

## **Gender Gaps in Educational Attainment in Less Developed Countries**

Monica J. Grant\*  
Population Studies Center  
University of Pennsylvania  
3718 Locust Walk, 239 McNeil Bldg  
Philadelphia, PA 19104  
[grantm@sas.upenn.edu](mailto:grantm@sas.upenn.edu)

Jere R. Behrman  
Population Studies Center  
University of Pennsylvania  
3718 Locust Walk, 239 McNeil Bldg  
Philadelphia, PA 19104  
[jbehrman@econ.upenn.edu](mailto:jbehrman@econ.upenn.edu)

## **Introduction**

Conventional wisdom is that gender gaps in schooling discriminating against females in developing countries generally are large, though probably declining. Presumably in part because of this perception, for example, the Millennium Development Goals explicitly emphasize reducing schooling gender gaps that disadvantage girls. In this paper we re-examine recent gender gaps in schooling in the developing world and come to a more nuanced characterization of their nature, which suggests that the developing countries are becoming more like the developed countries, with gender gaps that increasingly favor, rather than discriminate against, females. Our preliminary results suggest that observed gender gaps that favor boys are more closely related to the greater likelihood that boys relative to girls will ever be enrolled in school than to gender differences in grade progression and school dropout.

Analyses that attempt to track progress toward increasing schooling attainment and reducing gender gaps typically rely on several measures, most commonly the primary completion rate of children slightly older than primary school age (Bruns et al. 2003; Hewett and Lloyd 2005) or the net enrollment ratio, which reflects the proportion of primary-school aged children who are currently enrolled in primary school (Bloom 2007). While these indicators are vital for tracking schooling progress, they reveal little about the process of schooling attainment and the emergence of gender gaps over the education life course. In response to this measurement gap, we propose to examine gender gaps in schooling attainment as they emerge across the education life course.

Schooling attainment is a cumulative process, in which individuals move sequentially from grade to grade and progress from the primary to secondary level. However, progress through school is less standardized and structured in many less developed countries. Many

children are not enrolled in the appropriate grade for their age, had they entered school on time and progressed through school grade-by-grade without delays. Some of these points of potential disruption are largely age-graded, such as the ideal age for entering school and the age at the onset of puberty for girls, whereas others can occur at any point during a child's schooling experience, such as grade repetition or a temporary withdrawal from school. Depending on the regional context, these disruptions may be highly gendered. Over the education life course, the experience of these disruptions shapes a child's trajectory through school and influences the likelihood of eventually completing primary and higher levels of school.

In this paper, we propose to examine how the gender gaps in current school enrollment and grade completion emerge across the education life course from age 6 to 18. Furthermore, we will examine how these age-specific measures have changed over time, comparing the periods 1990-1999 and 2000-2005. Although we are not directly measuring the prevalence of schooling disruptions, gender differences in schooling progress reflect the differential experience of these events by boys and girls. Our initial analyses indicate that although males are more likely than females to be currently enrolled in school in the most recent time period in all regions except Latin America and Southeast Asia, girls who have ever attended school have significantly better schooling progress than boys who have ever attended school (see Tables 1 and 2). This phenomenon of female schooling advantage in less developed countries, conditional on ever attending school, has not been acknowledged in the literature. We plan to explore the distribution of this phenomenon and examine the apparent paradox of female disadvantage in primary school completion rates, as currently reported by the Millennium Project Task Force on Education and Gender Equality (Birdsall et al. 2005).

## **Data and Methods**

In this analysis, we use data from the Demographic and Health Surveys (DHS) to evaluate changes in the gender gap across the education life course across two time periods, 1990-1999 and 2000-2005. The DHS is a representative national survey of reproductive-aged women (age 15-49). Although the survey focuses on sexual and reproductive health, fertility, and child health issues, the household roster collects extensive information about all current household residents. In particular, the survey collects information on the current school enrollment status and most recent grade completed for all resident children. These schooling data have been used elsewhere to examine cross-national trends in educational attainment (NRC-IOM 2005; Hewett and Lloyd 2005).

At the present time, data from 34 countries are available, such that at least one survey was collected during each of these time periods. In the event that more than one survey was collected during a time period, we use the earliest survey collected during the 1990-1999 period and the most recent survey collected during the 2000-2005 period. Across the set of countries in this analysis, an average 9.8 years elapsed between the earliest and most recent survey.

Although the Demographic and Health Surveys have incomplete coverage of some world regions, the greatest representation is found in Sub-Saharan Africa, the region where schooling attainment remains the lowest and the average gender gaps are the widest (Bloom 2007).

Our three indicators, the percent of children currently enrolled in school, mean grades completed among all children (preliminary results not shown here), and mean grades completed among children who have ever attended school, are presented for four age groups in each region: 6-9 year olds, 10-12 year olds, 13-15 year olds, and 16-18 year olds. These groups are more discrete than age groupings intended to match directly with primary and secondary school aged

children (e.g. Wils and Goujon 1998), and allow one to view the process of schooling attainment for a synthetic cohort of children. When the gender gap for each of these indicators is compared across the two periods, evidence for an emerging female advantage in schooling attainment seems to surface, despite the relatively higher enrollment rates in many cases for males. This suggests a more nuanced understanding of evolving gender gaps in schooling attainment than is often suggested (e.g., as noted above, in the MDGs), with males increasingly falling behind females in schooling attainment, as in the developed countries. The paper will document further the nature of evolving gender gaps in schooling enrollment and attainment over time and across regions of the developing world through regression analysis of the combined DHSs for the 34 countries that will permit identifying the magnitude and the significance of changes over time and across regions.

## References

- Birdsall, Barbara, Ruth Levine and Amina Ibrahim. (2005) *Toward universal primary education: Investments, incentives, and institutions*. UN Millennium Project, Task Force on Education and Gender Equality. London: Earthscan.
- Bloom, David E. (2007) Measuring Global Educational Progress. In: Joel E. Cohen, David E. Bloom, and Martin B. Malin (eds.), *Education for All: A Global Agenda*. Cambridge, MA: American Academy of Arts and Sciences. Pp. 33-120.
- Bruns, Barbara, Alain Mingat and Ramahatra Rahotomala. (2003) *Achieving Universal Primary Education by 2015: A Chance for Every Child*. Washington, D.C.: World Bank.
- Hewett, Paul C. and Cynthia B. Lloyd (2005) Progress Toward Education for All: Trends and Current Challenges in Sub-Saharan Africa. In: Cynthia B. Lloyd, Jere R. Behrman, Nelly P. Stromquist, and Barney Cohen (eds.), *The Changing Transition to Adulthood in Developing Countries: Selected Studies*. Washington, DC: National Academies Press. Pp. 84-117.
- National Research Council/Institute of Medicine (NRC-IOM). (2005) *Growing up Global: The Transition to Adulthood in Less Developed Countries*. Cynthia B. Lloyd (Ed.). Washington, D.C.: National Academies Press.
- Wils, Annababette and Anne Goujon. (1998) Diffusion of Education in Six World Regions, 1960-90. *Population and Development Review*. 24(2): 357-368.

**Table 1. Current school enrollment rates, by age, sex, region and period.**

Region and Period	6-9		10-12		13-15		16-18	
	Male	Female	Male	Female	Male	Female	Male	Female
South Asia								
1990-99	74.2	62.6	78.3	62.6	49.3	35.4	6.1	3.4
2000-05	84.9	80.0	84.3	75.1	70.0	56.7	32.6	22.5
Latin America								
1990-99	75.7	77.6	86.1	84.4	76.6	74.7	54.6	55.7
2000-05	85.9	87.2	88.1	89.3	80.9	81.6	57.6	55.9
North Africa/Middle East								
1990-99	74.1	65.8	82.4	69.8	64.9	50.8	47.2	33.2
2000-05	80.7	77.5	90.3	80.6	72.6	60.3	48.3	38.0
Southeast Asia								
1990-99	69.1	71.5	91.9	92.4	73.1	67.3	44.5	38.7
2000-05	88.3	88.6	94.7	95.6	78.7	80.3	50.5	48.8
South/East Africa								
1990-99	47.4	47.8	76.5	75.5	71.8	63.2	44.9	27.0
2000-05	68.1	70.4	86.7	86.6	79.7	76.0	53.7	38.2
West/Central Africa								
1990-99	49.7	44.6	65.3	53.9	56.4	45.3	39.8	26.4
2000-05	59.6	54.0	73.8	65.2	69.9	62.0	59.1	40.3

Source: Demographic and Health Surveys

Note: Data are population-weighted averages for each region.

**Table 2. Mean grades attained among children who have ever attended school, by age, sex, region, and period.**

Region and Period	6-9		10-12		13-15		16-18	
	Male	Female	Male	Female	Male	Female	Male	Female
South Asia								
1990-99	1.9	1.9	4.1	4.1	6.4	6.4	8.1	7.8
2000-05	1.4	1.4	3.9	3.9	6.3	6.4	7.9	7.8
Latin America								
1990-99	1.4	1.5	3.4	3.6	5.2	5.4	6.9	7.2
2000-05	1.7	1.8	4.1	4.2	6.2	6.6	8.1	8.6
North Africa/Middle East								
1990-99	1.4	1.5	4.3	4.3	6.5	6.4	8.0	7.7
2000-05	1.5	1.5	4.3	4.3	6.5	6.5	8.3	8.1
Southeast Asia								
1990-99	1.6	1.7	4.1	4.3	6.4	6.6	8.0	8.0
2000-05	1.7	1.7	4.3	4.5	6.6	6.9	8.3	8.6
South/East Africa								
1990-99	0.9	1.0	2.4	2.5	4.0	4.3	5.5	5.5
2000-05	1.1	1.1	2.6	2.8	4.2	4.6	5.9	6.2
West/Central Africa								
1990-99	1.3	1.3	3.3	3.3	5.2	5.2	6.9	6.7
2000-05	1.3	1.3	3.2	3.2	5.3	5.4	7.4	7.4

Source: Demographic and Health Surveys

Note: Data are population-weighted averages for each region.