



# MEASURING GENDER INEQUALITY IN EDUCATION IN SOUTH ASIA

Elaine Unterhalter



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# MEASURING GENDER INEQUALITY IN EDUCATION IN SOUTH ASIA

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## SERIES FOREWORD

There is a growing sense of momentum around education in South Asia. Governments are engaged and a lot has been done. The Millennium Development Goals have added an additional spur to action as indeed have greater awareness on gender disparity and the need for educated workers. There is though a long way to go if the rights of all children are to be realised.

Providing access to education is only part of the story. Once children are enrolled and attending, the quality of their education must make it a worthwhile experience. The special needs of girls in the social and cultural context of South Asia call for special measures, as do the needs of all children in situations of conflict and emergency. South Asia has many rich, positive examples of success in advancing basic education. It is important that these are shared and built on if there is to be an overall improvement throughout the region.

This series of papers aimed at promoting better education in South Asia grew out of collaboration between the UNICEF Regional Office for South Asia and the newly formed UN Girls' Education Initiative, and had its genesis at a Regional Meeting on Accelerating Girls' Education in South Asia in February 2005.

Essentially the series is intended to be a forum that allows debate, exchange of ideas and to break new ground. It will aim to capture the momentum and extol good practice to all engaged in educational policy and implementation.

The series does not seek to represent a specific viewpoint, but rather is intended to enable specialist contributors to present issues in greater depth and breadth than is often the case in official documents.

Initially the series will focus on girls' education but it is hoped that eventually it will broaden into a platform for more general education issues related to South Asia, with a particular emphasis on social inclusion. Contributions and feedback are invited from academics and practitioners from throughout the South Asia region and beyond. The series editors are particularly interested in submissions which offer new ideas and strategies that can assist those needing answers, and which can add impetus to the ongoing efforts in the region to provide quality education for all.

**Come, join the debate!**

## ACKNOWLEDGEMENTS

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Thanks are due to Joseph Crawford and Jacob Steel for help in developing the formula for calculating the GEEI and to Tristan McCowan for research assistance.

## SUMMARY

This paper assesses current measures for gender equality in education. While gender disaggregating enrolment and progression data has been an important step forward, measures that are concerned only with the presence or absence of girls in school provide little insight into aspects of gender inequalities within schools or the gendered environment beyond school. Nevertheless, such measures do generally show improvement for nearly all the countries in South Asia for which there is data.

Current measures of education quality underplay the significance of gender equality as an aspect of quality. In reviewing economic and gender indicators together with education indicators for South Asia, no consistent pattern emerges.

The paper presents the Gender Equality in Education Index (GEEI) – a measure developed to draw on existing data sources to consider gender equality in education in more dimensions than simply enrolments. The GEEI for the countries in South Asia for which there is data shows that gains were made over the 1990s in all countries except Pakistan. However, to reach a GEEI score consonant with achieving the gender and education MDGs will require sustaining the huge mobilization of the previous decade and in many countries increasing this. The assessment of GEEI gives some indication of the size of the task and the levels of mobilization needed.

## INTRODUCTION

Millennium Development Goal 3 for gender equality and the empowerment of women is the goal that was set with the earliest date for achievement – 2005. The thinking behind this was that the persistence of gender inequalities would undermine all the other Millennium Development Goals (MDGs). Gender – unlike class, race, ethnicity or disability – is one form of social division common to all societies across the world. Addressing gender inequality is an indicator of commitment to the principles that underlie all the MDGs, that is that each and every person on the globe is the subject and object of moral concern for the whole population and that we accord each other reciprocal respect so that each of us may live a life of dignity, without suffering or harm, particularly with regard to poverty, hunger, ill health, lack of education,

discrimination, or the consequences of environmental degradation.

The target associated with MDG3 was an end to gender disparities in primary and secondary education. We know now that this target has been missed in 94 out of 149 countries for which data is available (UNESCO, 2005). This is a matter of grave concern. It is shameful in a world where huge wealth is amassed, where enormous talents exist, together with great eagerness for education, that in five years we have not been able to enrol equal numbers of girls and boys in school and ensure that equal numbers pass just five grades. If we miss the target for this first MDG are we not calling into question the whole project? I fervently hope we are not. I trust that the fact that we have missed the first MDG is a wake-up call to us all

to think better, discuss deeper, and put the insights we distil into action.

This paper analyses the progress that has been made in relation to MDG3 and gives some pointers as to what processes have been associated with that progress. It also shows how much further countries in South Asia need to go in order to fulfil the education aspirations associated with MDG3 by 2015. Reflection on these patterns indicates where we need to allocate resources and how we can use the global failure in relation to the first MDG to galvanize specific actions to help achieve all the other seven.

Developing an understanding of how to improve gender equality in education is not a simple matter. One of the many challenges that it poses is the nature of the information base. Qualitative work has provided insights into how social

relations inside and outside schools shape gender inequalities and can contribute to change; but generally this work is based on small-scale, in-depth research. Qualitative work can deepen knowledge about the nature of gender inequalities, but it cannot provide an overview of their extent, or an indication of where additional resources to address their consequences would best be deployed. For this purpose, quantitative work is needed – but there are major problems with the methods by which gender inequality in education is currently measured. This paper critically reviews the existing measures of gender equality in education used by international agencies and governments. It goes on to propose alternative forms of measurement which seem better able to capture the aspirations of Education for All and the understanding that gender equality requires forms of counting that themselves go beyond mere statistics about access.

## MEASURES OF GENDER EQUALITY IN SCHOOLING

### Three Current Measures

There are currently three measures used for assessing gender equality in school. Enrolment rates are assessed through gender-disaggregated gross and net enrolment rates. A more complex measure that seeks to measure gender parity, that is whether or not there are equal numbers of boys and girls at all levels of the education system, is the gender related EFA index (GEI). A third approach is to look at gender-disaggregated data on retention and progression.

### Gross and Net Enrolment Ratios (GER and NER)

The mobilization of resources for Education for All (EFA) after the Jomtien conference in 1990, and the follow-up meeting at Dakar in 2000, resulted in

more punctilious collection of gender-disaggregated data on primary gross enrolment ratios (GER) and net enrolment ratios (NER). GER is the number of children enrolled in school, expressed as a proportion of the children of a specific age cohort (say 5–11) who should be enrolled in school. GER can sometimes be more than 100 per cent if there are large numbers of under-age and over-age pupils in school. NER is the number of children in the appropriate age group enrolled in school, expressed as a proportion of the official age group required to be in school. GER and NER, even when disaggregated by gender, only give us a picture of the number of children on the school register. They can tell us nothing about whether children attend regularly, once registered; whether they complete grades successfully; or whether passing a grade

means that children have acquired knowledge that they can use outside a school context. In addition, because in many countries children's births are not registered, NER is often based on estimations.

Generally GER and NER data are based on the Education Management Information System (EMIS) of education ministries, and then passed to the UNESCO Institute for Statistics for the compilation of international datasets. EMIS is only as good as the relations of trust, truthfulness and accuracy that underpin that system. In some contexts local officials do not know the reasons why they collect data for EMIS. They may have difficulties in reaching areas that are socially or geographically distant to collect information; they may believe that underestimating or overestimating children on the school register may bring additional facilities to a locality. Carr-Hill *et al.* (1999) emphasize the fragility of the data on which many national and international conclusions are based. When participatory activities are held in villages to identify children who are not at school, more robust data is assembled. However, there are difficulties in translating local mobilizing actions into official data on GER and NER, although in some countries this form of micro-planning is used by governments as well as NGOs.

Throughout the 1990s gender-

disaggregated GER and NER in many countries showed a gap between girls' and boys' levels of enrolment. This gender gap came to be seen as a major source of concern, demonstrating that in many countries fewer girls than boys were enrolled in primary and secondary schools (although it should be noted that there can be gender parity, that is equal proportions of boys and girls in school, when there is low GER or NER). So great was the concern with reaching gender parity – that is, equal numbers of girls and boys in school – that this became the chief indicator for the Millennium Development Goal 3 on the empowerment of women (Millennium Commission, 2000).

What changes in girls' NER have been evident in South Asia since the early 1990s? Table 1 lists countries for which we have data for 1990 and 2001. There is, however, some debate about how accurate the official data for Pakistan and Afghanistan is. The Afghanistan data reflects the situation in 2003 when there was a huge drive to enrol girls in school. The extent to which this has been sustained is the matter of critical review (Beyond Access, 2006) Unfortunately there is not a full set of data for Maldives for this period.

The table shows that in three countries in the region by around 2000 nearly 90 per cent or more girls of the appropriate age were in primary school. In another four between two-thirds and three-

**TABLE 1 Percentage gain in girls' NER, South Asia: c.1990–c.2003**

Country	Girls' NER c.1990	Girls' NER c.2001	Percentage Improvement of Girls' NER c.1990–c.2001
Sri Lanka	90	100	11%
Bangladesh	66	87.5	33%
India	61	75.7	24%
Nepal	41	66	61%
Bhutan	50	60	20%
Pakistan	62	50	-19.5%
Maldives	n.a.	92	
Afghanistan	27	67*	148%

Source: Derived from Unterhalter, Rajagopalan and Challender, 2005; UNDP, 2004; Maldives, 2000; World Bank, 2005

\* 2003 figure

quarters of all girls in this age group were in school, indicating considerable difficulties in enrolling all girls in school. In Pakistan there appeared to have been a fall in NER with only 50 per cent of girls in the age group enrolled.

Table 1 also shows that through the 1990s all countries in the region for which there is data, with the exception of Pakistan, made percentage gains in the levels of girls' enrolment. For some countries (Nepal and Afghanistan) despite the decade being marked by conflict, these gains were enormous. For India and Bangladesh the percentage gain was sizeable. Only in Pakistan is there a large percentage fall. From the data held by UN bodies we cannot determine whether this is because of incomplete data or data that has been wrongly processed. With the exception of Pakistan, using only girls' NER the picture for the region would be one of

steady growth and reasonable optimism. However, the problems with NER outlined above entail some doubts about whether this is an adequate enough picture of levels of gender equality in education.

#### **Gender-related EFA Index (GEI)**

In contrast to the measurement of primary enrolment through gender-disaggregated GER and NER, the gender-related EFA index (GEI), developed by UNESCO for use in its Global Monitoring Reports, is an attempt to indicate the extent to which boys and girls are equally present at different levels in the education system (primary, secondary and adult education). However, a country can have a GEI of 1, indicating complete equality between boys and girls, but still have low rates of access, retention and achievement for girls and boys. For example, in 2003 Myanmar had a GEI of 0.949, with only

84 per cent primary NER for girls, and Kuwait had a GEI of 0.966 with a primary NER of 83 per cent for girls (UNESCO, 2003: 288-9). Gender parity on its own cannot tell us much about gender equality in relation to accessing education, progressing through school, and living in a gender-equitable society after school.

In Table 2 the improvements in GEI for countries in South Asia are presented. Unfortunately no calculations were available for Bhutan, Maldives and Afghanistan.

The table shows that in all the countries of the region there has been an improvement in GEI. In Sri Lanka there is gender parity at all levels, with a small bias against boys. The other countries of the region for which there is data had roughly similar GEI levels

around 2001, and had improved at more or less the same level, although Nepal had made enormous gains from a much lower base in 1990.

How can we explain the increasing level of GEI in Pakistan and the falling level of NER (assuming the figures in Table 1 are roughly accurate)? It may be the case that richer families in Pakistan have supported their daughters into secondary school and this has maintained reasonable levels of adult education over the decade resulting in gender parity at all levels. Thus we see a rise in GEI over the period in Pakistan happening at the same time as poorer children have been denied access to school. The increase may also indicate programmes to bring certain girls into secondary school and set up adult literacy without concomitant attention to the expansion of provision for girls in

**TABLE 2 Percentage gain in GEI, South Asia: c.1990–c.2001**

Country	GEI c.1990	GEI c.2001	Percentage Improvement of GEI c.1990–c.2001
Nepal	0.42	0.68	62%
Bangladesh	0.62	0.76	23%
Pakistan	0.52	0.645	23%
India	0.64	0.74	16%
Sri Lanka	0.98	0.99	3%
Bhutan, Maldives, Afghanistan	n.d.	n.d.	

The shaded figure denotes gender disparity at the expense of boys/men; that is, in Sri Lanka there are more girls than boys in school

For the purposes of this analysis, movement towards disparity in favour of girls/women is included in the calculation for improvement

Sources: UNESCO, 2004, 1995; UNICEF, 1994

**TABLE 3 Girls' (and boys') primary school attendance and progression over five years, South Asia: c.1990-c.2001**

Country	Girls' (boys') net primary school attendance 1992-2002 %	Girls (boys) completing five years primary school c.2001 %
Afghanistan	14 (58)	n.a.
Bangladesh	78 (77)	68 (63)
Bhutan	n.a.	93 (89)
India	73 (79)	63 (60)
Maldives	n.a.	n.a.
Nepal	66 (79)	81 (75)
Pakistan	51 (62)	n.a.
Sri Lanka	n.a.	n.a.

Source: UNICEF, 2004; UNESCO, 2004

primary school. There may also be some strong regional variations resulting in this unevenness.

This raises questions about the aggregated data at country level. Increases in GEI may reflect advances in certain regions and not others. All that is required for a high gender parity score is equal numbers of enrolments of girls and boys, not a high overall enrolment as a proportion of the age group which NER measures.

The case of Pakistan points to how important it is to not rely on a single measure, be it NER or GEI, in order to measure gender equality in schooling.

### Attendance and progression

A third measure of gender equality in

education has focused not just on enrolments, but on attendance and progression. From the late 1990s, gender-disaggregated data has become available on progression through school (that is, the completion of primary and secondary school), with data often available by district. This gives richer insight than mere enrolment figures can provide on whether or not an education system is delivering gender equity in progression. The picture for South Asia is presented in Table 3.

Table 3 shows a different pattern again. While for all the countries for which there is data the percentage of girls who attend school regularly is much lower than the percentage of boys, generally girls who remain in school pass 5 grades of primary school at a slightly higher rate than boys.

In all these three measures of enrolment, parity and progression, 'gender' is viewed as merely the numbers of boys and girls entering and progressing through a school system. These forms of measurement give no indication of gendered relations of power in schooling, which may compromise the numbers who progress. This approach to measuring gender does not provide information on the ways in which gender equality or inequality links with other dimensions of human flourishing, for example health, access to decision making, the labour market, or income.

In fact, these figures can give an impression quite at odds with the literature based on qualitative research in a country. In South Africa, for example, quantitative data shows high levels of gender equality in access and progression, but qualitative data highlights danger at school from sexual harassment and violence, girls' anxiety about their futures, and considerable discrimination against many women teachers (Unterhalter, 2005a).

### UNESCO Education Development Index (EDI)

The UNESCO Global Monitoring Report tried to develop a definition of quality in schools, linking it analytically with equality. Koïchiro Matsuura, Director-General of UNESCO, in his Foreword to the 2005 volume, commented that 'Quality must pass the test of equity: an education system characterized by discrimination against any particular group is not fulfilling its mission' (UNESCO, 2004).

However, the 2004 Report itself pays little attention to gender dimensions of quality and does not suggest what the 'test of equity' might be. The Global Monitoring Report focuses instead on four proxy measures for quality, only one

of which has data with a gender dimension. The measures used are pupil:teacher ratios, teachers' qualifications, expenditure on education, and learning achievements. Only this last has been measured with respect to girls and boys. The failure of the GMR to link quality substantively with equity is a problem of both measurement and analysis. The assumption of the report is that girls and boys enter schools which are unmarked by gender with regard to quality. The gender-neutral ways in which quality has been assessed offer no opportunity to understand the similar or different achievements of children.

In an attempt to bring together information on access, quality, and the gender gap, UNESCO developed the Education Development Index (EDI). The

EDI constituents and related indicators are:

- **universal primary education:** net enrolment ratio;
- **adult literacy:** literacy rate of the group aged 15 and over;
- **gender:** gender-specific EFA index (GEI, the arithmetical mean of the Gender Parity Indices for the primary and secondary gross enrolment ratios and the adult literacy rate);
- **progression:** survival rate to grade 5.

The problem with the EDI with regard to gender is threefold. Firstly its main gender component, the GEI, is concerned with parity, which, as discussed above, gives insufficient insight into context. Men and women, or girls and boys, may have gender parity in literacy or access to schooling but have low levels of participation.

Secondly the EDI does not take account of gender in children's survival in schooling. It primarily considers gender in relation to access and not achievement.

Thirdly the EDI weights each of its four components equally. Thus enrolments, and gender parity in enrolments, are weighted equally with achievements. However, research in many countries shows that enrolling children in school is only the first hurdle. Ensuring attendance and completion are much harder tasks, and this is particularly the case for girls, whose progress is constrained by many factors linked to safety, hygiene, nutrition and family responsibilities (Watkins, 2000; Tomasevski, 2003). Weighting access as equivalent to achievement underestimates the EFA challenge that confronts governments, but it is particularly serious because of its failure to adequately assess gender-related aspects of school achievement.

Table 1 painted a particular picture of efforts in relation to increases in enrolments in South Asia. But can the significance of this be interpreted without further information? We now highlight how considering additional information on the region allows us to see some further dimensions of the context in which increases in enrolment and gender parity have occurred.

## INCREASES IN ENROLMENT AND GENDER PARITY IN SOUTH ASIA – FURTHER DIMENSIONS

Table 4 shows that the level of GDP improvement between 1990 and 2000 does not correlate with the levels of improvement in NER. Thus there is a spectacular percentage gain in girls' primary NER in Nepal, with more than 60 per cent improvement but only 20 per cent growth in GDP per capita. In Bangladesh the growth in NER is also considerably less than the growth in GDP per capita. By contrast, the smaller percentage gain in girls' NER in India seems out of step with the huge growth in GDP per capita of 132%. The size of the fall in girls' NER in Pakistan seems enormous compared to the level of reduction in GDP per capita.

Table 4 also shows that considerable increases in girls' primary NER have been made in Bangladesh and Nepal even with more than one-third of the

population living on extremely low incomes, but with a smaller proportion of the population living in extreme poverty in Pakistan gains on a similar scale were not made.

Some further insight can be gained in relation to the pattern of improvement and decline in girls' NER if we compare the information in Tables 1 and 2 with that in Table 5, which charts rises and falls in countries' Human Development Index (HDI).

Table 5 shows that there have been rises in HDI in all the countries for which we have data, raising questions about the pattern seen in Table 1 concerning NER and Table 4 concerning income. What we can see from looking at levels of girls' NER, income, wealth and human development is interesting, but not

**TABLE 4 GDP (PPP, US\$) per capita, South Asia: 1990–2000; and % population living below \$1 per day 1991–2002**

Country	1991	2002	Percentage Change in GDP per Capita	Percentage Population Living Below \$1 per Day
Afghanistan	700	n.a.		
Bangladesh	1160	1700	47%	36%
Bhutan	620	n.a.		
India	1150	2670	132%	34%
Nepal	1130	1370	21%	37%
Maldives	n.a.	n.a.		
Pakistan	1970	1940	-2%	13%
Sri Lanka	2650	3570	35%	7%

Source: UNDP, 2004

decisive with regard to assessing what progress has been made towards the MDG and what processes facilitate this. Enrolment data does not tell us anything about gender equality in attendance, participation or achievement as a result of schooling. GDP per capita does not give us the multidimensional picture of human flourishing painted by the HDI, while the HDI itself is not gender sensitive enough.

The Gender Development Index (GDI) and the Gender Empowerment Measure (GEM) provide additional perspectives. The GDI is an index made up of the level of gender inequalities in life expectancy at birth, adult literacy rate, the gross enrolment ratio at primary, secondary and tertiary levels of education, and earned income. While the GDI measures conditions for health, income and education, the GEM measures the extent to which women are able to use these

**TABLE 5 Rise in HDI, South Asia: 1990–2002**

Country	HDI 1990	HDI 2002	Percentage Improvement of HDI 1990–2002
Afghanistan	n.a.	n.a.	
Bangladesh	0.417	0.509	22%
Bhutan		0.511	
India	0.519	0.595	15%
Maldives		0.751	
Nepal	0.418	0.504	21%
Pakistan	0.444	0.497	12%
Sri Lanka	0.698	0.740	6%

Source: UNDP, 2004

resources to play an equal role in the political, economic and social life of their countries. The GEM is an index of the percentage of seats in parliament held by women, female legislators, senior officials and managers, female professional and technical workers, and the ratio of estimated female to male earned income.

Table 6 shows that for Nepal and India significant increases in girls' NER and GEI from the 1990s to 2000 have been accompanied by high levels of improvement in the GDI. Indeed in both countries the improvement in GDI is significantly greater than the improvement in HDI. Pakistan, where there was a fall in NER but an increase in GEI, shows increase in GDI. Sri Lanka, with consistently high levels of NER and GEI, has a relatively low level of increase in GDI and a spectacular fall in GEM, possibly due to the high level of women's migration, reducing their numbers in political processes and obscuring the amounts of their earned income in national data.

It can be seen that different information for the region paints different pictures. In summarizing the overall picture Janet Raynor has developed the overview table reproduced as Table 8. The 'best' in each category has a heavy outline and figures shown in bold; the 'worst' are shown in shaded boxes. She points out that there are many gaps, which can make comparison difficult or meaningless, and in many countries the accuracy of the data is questionable. Missing or inaccurate data is common in the countries with sections of the population living in districts with little communication with the capital or experiencing war.

**TABLE 6 Improvers' Gender Development Index, South Asia: 1993–c.2003**

Country	Gender Development Index (GDI) 1993	Gender Development Index (GDI) c.2003	Percentage Improvement in GDI 1993–c.2003
Afghanistan	n.a.	n.a.	
Bangladesh			
Bhutan			
India	0.410	0.574	40%
Maldives	0.599	0.735	23%
Nepal	0.308	0.479	56%
Pakistan	0.383	0.469	22%
Sri Lanka	0.679	0.726	7%

Source: Derived from Unterhalter, Rajagopalan and Challender, 2004

**TABLE 7 Improvers' Gender Empowerment Measure, South Asia: c.1995–2000**

Country	GEM 1995	GEM 2000	Percentage Change in GEM 1990–2000
Sri Lanka	0.409	0.272	-33%
Bangladesh	0.309	0.218	-28%
Pakistan		0.414	

Source: UNDP, 2003; UNDP, 2001

TABLE 8 Summary indicators for the region

	1	2	3	4	5	6	7	8	9
	HDI rank (out of 177 countries)	GEM (out of 80 countries)	PPP US\$, 2003	Public expenditure on education (% GDP, 2000-02)	Adult literacy rate % F:M, 2002-03	Primary F:M ratio, 2002-03	Secondary F:M ratio, 2002-03	Tertiary F:M ratio, 2002-03	Combined GER, prim, sec, tertiary % F:M, 2002-03
Afghanistan	-	-	-	-	-	-	-	-	-
Bangladesh	139	79	1770	2.4	31/50	1.04	1.11	0.50	54/52
Bhutan	134	-	1960	5.2	-	-	-	-	14/16
India	127	-	2892	4.1	48/73	0.94	-	0.68	56/64
Maldives	96	-	-	-	97/97	1.00	1.15	-	75/74
Nepal	136	-	1420	3.4	35/63	0.88	-	0.34	55/66
Pakistan	135	71	2097	1.8	35/62	0.74	-	0.81	31/43
Sri Lanka	93	72	3778	-	89/92	-	-	-	69/67

Source: Raynor, 2006

The spread of outlined or shaded boxes shows that there is no clear pattern. That is, there appear to be no consistent links between overall human development, wealth, gender or education. In each country, there is a complex relation among factors that impact on enrolment, progression and the interplay of education with other aspects of social development.

What do these trends tell us? The information suggests that evaluating progress on MDG3 requires not only measures of enrolment and gender parity, even though these are the targets.

To give expression to the spirit of the MDG we need ways of understanding not only how girls and women are able to access education in equal numbers to boys and men, but also how they are able to put that education to good use. We need an indicator that will show how girls and women are able to use primary schooling to secure better health, access to more education and higher incomes. The disjunctures between improvements in girls' NER, GEI and GDI in Pakistan, outlined above, suggest the need for a different way of measuring achievements towards the MDG.

## GENDER EQUALITY IN EDUCATION INDEX (GEEI)

### Towards an Alternative Measure

There are three major problems with the existing measures of gender equality and inequality in education. Gender parity and the gender gap are inadequate measures of gender equality, because they do not acknowledge context. Existing measures of quality obscure the gender question. The EDI fails to take full account of the significance of gender inequality in achievement. These problems have led the Beyond Access project to develop a new measure which better expresses the aspiration for gender equality in education.

The approach has been developed as a contribution to the debate about a publicly accountable criterion of justice in terms of gender equality in education. Thus the approach is offered partly in the

hope that it will elicit useful critical discussion. The approach to measurement draws on the work undertaken by Amartya Sen and Martha Nussbaum, who distilled a general approach to human flourishing based on capabilities and human rights (Sen, 1999; Nussbaum, 2000). These ideas have been operationalized in the UNDP's *Human Development Reports*, which have developed the Human Development Index (HDI) and the Gender Development Index (GDI) (Fukuda Parr and Kumar, 2003; UNDP, 1995-2004). A number of writers explore capabilities in relation to aspects of education (Alkire, 2002; Unterhalter, 2003; Unterhalter and Brighouse, 2003; Terzi, 2004; Walker, 2004; Unterhalter, 2005b).

A key idea when measuring capabilities, *valued doings and beings*, is that they

are multi-dimensional. Measuring gender equality in education is not only about recording the gender gap in enrolments of girls and boys in school (gender parity), but about measuring some of the other cross-sectoral aspects of gender equality and equity in relation to health, wealth and decision-making which all have a bearing on gender equality in school. A second aspect of capabilities is that, while the concept has particular strengths with regard to other measures of equality – for example, people's expressed desires, or aggregated utility (the greatest good for the greatest number) – the more one needs to draw comparison at a cross-country level, the less fine-grained are the capabilities that can be measured, and the more one has to rely either on measures of resources (like access to school) or on other routinely collected data that can act as some kind of proxy for capabilities (Unterhalter and Brighouse, 2003; Unterhalter, 2005a).

There are many problems with developing a quantitative measure of gender equality in education. It represents the interrelationship between countries or regions as competitive – creating a culture of winners and losers – when in fact they are deeply interlinked and in need of each other's support. It sets up an arbitrary board of scorers, who usually have little experience of delivery, to judge performance. And it tends to extinguish the processes of working towards

achievement. These are compelling reasons not to proceed down this path of analysis, relying either on scorecards or on quantitative measures of gender equity or equality. However, alongside these arguments must be considered the confusion that results from not knowing which countries or districts are improving gender equity or equality in education; which areas need resources, and why we deem this to be the case; and in what areas countries can learn from each other. These reasons, based on harnessing available resources to work together on developing a methodology for measurement of a problem of global significance, seem to mitigate to some degree the negative dimensions described above (Unterhalter, 2005c).

However, it should be stressed that the utilization of this or any other version of measurement of gender equality in education should not be a substitute for detailed quantitative and qualitative research. A key dimension that requires consideration in any form of measurement is an analysis of social and cultural relations and the opportunity for dialogue, debate and the exploration of differences, particularly with regard to the public–private interface. Such work must be conducted rigorously to provide a corrective to the simplifications and crude assumptions of any approach based on scorecards or league tables. Only in-depth analysis will furnish the detailed knowledge of

local contexts and actions necessary to take forward any of the very general directions that measurements of gender equality in education might point to.

### The Beyond Access GEEI

Bearing these issues in mind, the Beyond Access Project scorecard for gender equality in education was developed. This has since been renamed the **Gender Equality in Education Index (GEEI)**. The GEEI puts together data gathered by UNICEF on girls' attendance at school, by UNESCO on girls' achievement in primary school and access to secondary school, and by UNDP on the gender development index (GDI). The GDI is a measure that consists of the distribution of female to male life-expectancy in a country, literacy and enrolment in school, and estimated earned income. Each of the three indicators (life-expectancy, education and income) is equally weighted when compiling the index, although the education index gives two-thirds weight to the adult literacy index and one-third weight to the gross enrolment rate (UNDP, 2003: 343-4).

The Beyond Access GEEI has been developed to assess both access and retention in broader ways than hitherto. It includes not only the numbers of girls who attend and remain in primary school, but also an assessment of whether those girls are able to translate that attendance and retention into future

secondary schooling, healthy lives and reasonable incomes. Four widely used measures have been used to develop the GEEI for girls' access to and retention in school:

- Girls' net attendance rate at primary school
- Girls' survival rate over five years in primary schooling
- Girls' secondary Net Enrolment Ratio (NER)
- A country's Gender Development Index (GDI).

These measures were selected because they indicate access to primary schooling (net attendance rate), derived from household surveys; retention in primary schooling (survival rate); potential of the education system to generate teachers and managers with some concerns with gender equality (girls' secondary NER); and the possibilities for these women to survive and flourish as adults (GDI).

The Beyond Access GEEI is not an unweighted index. In compiling the index, girls' survival over five years in primary school and the capacity of women to survive into adulthood, retain literacy and earn a decent livelihood (signalled by the GDI) were weighted as twice as important as attendance in primary schools. Girls' enrolment in

secondary school, which it is believed points to the emergence of a cadre of women who will work in social development with some orientation towards gender equality and equity, was weighted as 50 per cent more important than attendance. (See Annex for an explanation of how the GEEI is calculated.)

There are a number of critiques of the GDI as a measure of gender equality. Charmes and Wieringa point out that the GDI measures general welfare, rather than gender inequality. In fact, the values for the GDI are very similar to those for the HDI, particularly for countries with high human development (Charmes and Wieringa, 2003). They also point out that the choice of measuring health by using life-expectancy, a very long-term measurement, is not likely to offer a precise indication of women's health for the current time period – unlike, for instance, infant and child mortality rates. Other critics point out that statistics of earned income do not include the work that women do in the subsistence economy (Elson, 1999). Pogge (2002) argues that the calculations for the HDI and GDI are problematic, because it is implied that gains in one dimension, for example in schooling or income, can be traded off against losses in another, for example longevity. These are substantial criticisms, but in our view they do not negate the usefulness of the GDI as an

easily accessible measure of some aspects of gender in relation to human well-being, which is why it has been used in the GEEI.

The UNDP's Gender Empowerment Measure (GEM) might have been a better measure of how girls and women are able to translate their education into earning and political decision-making. The GEM is an average of three indices: women's share of parliamentary representation; their economic participation through share of positions as legislators, senior officials, managers and professionals; and their share of earned income. There are, however, also criticisms of the GEM. For example, the number of seats in parliament occupied by women does not fully indicate how much power women actually have. Emphasizing women's earned income in the formal sector undervalues women's earnings in the informal sector or care economy, where a great many exchanges that are of value to women and their societies take place. Nevertheless, despite these limitations, the GEM does provide a proxy measure of the level to which women are visible in key political posts, earn equivalent amounts to men in the formal sector, and have professional employment. Unfortunately, however, the GEM has not been calculated for many countries, and if it has been calculated recently there are no time-series data, so comparisons cannot be made. Because GDI has generally been calculated for the early

1990s and 2000s for most countries, it has therefore been used in GEEI instead of GEM.

Table 9 presents the GEEI for South Asia between c.1993 and c.2001. This is based on work commissioned from the Beyond Access project by the Commonwealth Secretariat, UNESCO Bangkok and UNICEF Regional Office for South Asia (Unterhalter *et al.*, 2004; Unterhalter, Rajagopalan and Challender, 2005; Unterhalter and McCowan, 2005). Unfortunately, because of incomplete data in one of the fields the GEEI measures no calculations have been possible for Afghanistan, Bhutan and Maldives.

The table shows that Sri Lanka made spectacular gains in GEEI in a decade of low economic growth. Bangladesh and Nepal made huge gains in GEEI, but remain under a score of 50. India, despite its large growth in GDP per capita, did not make gains in GEEI equivalent to Nepal or Bangladesh but

nevertheless saw a large rise from a low base. Only in Pakistan is there a fall in GEEI over the decade, leaving it with the lowest level GEEI of the countries in the region for which there is data.

### What Does The GEEI Tell Us?

The trends in GEEI in South Asia are similar to those in other regions (Unterhalter, Rajagopalan and Challender, 2005). Countries with long and devastating histories of war or repressive government have low GEEI (Pakistan and Nepal), but Sri Lanka is the exception to this. Countries with high levels of women's mobilization or political participation score higher than countries where there has been minimal or only 'top-down' mobilization on these issues; Bangladesh and India compare with Nepal in this respect. Countries with vast regional inequalities score considerably lower than countries where regional inequalities are not an issue on this scale. India and Pakistan compare strikingly with Bangladesh and Sri Lanka in this regard.

**TABLE 9 GEEI for South Asia: c.1993–c.2001**

Country	GEEI c.1993	GEEI c.2001	Percentage Increase/Decrease
Sri Lanka	68	94	38
India	28	41	46
Bangladesh	23	48	109
Pakistan	23	20	-13
Nepal	20	36	80
Afghanistan, Bhutan, Maldives	n.a.	n.a.	

Source: Unterhalter, Rajagopalan and Challender 2005; Unterhalter and McCowan, 2005

What does the GEEI tell us about how far the world needs to go to meet the two Millennium Development Goals that relate to education: MDG 2 and MDG 3? Table 10 compares the rate of improvement in GEEI for countries in the South Asia region between c.1993 and c.2001 and estimates what level of further improvement would be needed to reach a GEEI score of 95. A GEEI score of 95 would indicate net girls' primary attendance of 90 per cent and above, girls' primary survival rate of 90 per cent and above, girls' secondary NER of 60 per cent and above, and GDI of 0.800 and above (equivalent to gender equality levels in life expectancy, education and income of Korea, Singapore and Japan in 2003).

Table 10 shows that despite the considerable increases in GEEI for virtually all countries in South Asia for which there is data, the percentage

improvement required to reach a GEEI score of 95 per cent by 2015 is still enormous. Sri Lanka would be required to sustain the gains made between 1993 and 2001. It already scores highly in the education areas of the GEEI, and it is only in the GDI that its score is not excellent. Bangladesh would have to maintain the levels of improvement in girls' education and women's lives put in place between 1993 and 2001. This would entail work in all the three education dimensions of the GEEI, where it currently is at a mid level, and considerable improvement of its GDI, which points to quality in and equality through education. Nepal would have to double its rate of improvement in GEEI and India would need to treble this. Pakistan, which saw a fall in GEEI between 1993 and 2001, would need to give maximum momentum to this improvement with nearly 400 per cent improvement over the next decade.

**TABLE 10 GEEI scores South Asia c.1993–c.2001 and improvements needed to reach GEEI 95 by 2015**

Country	GEEI c.1993 (%)	GEEI c.2001 (%)	Percentage Improvement c.1993–c.2001	Percentage Improvement needed to reach GEEI of 95 by 2015
Bangladesh	23	48	109	98
India	28	41	46	132
Nepal	20	36	80	164
Pakistan	23	20	-13	375
Sri Lanka	68	94	38	1
Maldives	85	n.d.		
Afghanistan, Bhutan	n.d.	n.d.		

Source: Derived from Table 9

## CONCLUSION

This paper has shown that while there may be questions about the way data is collected at local and national level, if we work with the data that UN agencies have put together we have a remarkably consistent picture. There have been gains in gender equality in and through schooling in many countries in South Asia, whether we use an indicator of access like NER, of gender parity like GEI, or of more comprehensive aspects of human flourishing like GEEI. In some countries – Bangladesh, Nepal, India – the gains over a decade have been considerable. In others, such as Sri Lanka, good levels of gender equality at the beginning of the decade have been maintained. While increases in income and wealth are associated with these gains, there is not a simple causal relationship, pointing to other factors such as ambitious government

programmes and the political will to put them into effect. However, there are countries where the indicators suggest the decade has not seen an enhancement of gender equality. The negative signs with regard to growth in gender equality indicators for Pakistan possibly bear out a finding from GEEI work in Africa, that conflict and wide regional divisions are associated with lower GEEI scores (Unterhalter *et al.*, 2004). For Pakistan this fall is also associated with falling GDP, but this is not the whole story and much more work is needed both on the quality of the data the indicators rest on and on how we can read these conclusions in relation to qualitative analysis.

The GEEI was initially developed for Commonwealth countries in Africa. The picture in South Asia is, however, much

more encouraging with regard to the levels of improvement over the last decade. If gains on this scale could be made before the resources linked to the MDGs became available, there are possibilities that in many countries in Asia the aspirations for gender equality and the MDGs may be within reach. However, in South Asia particularly, huge effort is needed. For some countries this entails maintaining the effort that has resulted in the considerable gains made over the past decade, but for other countries double or triple the level of improvement is required. Pakistan faces the greatest challenges, coming from such low GEEI levels.

The GEEI figures tell a compelling story. But they are not nuanced enough to show us the local picture and the fine-grained image of where success is not the only story and more resources of many different kinds are needed. For this we need indicators at local level and local ownership of the data to hold governments, researchers and international agencies accountable for full realization of the MDG vision.

Improving girls' NER, the GEI and GEEI represent formidable tasks for the next

decade. In countries where there has been political commitment and ambitious programming significant gains have been made. To measure up to the MDG commitments this needs to continue and expand. Achieving gender equality is generally linked with multi-sectoral development, and often with popular mobilization in support of political, economic and social demands, particularly with regard to education, health and sustainability. There is much consensus on what needs to be done. This paper has tried to show with what intensity and urgency we need to act.

The GEEI presents an alternative means of measuring gender-equality gains and losses in and through education. Huge challenges remain to increase GEEI in South Asia. Reaching the targets for MDG 2 and 3 by 2015 is not impossible, given the talent and wealth of the world. This assessment of GEEI gives some indication of the size of the task and the levels of mobilization needed. This task falls not only to the people who live in the countries with low GEEI. The MDGs are challenges to global collaboration and resource mobilization. The numbers point to the heightened levels at which we need to work together.

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# ANNEX

## Calculating the GEEI

The GEEI was constructed by using four measures deemed useful as indicators of girls' access to and retention in school, and women's health and levels of income after school. The indicators selected were:

- Girls' net attendance rate at primary school
- Girls' survival rate over five years in primary schooling
- Girls' secondary Net Enrolment Ratio (NER)
- A country's Gender Development Index (GDI).

Data from the EFA Monitoring Reports, UNICEF's State of the World's Children, the Human Development Reports, World Bank reports, and countries' own EFA assessments were used. Occasionally, where there were no figures available, secondary literature was consulted.

Net primary attendance rates, survival at school, secondary NER, and GDI levels were given a value based on the following assessments shown in Table A.1.

**TABLE A.1** Criteria for scoring achievements with regard to access and achievement in girls' education

Score	Criteria to achieve the score
5	Excellent conditions. Already at or extremely well positioned to achieve gender equity in 2015 and fulfil the aspirations of the Beijing Declaration
4	Very good conditions. Substantial achievement with regard to gender equity and well on the path to achieving 2015 goal with regard to access. Some gains needed in order to improve retention
3	Good conditions. Progress towards 2015 evident, but further work necessary on access and retention
2	Poor conditions. Progress towards 2015 slow. Considerable and intensive work needed on access and retention
1	Very poor conditions. 2015 goals unlikely to be reached without massive mobilization on all fronts to secure access and achievement

Using these criteria, the scoring system illustrated in Table A.2 was developed with regard to the indicators.

**TABLE A.2** GEEI scores and indicators

Score	Net Girls' Primary	Girls' Primary Attendance	Girls' Secondary Survival Rate	GDI NER
5	90% and above	90% and above	60% and above	0.800 and above
4	80-89%	80-89%	50-59%	0.700-0.799
3	70-79%	70-79%	40-49%	0.600-0.699
2	60-69%	60-69%	30-39%	0.500-0.599
1	59% and below	59% and below	29% and below	Below 0.499

Net Girls' Primary Attendance	Girls' Primary Survival Rate	Girls' Secondary NER	GDI	GEEI
Raw score x 1.25	Raw score x 2.5	Raw score x 1.75	Raw score x 2.5	Sum of weighted measures divided by 4

Detailed calculations of the GEEI for Africa and Asia are to be found in earlier papers (Unterhalter *et al.*, 2004; Unterhalter, Rajagopalan and Challender, 2005).

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Elaine Unterhalter is a Senior Lecturer in Education and International Development at the Institute of Education, University of London. She is joint co-ordinator of the *Beyond Access: Gender, Education and Development* project which has published books, policy papers and newsletters linked to achieving the gender and education MDGs. She has written a number of journal articles on gender and education in India and Bangladesh. Her book *Gender, Schooling and Global Social Justice: An analysis of global initiatives to achieve gender equality in education* will appear in 2007.



