of those with secondary education attainment or higher. In general, the percentage of men working is higher than women³⁷.

One explanation is that youth with higher levels of education are still in school or university. The average attendance rates for youth as a whole vary from 5% to 60% for secondary school and higher; but are only 0% to 32% for primary school³⁸. Even when we account for school attendance *and* work rates, there are large portions of youth who are not doing either. Among youth with primary schooling only, these inactivity rates may be higher than among their unschooled counterparts.



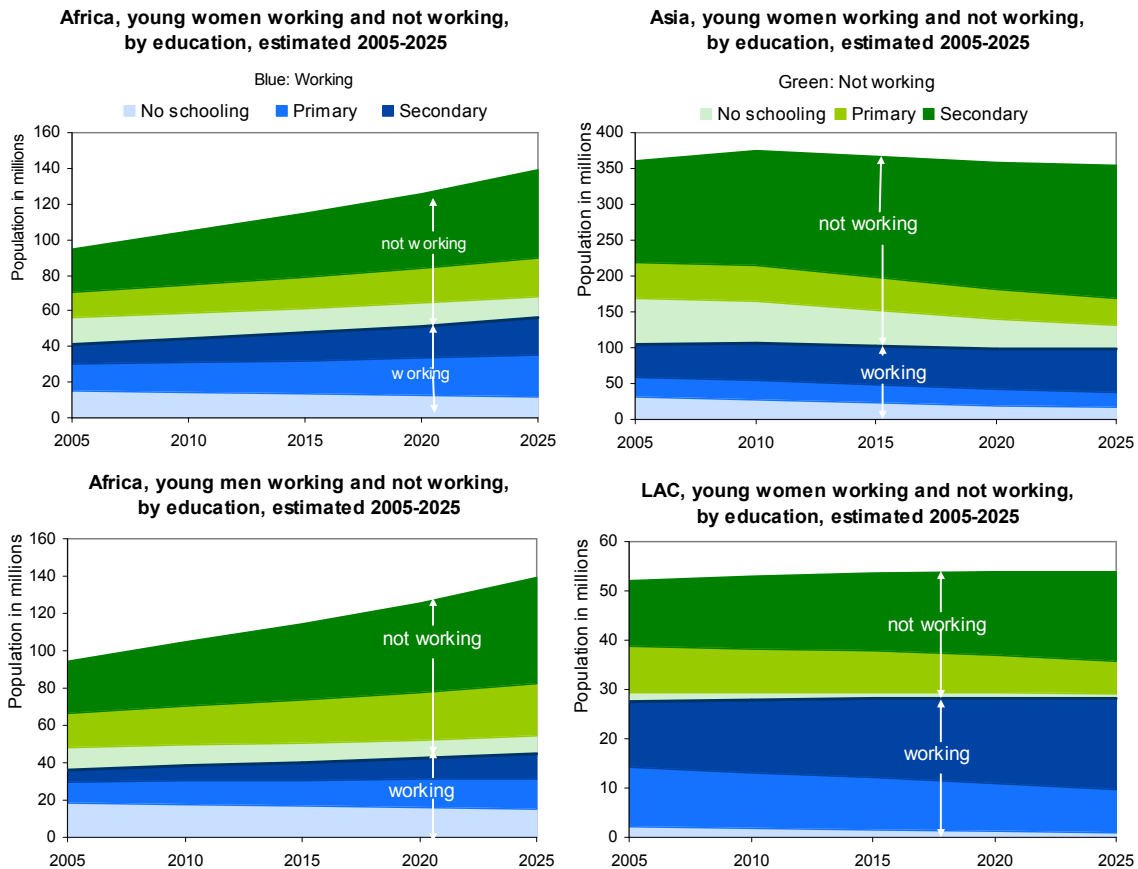
Data source: EPDC extractions from DHS surveys 2000-06. The percent working is lower than the employment rate because it is the ratio of those working to all persons in the age/education group; the employment rate includes only those in the labor force.

The transitions between more schooling, work, and inactivity for youth are complex. Using the incomplete evidence that is available, it appears that in the coming decades, as youth stay in school longer and become more educated, the proportion working will likely fall further. This is, in part, good news: youth are acquiring more skills and pressure on the labor market is reduced. On the other hand, groups with high inactivity rates (neither employed nor in school), such as young men in Africa with primary schooling, require urgent policy focus.

A first estimation of future employment patterns of youth is shown in the four graphs below. The graphs show the number of young women or men who are working by educational attainment (in blue shades differentiated by education attainment), and not working by education attainment (in green shades). The estimation is based on the simple assumption that employment rates by education are constant over time³⁹.

As seen in the human capital pyramids of section 7 and reflected in these graphs, a growing youth bulge is an African phenomenon; while in Asia and Latin America, the number of youth stabilizes. The total youth population in Africa is projected to increase by about 50% from 2005-25 according to the UN medium projection, but the working population might grow by only 30%. The proportions of not-working young women and men in 2025 will be high in all the regions shown, but highest for women in Asia (73%) and lowest for women in Latin America (48%). In all four graphs, the not-working highly educated youth is the group that expands most and many of them will still be in school.

Projections of youth working and not working in three global regions



Projections based on DHS data and UN medium population projections. Average from countries available.

10. The education and health nexus: interdependency

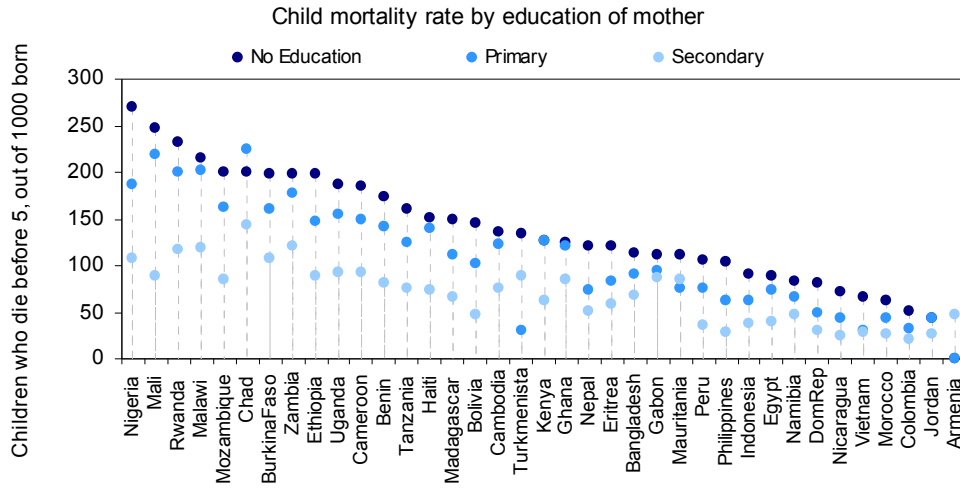
The interplay between education and health is widely acknowledged but less frequently integrated into policy and interventions. A look at the hard evidence should focus attention on this important connection.

Research shows that educated people can more readily understand the importance of clean water and sanitary facilities. Educated parents can act better on a doctor's advice and read instructions for the use of medicine. Children who are healthy and adequately fed can focus on their studies. Educated women marry later, have fewer children, and have longer intervals between births. Healthy and well-nourished children perform better in school. The accompanying graphs on the next page show some of these interdependencies.

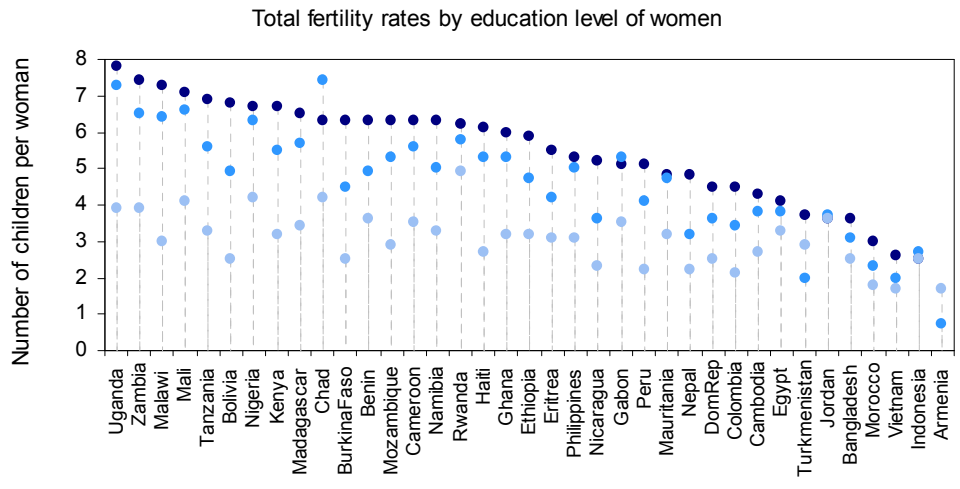
The top graph presents child mortality. It shows a child's mother's level of education and the likelihood that a child will die before his/her fifth birthday. The countries are arranged from highest to lowest overall under-5 mortality rate. The dots show the level of child mortality – dark blue dots for mothers with no schooling, blue dots for mothers with some primary schooling, and light blue dots for mothers with some secondary. The highest mortality rates are with mothers with no education. The greatest differentials in child mortality rates are in those countries with the highest mortality rates overall.

The middle graph on fertility shows that higher levels of education correlate with lower fertility levels for women – lower fertility rates drive lower population growth and so reduce demand on education and other resources. In countries with very high population growth, raising levels of education to reduce fertility may help these countries break out of the ever-growing pressure on too few resources. In low fertility countries, the issue plays out differently.

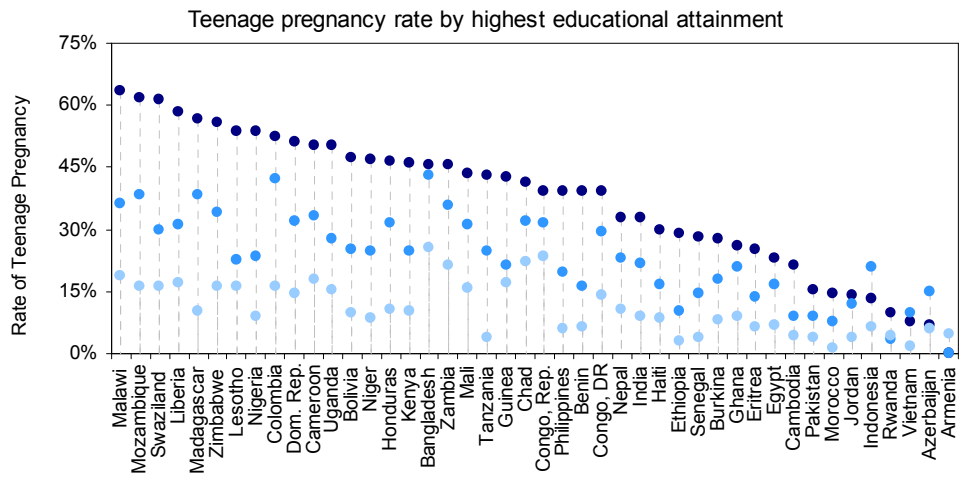
The third graph shows that the effect of education on teenage childbearing is particularly pronounced. The likelihood that a young teenager with secondary education will become pregnant in Malawi, Mozambique, Swaziland, Liberia, Madagascar, and Nigeria, for example, is more than three times lower than for young teenage woman with no schooling (DHS, 2008).



Data source: DHS StatCompiler



Data source: DHS StatCompiler



Data source: DHS StatCompiler

Appendix 1**Countries in each region**

| | |
|----------------------------|---|
| Asia | Afghanistan, American Samoa, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Fiji, French Polynesia, Guam, Hong Kong, China, India, Indonesia, Kazakhstan, Kiribati, Korea, Dem. Rep., Kyrgyzstan, Laos, Macao, China, Malaysia, Maldives, Marshall Islands, Micronesia, Myanmar, Nepal, New Caledonia, Northern Mariana Islands, Pakistan, Palau, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Sri Lanka, Taiwan, Tajikistan, Thailand, Timor-Leste, Tonga, Turkmenistan, Uzbekistan, Vanuatu, Vietnam. |
| Eastern Europe & Eurasia | Albania, Andorra, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Channel Islands, Croatia, Cyprus, Estonia, Faeroe Islands, Georgia, Greenland, Isle of Man, Kosovo, Latvia, Liechtenstein, Lithuania, Macedonia, Moldova, Monaco, Mongolia, Poland, Romania, Russian Federation, San Marino, Serbia, Serbia and Montenegro, Slovakia, Slovenia, Turkey, Ukraine. |
| Latin America & Caribbean | Antigua and Barbuda, Argentina, Aruba, Bahamas, Barbados, Belize, Bolivia, Brazil, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela, Virgin Islands (U.S.). |
| Middle East & North Africa | Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Palestinian Autonomous Territories, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, Yemen. |
| OECD | Australia, Austria, Belgium, Bermuda, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Rep., Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States. |
| Africa | Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Dem. Rep., Congo, Rep., Cote d'Ivoire, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, The, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mayotte, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe. |

Countries for which data was available for the human capital pyramids in section 7

| | |
|----------------------------|--|
| Asia | Afghanistan, Bangladesh, Cambodia, China, Hong Kong, China, India, Indonesia, Kazakhstan, Kyrgyzstan, Laos, Macao, China, Malaysia, Maldives, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Tajikistan, Thailand, Turkmenistan, Uzbekistan, Vietnam. |
| Eastern Europe & Eurasia | Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Estonia, Latvia, Lithuania, Macedonia, Moldova, Mongolia, Poland, Romania, Russian Federation, Slovakia, Slovenia, Turkey, Ukraine. |
| Latin America & Caribbean | Argentina, Bahamas, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay. |
| Middle East & North Africa | Bahrain, Egypt, Iran, Jordan, Malta, Morocco, Saudi Arabia, Syria. |
| OECD | Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea, Rep., Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, United Kingdom, United States. |
| Africa | Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo, Dem. Rep., Congo, Rep., Cote d'Ivoire, Eritrea, Ethiopia, Gabon, Gambia, The, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe. |

Appendix 2

There are various ways to measure the proportion of children participating in an education system, and specific terms are used to differentiate between methodologies.

Enrollment Rates are based on school records, measuring the number of children who are registered for school at a specific point during the school year as a proportion of all children of school age; these figures are generated by national ministries of education and compiled by the UNESCO Institute of Statistics (UIS).

Attendance Rates are based on census or survey data, counting children reported to be attending school as a proportion of all children of school age; many attendance rates are calculated using data from Demographic and Health Surveys (DHS).

Net Attendance/Enrollment Rate is the number of children attending/enrolled *and* of the correct age for school, as a proportion of all school-aged children.

Gross Attendance/Enrollment Rate is the number of children attending/enrolled, *regardless of age*, as a proportion of all school-aged children.

Educational Attainment Rate refers to the proportion of the population who reached (but may or may not have completed) a particular education level as their highest level of education.

Primary Entry Rate is the number of children in the first grade of primary as a proportion of the number of children who are of the correct age for the first grade of primary. It can be expressed as a Net or Gross proportion.

Primary/Secondary Completion Rate is the number of children in the last grade of primary/secondary as a proportion of the number of children who are of the correct age for that grade. It can be expressed as a Net or Gross proportion.

Labor Force Participation Rate is the proportion of the population either employed or seeking employment.

Youth are the population aged 15-24.

Appendix 3

Countries, Instruments, and years for survey data

| | | | | | |
|----------------------|--------|------|---------------------|--------|------|
| Afghanistan | MICS | 2003 | Kazakhstan | MICS | 2006 |
| Albania | MICS | 2005 | Kenya | DHS | 2003 |
| Angola | MICS | 2000 | Kyrgyz | MICS | 2006 |
| Argentina | Census | 2001 | Laos | MICS | 2006 |
| Armenia | DHS | 2005 | Lesotho | DHS | 2004 |
| Azerbaijan | MICS | 2000 | Macedonia | MICS | 2005 |
| Bangladesh | DHS | 2004 | Madagascar | DHS | 2004 |
| Belarus | MICS | 2005 | Malawi | DHS | 2004 |
| Belize | MICS | 2006 | Maldives | VPAS | 2004 |
| Benin | DHS | 2006 | Mali | DHS | 2006 |
| Bhutan | LSS | 2003 | Mauritania | DHS | 2001 |
| Bolivia | DHS | 2003 | Mauritius | Census | 2000 |
| Bosnia & Herzegovina | MICS | 2006 | Mexico | INEGI | 2000 |
| Botswana | AI | 2004 | Moldova | DHS | 2005 |
| Brazil | IBGE | 2000 | Mongolia | MICS | 2005 |
| Burkina Faso | DHS | 2003 | Montenegro | MICS | 2006 |
| Burundi | MICS | 2000 | Morocco | DHS | 2004 |
| Cambodia | DHS | 2005 | Mozambique | DHS | 2003 |
| Cameroon | DHS | 2004 | Myanmar | MICS | 2000 |
| Cape Verde | DRF | 2001 | Namibia | DHS | 2000 |
| Central African Rep. | MICS | 2006 | Nepal | DHS | 2006 |
| Chad | DHS | 2004 | Nicaragua | DHS | 2001 |
| Colombia | DHS | 2005 | Niger | DHS | 2006 |
| Comoros | MICS | 2000 | Nigeria | DHS | 2003 |
| Congo, Dem. Rep. | MICS | 2000 | Pakistan | HIS | 2001 |
| Congo, Rep. | DHS | 2005 | Panama | LSMS | 2003 |
| Costa Rica | Census | 2000 | Peru | DHS | 2005 |
| Cote d'Ivoire | MICS | 2006 | Philippines | DHS | 2003 |
| Cuba | MICS | 2006 | Rwanda | DHS | 2005 |
| Djibouti | MICS | 2006 | Sao Tome & Principe | MICS | 2000 |
| Dominican Republic | DHS | 2007 | Senegal | DHS | 2005 |
| Egypt | DHS | 2005 | Serbia | MICS | 2005 |
| El Salvador | EHPM | 2004 | Sierra Leone | MICS | 2005 |
| Eritrea | DHS | 2002 | Somalia | MICS | 2006 |
| Ethiopia | DHS | 2005 | South Africa | GHS | 2005 |
| Gabon | QUIBB | 2005 | Sri Lanka | SLIS | 2000 |
| Gambia | MICS | 2006 | Suriname | MICS | 2000 |
| Georgia | MICS | 2005 | Swaziland | DHS | 2006 |
| Ghana | DHS | 2003 | Syria | MICS | 2006 |
| Guatemala | LSMS | 2000 | Tajikistan | MICS | 2005 |
| Guinea | DHS | 2005 | Tanzania | DHS | 2004 |
| Guinea Bissau | MICS | 2006 | Thailand | MICS | 2006 |
| Guyana | DHS | 2005 | Togo | MICS | 2006 |
| Haiti | DHS | 2005 | Uganda | DHS | 2006 |

| | | | | | |
|-----------|------|------|------------|------|------|
| Honduras | DHS | 2006 | Ukraine | MICS | 2005 |
| India | DHS | 2006 | Uzbekistan | MICS | 2006 |
| Indonesia | DHS | 2003 | Vietnam | DHS | 2005 |
| Iraq | MICS | 2006 | Yemen | MICS | 2006 |
| Jamaica | MICS | 2005 | Zambia | DHS | 2002 |
| Jordan | DHS | 2002 | Zimbabwe | DHS | 2006 |

AIS AIDS Impact Survey

Census Censo de Poblacion y Viviendas (Cuba)
Censo Nacional de Poblacion, Hogares y Viviendas (Argentina)
Censos Nacionales de Poblacion y Vivienda (Costa Rica)
Housing and Population Census (Mauritius)
Population and Housing Census (Belize, Mongolia)

DGEC Direccion General de Estadistica y Censos

DHS Demographic and Health Surveys

GHS General Household Survey

HIS Household Integrated Survey

IBGE Instituto Brasileiro de Geografia e Estatística

INDEC Instituto Nacional de Estadística y Censos

INEGI Instituto Nacional de Estadística Geografía e Informática

SLIS Sri Lanka Integrated Survey

LSMS Living Standards Measurement Study

MICS Multiple Indicator Cluster Survey

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Endnotes

¹ An excellent overview of the benefits of early education is given in the *EFA Global Monitoring Report 2007 "Strong Foundations"* (UNESCO, 2006).

² These estimates are based on UIS data provided to the EPDC on official age of school entrants for 114 countries in 2006; and on pupils by age data from EPDC extractions from 35 post-2000 DHS surveys. The EPDC is grateful to the UIS for the special data.

³ UIS data from 2006 show that the (unweighted) average percentage of underage school entrants is 14% where the school entry age is 5; only 9% where the school entry age is 6; and 23% where school entry age is 7.

⁴ For a more extensive discussion of underage repetition, see Sylla et al., 2008 or EPDC, 2008.

⁵ Data compiled by the EPDC from national household surveys. For a complete list of the surveys, as well as an explanation of the calculation method and assumptions, see the Appendix. The survival rates for individual countries differ somewhat from survival based on UIS administrative data, but the overall picture is the same.

⁶ The official text of the declaration is available at http://www.unesco.org/education/efa/ed_for_all/dakfram_eng.shtml.

⁷ There are different ways to measure UPE and the trends to the future. UNESCO's Global Monitoring Report for EFA uses the net primary enrolment rate (NER) and trends in NER from 1999 based on UIS data and the EPDC ProjecTrends model. Another way to calculate trends is based on the actual flows of pupils through school. In this report, the EPDC has given preference to a third measure, which we believe is more direct, namely the percent primary completion using household survey data – this is the ratio of persons 15-19 with complete primary education/all persons 15-19 – and trends based on age-specific percent primary completion. The method is described in the EPDC's *Windows to the Future* report (Wils, 2007). The EPDC has used all three methods for international series of UPE projections and *the general insights presented here are the same regardless of the method used*.

⁸ Using NER as the measure of UPE gives a somewhat more positive result. If 1999-2006 growth trends for NER persist to 2015, only 38 of the 88 projected countries that had not achieved universal NER would have a rate below 80%, and 55 countries below 90%.

⁹ In 87 out of 166 countries with UIS data on secondary enrolment in 2005.

¹⁰ Hausman R, L. Tyson, S. Sahidi, 2008.

¹¹ UIS/UNICEF, 2005.

¹² ILO data from www.ilo.org accessed October 23, 2008, and World Bank, 2006 publication.

¹³ Filmer, 1999a, 1999b, 2001, 2005, and 2006; UIS/UNESCO, 2005.

¹⁴ Based on weighted sample of attendance rates in 47 developing country household surveys 2000-06. Data is available through *Search the Data* at <http://epdc.org/search.aspx>.

¹⁵ Based on weighted sample of attendance rates in 78 developing country household surveys 2000-06. Data is available through *Search the Data* at <http://epdc.org/search.aspx>.

¹⁶ Based on weighted sample of attendance rates in 23 developing country household surveys 2000-06. Data is available through *Search the Data* at <http://epdc.org/search.aspx>.

¹⁷ Based on weighted sample of attendance rates in 70 developing country household surveys 2000-06. Data is available through *Search the Data* at <http://epdc.org/search.aspx>.

¹⁸ The evidence is based on a survey of 47 countries in the EPDC's background paper and other studies included in GMR 2008.

¹⁹ For more information on urban/rural trends see GMR 2008 (UNESCO, 2007) and the EPDC background paper; for trends in wealth differentials see GMR 2009 (UNESCO, 2008) and the EPDC background paper.

²⁰ Data are from MICS household surveys in 28 countries in 2000.

²¹ Educational attainment is defined as the highest level of education that a person has received, regardless of whether they are still attending school, or have left the education system.

²² See UN Population Division data for total fertility rates from 1950 to the present.

²³ Organization of Economic Cooperation and Development.

²⁴ EdStats Data Query accessed November 24, 2008.

²⁵ Projections using the EPDC ProEnrol model. The data used for initial pupils, intake, repetition, promotion, and dropout rates are from the UIS, and assumptions for the future are that intake will increase according to the historical trend, but repetition, promotion, and dropout will remain constant.

²⁶ In a 2006 report on future teacher needs, the UIS (2006) made the assumption that if the initial pupil-teacher ratio was less than 40 it would remain constant, but if it was greater, it would decline to 40 by 2015. In these updated projections, the EPDC has made the same assumption.

²⁷ Bennel and Akyeampong, 2007; Sinyolo, 2007.

²⁸ UIS, 2006.

²⁹ Projections by EPDC based on trend projections of secondary GER multiplied by the projected secondary school age population, provided by the UN POPIN division. The trend projections for GER are available under *Search the Projections* at <http://epdc.org/search.aspx?ST=2> and from World Bank EdStats. Other authors who have projected secondary pupils and teacher needs for selected countries include Moore et al., 2008.

³⁰ An estimation for the percentage of trained teachers in Pakistan was made – equal to the percentage of trained primary teachers – based on the observation that there is a very high correlation between the proportion of trained primary and trained secondary teachers, in those countries where both data points are available. For East Asia and the Pacific, China, the biggest country does not provide data on trained teachers to UIS; for South Asia, both Pakistan and India data on trained teachers are missing.

³¹ The projections for secondary pupils are made based on projections of secondary GER trends, multiplied by the school age population. Projections for teachers is based on assumption that pupil teacher ratio – constant levels or a decline to 40 by 2015.

³² The World Development Report 2007 (World Bank, 2006) on youth describes this shift in more detail.

³³ International Labor Organization.

³⁴ *Global Employment Trends for Youth* (International Labour Organization, 2006).

³⁵ O'Higgins, 2003.

³⁶ The percentage who works is simply the ratio of persons with work/population of certain age or age group. It is not calculated with consideration of the labor force participation rate, and it should not be confused with the employment rate, which is the ratio of person with work/persons in the labor force. DHS surveys, the only accessible source of information on work rates by education levels, only inquire information on employment, not on labor force participation. The data were extracted by the EPDC from 37 post 2000 DHS surveys.

³⁷ The definition of working includes paid employment, self-employment and agricultural work, but not housework.

³⁸ School attendance data for ages 15-24 extracted from 37 post-2000 DHS surveys by EPDC.

³⁹ The population by education data is from EPDC's projections. There are enough data to make the estimation for young women in Africa, Asia, and Latin America/Caribbean (LAC) but only in Africa for men (because the surveys used do not always query men).