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ABSTRACT

Research efforts have shown that girls' education is a key component in improving economic and social well-being. Investment in girls' education has been related to increased productivity and labor force participation, decreased fertility and infant mortality, and increased child health. Social, institutional, and political factors that contribute to low participation of girls in school may be exacerbated in times of severe economic downturn, civil strife, or epidemic disease, and interventions to overcome constraints may prove less effective. This report summarizes the results of an examination of types of crises on the participation of girls in primary schooling. The report is based on a compilation of statistics available in international databases. These statistics examine aspects of girls' education in 89 developing countries receiving United States Agency for International Development (USAID) assistance through descriptions of trends over an almost 30-year period of time. The report's summary of the general trends in girls' education follows a brief description of the methodological approach. The subsequent section discusses the principal findings regarding girls' education in these countries during periods of crisis resulting from severe economic downturn, epidemic disease, and internal conflict. The final section of the report draws implications from the findings. (Includes a list of acronyms, four notes, and 30 tables. Contains a 33-page bibliography. Appendix A includes education indicators by country. Appendix B depicts crises patterns by access, girls and women's education (GWE), region, and country.) (BT)



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Girls' Education Monitoring System

Girls' Education and Crises

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LIST OF ACRONYMS

AFGI	Apparent First Grade Intake
AGI	Apparent Gross Intake
ATT	Primary Education Attainment
CAII	Creative Associates International
CIA	Central Intelligence Agency
CR	Primary Cohort
DHS	Demographic Health Survey
EFA	Education for All
GED	Global Education Database
GEMS	Girls' Education Monitoring System
GER	Primary Gross Enrollment Ratio
GNP	Gross National Product
GWE	Girls and Women's Education
HIV/AIDS	Acquired Immune Deficiency Syndrome
IDP	Internally Displaced Persons
IMR	Infant Mortality Rate
PTR	Primary Pupil-Teacher Ratio
SPSS	Statistical Package for Social Sciences
TRAN	Transition from Primary to Secondary Education
UNAIDS	United Nations Programme on HIV/AIDS
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNHCR	United Nations High Commissioner for Refugees

UNICEF United Nations Children's Fund
USAID US Agency for International Development
USCR United States Committee for Refugees

PREFACE

This report is based on a compilation of statistics available in international databases. These statistics are used to examine a number of aspects of girls' educations in developing countries through description of trends over an almost thirty-year period of time. The completeness of the data varies, depending on the time frame and individual country. This lack of completeness has required some data manipulation, such as averaging the data for available countries in a given time period that might have been handled in other ways if more complete data sets were available. We have tried to verify the aggregate patterns by also discussing trends in individual countries. We have also reported on situations of crisis where the availability of data greatly limits the analysis. Such information is included because lack of data is, in itself, a trend that provides information about crisis situations.

A number of people provided valuable input and encouragement throughout the development of the study. We are especially thankful to the sponsors of the study, the Women in Development Office of the Global Bureau of USAID. The Coordinator for Girls' and Women's Education Initiative during the development of the study, Susie Clay, provided valuable feedback on several drafts of the work. Katherine Blakeslee, Director of G/WID, was helpful with documents and ideas for data display, and Anne Dykstra of G/WID had a number of comments that were incorporated into the document.

Discussions with specialists in girls' education, such as Karen Tietjen, Jo Allen Lesser, and Francine Agueh, helped in the initial conceptualization of the work. Gabriela Nuñez and Vikki Frank deserve special thanks for assembling many of the documents that were referenced in the report.

While the conclusions are the authors' own, to the extent that the study provides useful information for assisting girls and boys to complete school, all of these people deserve recognition.

EXECUTIVE SUMMARY

Girls' Education and Crisis

Introduction

Education for all children has been the goal for most nations of the world since it was articulated in the United Nations Universal Declaration of Human Rights in 1948. The difficulty in achieving the goal was recognized in the World Conference on Education for All, held in Jomtien, Thailand in 1990. The Jomtien conference also focused world attention on the fact that girls' enrollment and persistence in primary school was lower than that of boys in many developing countries. Multiple supply and demand factors were identified as contributing to girls not enrolling in and not completing primary school. Government fiscal and management capability as well as educational systems that reinforce stereotypes about female roles and low academic performance or provide uncomfortable physical and social environments for girls have been identified as supply-side constraints. Poverty and the related factors of direct and opportunity costs to families, together with household and community perceptions about the limited relevance of schooling for girls, are seen as depressing demand.

Research efforts also began to show that girls' education is a key component in improving economic and social wellbeing. Investment in girls' education has been related to increased productivity and labor force participation, decreased fertility and infant mortality, and increased child health. Recognizing the potential development gains to be achieved from educating girls, many countries have recently engaged in a variety of interventions to promote female education. Creating awareness among public sector officials of the importance of girls' education, developing unbiased learning materials, employing female teachers, providing gender sensitivity training to school staffs, and improving physical facilities in schools are strategies being employed in different countries to make schools more palatable to girls. Lower cost materials and delivery systems, provision of scholarships or fee waivers, and information campaigns that engage community, business, and religious leaders are interventions that have been employed to increase demand.

However, social, institutional, and political factors that contribute to low participation of girls in school may be exacerbated in times of severe economic downturn, civil strife, or epidemic disease and interventions to overcome constraints may prove less effective. Economic downturn may influence both educational supply and demand for schooling. Public funding for education is likely to be reduced and parents may have an increased need for children's labor to supplant lost household income. Civil strife forces people from their homes in conflictive zone, and often forces them away from educational services. During civil strife, schools may be destroyed and funding for education may be diverted into civil defense. Epidemic disease may focus public funds on the health sector and can reduce educational service delivery when teachers and administrators contract the disease. Students may be taken out of school to care for ailing family members. The differential effects of such "crisis" situations on boys and girls have not, however, been studied over a number of countries providing different opportunities for girls' participation in primary school.

This document summarizes the results of an examination of various types of crises on the participation of girls in primary schooling. A summary of the general trends in girls' education

across the countries receiving USAID development assistance over the last 30 years follows a brief description of the methodological approach. The subsequent section discusses the principal findings regarding girls' education in these countries during periods of crisis resulting from severe economic downturn, epidemic disease, and internal conflict. The final section of the document draws implications from the findings.

Methodological Approach

For the purposes of this review, a crisis has been defined as a set of events that unfold in a country to cause widespread human, material, and/or environmental losses, which exceed the ability of the affected society to maintain normal institutional functions. As crises are assumed to have countrywide impact, national statistics from 89 countries that had been used by USAID to examine the effectiveness of United States foreign aid were selected to examine trends in girls' education. All of these countries were considered developing countries in the 1960s and 1970s.

Data sources included databases of UNICEF, UNESCO, The World Bank, The World Health Organization, and The United States Agency for International Development. All available data related to the indicators of gross enrollment ratios (access), fifth grade attainment (primary school completion), apparent first grade gross intake ratios (demand), transition to secondary school (achievement), overall attainment (average primary school completion), and pupil-teacher ratio (quality) were collected from 1970 through the latest data point in the 1990s. Change in the education indicators during periods of the crisis was compared to aspects of the crises such as magnitude and duration, as well as characteristics of the country undergoing crises (e.g., relative poverty of the country, girls' access to schooling).

Analytic procedures, including frequencies and comparisons of means were used to identify and track changes in the variables and indicators over the 30-year period and during periods of crisis. Means were calculated to show the trends for each country, group of countries, and geographical regions. Then mean changes in the education indicators were calculated during the economic, internal conflict, and epidemic disease years for each the countries meeting the specified criteria. Bivariate correlations between the economic crises variables and the changes in the education indicators were used to identify relationships among the mean changes.

Findings

Trends in Girls' Education

Sample countries were organized by the level of girls' access to primary schooling in 1970. Trends were examined in terms of relative changes in each of the four groups (low access, intermediate access, high access, and complete access) for each 10-year period after 1970. The last year for which data were available in the 1990s was used for the final time period.

Table 1 shows the aggregate change for girls in gross enrollment ratio, completion, transition to secondary school, enrollment in first grade at the appropriate age, and amount of schooling in the population 15 years of age and older from 1970 to the last date for which data are available in the 1990s. The table also shows the relative difference between boys and girls

on these indicators. As can be seen in Table 1, the problem of girls' access to primary schooling has not been solved. Although, access to primary education has increased greatly for girls in most developing countries, it remains below 50% in countries where access to primary schooling has traditionally been low. In addition, girls' access, on the average, has not increased as rapidly as that of boys over the last three decades in those countries. This is true even in countries that have begun programs that emphasize the importance of girls' schooling.

Table 1: Change on Education Indicators for Girls, 1970 to Late 1990s

Access/ Indicators	Low			Intermediate			High			Complete		
	1970	90s	Gap*	1970	90s	Gap	1970	90s	Gap	1970	90s	Gap
Enrollment	18.1	48.4	1.7	54.9	81.9	-12.4	89.0	97.80	-5.80	103.8	102.5	-0.2
Completion**	71.8	63.6	-5.7	62.1	63.7	-0.4	80.9	83.90	-2.30	86.3	87.2	-2.8
Transition	37.0	42.4	-10.8	41.0	60.6	-3.5	48.1	77.0	-6.8	56.6	75.9	-4.0
Apparent Gross Intake	18.4	64.6	-2.7	67.0	91.1	-18.5	98.0	101.0	-2.60	105.0	101.0	0.7
Attainment	0.55	1.19	0.10	1.02	2.66	0.02	2.34	3.79	-0.31	3.39	4.5	-0.27

* Gap indicates the percentage change between boys and girls from 1970 to the late 1990s on each indicator. A positive number means a relative increase on the indicator in favor of boys; a negative sign indicates a decrease.

**Data only available from 1980 to late 1990s

Full enrollment of the primary school population does not occur rapidly. Despite efforts such as the Education For All declaration at Jomtien and the international attention given to girls' education over the last decade, even countries with aggregate enrollment ratios of 89% for girls in 1970 have not, on the average, reached complete primary school enrollment for girls. These countries are also slightly below 100% enrollment for boys.

In all of the groups of countries, there has been a decline in the gender gap in both completion and transition to secondary school. This is true even in low access countries where completion rates have declined. This decline is a result of almost universal completion reported by countries such as Burundi, which have since dropped. In countries with low, full, and close to full enrollment, girls have slightly higher rates than boys in the late 1990s.

Full enrollment does not mean full attainment. In countries with full enrollment in primary school, less than 90% of students reach fifth grade and this percentage goes down to about 60% percent in low and intermediate access countries. However, significantly higher rates of completion are found, on the average, for countries with high levels of enrollment. Even in the countries with higher access, however, there has been little change over time in completion rates, suggesting that increasing access to primary education alone may not influence completion.

Achievement, in terms of secondary school enrollment of primary school graduates, has a pattern of consistent average gains in each group of countries. Additionally, the gap between boys and girls has dropped at each access level. However, the percentage of girls who complete primary school and go on to secondary school remains low in countries with low gross enrollment ratios. This suggests that in countries with less than complete enrollment, secondary school participation may be a function of available space, as well as mastery of the primary school curriculum.

Demand for educating girls, as measured by enrollment in first grade at the appropriate age, has remained low in low access countries. This does not seem to be a function of the direct and opportunity cost barriers traditionally associated with girls' access to schooling, as demand for boys' schooling has decreased in the same period. Rather, it may be associated with the economic and social difficulties faced by many of the countries making up this group.

Functional literacy, especially among females, appears to be low in the adult populations of most developing countries. Although there have been gains in the average years of primary schooling across countries, only in those that had complete enrollment in 1970 is the average years of schooling equivalent to females reaching fifth grade. Gender differences favoring boys, in the average number of years of primary schooling in the adult population, have increased slightly in the lower access countries.

Girls' Education and Crisis

Crisis was relatively common among the developing countries included in the sample. Some type of crisis situation occurred in 63% of the 89 countries over the 30-year period. The incidence of different types of crisis within the groups of sample countries was similar, varying only by 4 percentage points. Economic crisis predominated, making up the highest percentage of crisis in each of the access groups. Internal conflict and HIV/AIDS were most prevalent in countries of Sub-Saharan Africa.

Table 2 shows where girls' education was affected by crisis. Severe economic downturn and epidemic disease have a strong impact on girls' enrollment. Economic crisis countries experienced significant mean decreases in the enrollment of both girls and boys when compared to other sample countries with less severe economic declines. In addition, when all sample countries, which experienced an economic decline were included in the analysis, the severity of the downturn had a significant negative relationship to enrollment in low access countries. The severity of the downturn had a higher correlation with a decrease in girls' gross enrollment ratio than with that of boys. Change in gross enrollment ratios also correlated with a country's relative poverty rank, suggesting that the poorer the country, the greater the influence of the downturn on enrollment.

Table 2: Effects of Crisis on Girls' Education Indicators

Crisis/ Indicators	Economic Downturn		Internal Conflict		HIV/AIDS		IMR	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Enrollment	*	*		*	*		*	
Completion	*	*						*
Transition	*	*						
AGI	*				*	*	*	

In African countries with an adult HIV prevalence rate of 11% or greater, girls' gross enrollment ratios and apparent gross intake ratios, on the average, have decreased in the last decade. In countries with lower incidence, there has been positive average change on these indicators. Boys in high prevalence countries also had significant decreases in enrollment, when compared to boys in countries with lower levels of HIV prevalence. However, in all sample

countries, significant negative correlations in terms of girls' gross enrollment ratios and HIV prevalence were found in two of the six HIV prevalence indicators. No significant correlations were found between boys' gross enrollment ratios and the HIV prevalence indicators. Similarly, maintenance of relatively high rates of infant mortality was associated with decreases in girls' gross enrollment rates but not with those of boys.

Relatively high percentages of internally displaced persons were not related to girls' enrollment. The available data suggested that boys' enrollment may be affected more than that of girls by internal conflict. However, the general lack of educational data in those countries with the largest percentages of internally displaced persons limited the analysis.

The relationship of economic downturn to completion and transition is a function of the level of access that girls have to schooling. In low access countries, change in completion rates for girls' was not correlated with any economic downturn variables. In intermediate access countries, on the other hand, changes in girls' completion rates had a relatively high negative correlation with all of the economic decline variables. Boys' completion rates correlate negatively with several economic decline variables in both groups of countries. With economic decline, change in girls' transition to secondary school is related to the economic decline variables in countries that have obtained at least 70% access for girls.

Epidemic disease does not appear to influence girls' completion rates. No significant mean differences were found in terms of changes in girls' completion between high HIV/AIDS and other Sub-Saharan African countries, between countries with high rates of infant mortality and those with lesser rates, or between countries with high percentages of internally displaced persons and other sample countries. Similarly, changes in girls' completion were not correlated with any of the variables for examining the severity of disease and conflict.

All of the crisis situations except internal conflict were related to decreases in demand for girls' education. Both the magnitude and the duration of economic crisis correlated negatively with apparent first grade intake for girls. Countries that had the smallest decreases in infant mortality rates had the largest decreases in apparent first grade intake. Similarly, in African countries with an adult HIV prevalence rate of 11% or greater, girls' apparent gross intake ratios, on the average, have decreased in the last decade. In countries with lower incidence, there has been positive average change on this indicator. Demand for boys' education in high prevalence countries has also had significant decreases.

Implications

Programatic

There is a need to focus on low access countries. These countries, as a group, have made the least absolute progress in increasing the participation of girls in primary school. Further, although developing countries at any access level may be subject to crisis situations, the countries of Sub-Saharan Africa predominate among countries where girls have less access to schooling. These countries are over-represented in terms of the number of crisis situations experienced, when compared to other geographic regions. They are also most likely to experience more than one type of crisis.

The emphasis should be on increasing access, as relative increases in access are likely to have an effect on the absolute number of girls completing primary school. Attention should also be given to improving awareness of the importance of educating girls, as demand for female primary schooling is relatively low.

It would seem that to have national impact, investment in girls' education must be increased. Despite emphasis on educating girls in programs of a number of the sample countries, impact appears minimal. This may be a result of the limited scale of the programs, suggesting that greater investment is needed, especially in those countries that have made the least progress.

Given the long period needed to recover from economic crisis and the relative poverty of those countries experiencing severe crisis, extensive and prolonged investment in promoting girls' education may be needed to maintain progress during crisis situations. The chronic nature of many economic declines and internal conflicts together with the devastating impact of the HIV/AIDS epidemic may require that girls' education be a part of large-scale structural reform to be effective.

A focus on access does not negate the need to improve completion rates. The relatively low attainment levels, even in countries with high access, suggest that enrollment alone does not assure the development of a literate population. Strategies must be developed which emphasize the importance of school completion in any program emphasizing the education of girls.

The lack of adult populations at a level that is considered functional literacy, even in high access countries, argues for a focus on schooling completion for girls. It also suggests, however, that attention should be given to the out-of-school population.

Research

The general lack of national education data beyond gross enrollment rates, points out the difficulties in examining cross-national educational phenomena over time and the importance of collecting complete educational statistics on a yearly basis. The availability of such data has, however, improved in recent years. Thus, using the database created in this review as baseline, follow-up studies may be able to examine the relationship between crisis situations and girls' education with greater precision.

The variation found in trends and relationships in crisis situations by level of access suggest that knowledge of the level of access to primary schooling for girls can help focus investment strategies in countries experiencing crisis. These data should be gathered as part of planning efforts in girls' education.

The global nature of the data did not lend itself to extensive investigation of urban/rural differences. However, the generally lower demand in countries with economic downturn, regardless of access level, and the stronger negative correlations found with HIV infection rates among rural pregnant women and indicators of girls' gross enrollment and apparent intake suggest that girls' participation in schooling may be affected by their place of residence. In-depth, comparative studies focusing on specific regions within countries are necessary in order to better understand the effects of poverty and rising HIV/AIDS prevalence on girls' education.

Both the general lack of national educational data during periods of internal conflict and the limited relationships found with existing data suggest that the effects of internal conflicts may be better studied within affected regions of a country.

The finding that boys' educational participation is more affected by internal conflict and severe economic downturn than that of girls may be a result of the greater involvement of boys as soldiers or breadwinners. It suggests the importance of attempting to disaggregate both the number of child soldiers and the number of children participating in the labor force by gender in order to obtain a more accurate determination of the impact of internal conflict.

I. Introduction

This document is the first of several annual reviews to be produced by the Girls' Education Monitoring System (GEMS) project. Each review will deal with a topic of special interest related to girls' education. The focus will be on bringing together the existing statistics and other empirical data on the issue under review. Given the devastation of the HIV/AIDS crisis, especially in Sub-Saharan Africa, this first review examines the effects of various types of crises on girls' participation in primary schooling. In order to provide a context, general trends in girls' education across countries receiving USAID development assistance over the last 30 years are presented in the initial section of the document. This is followed by an examination of girls' education in these countries during periods of crisis.

A. Background

Girls' education has been identified as a key component in improving economic and social well-being. It is well documented that investment in the education of girls contributes to increased productivity and labor force participation, decreased fertility and infant mortality, and increased child health (Florio and Wolf, 1990; King and Hill, 1993; Schultz, 1998; Summers, 1992). Private rates of return, measured as the proportionate increase in wages associated with an additional year of schooling, tend to be similar for men and women. However, it has been shown that where there is a systematic difference between estimates of private rates of return, the difference generally favors women (Schultz, 1998). This is especially true in countries where women receive significantly less education than men (Schultz, 1995).

Despite the generally recognized positive social and private outcomes from girls' enrollment and persistence in primary school, rates for girls are lower than that of boys in many developing countries. Although patterns may vary in individual countries, the problems of girls' access to school, the number of years completed by girls, academic performance, and accomplishment upon leaving school are common across many developing nations. A number of constraints have been related to girls' relative lack of success with schooling. Such constraints have been characterized as socioeconomic and sociocultural factors, school environmental factors, and political and institutional factors (Odaga and Heneveld, 1995).

Socioeconomic and Sociocultural Factors. The direct costs of schooling in terms of tuition, books, uniforms, and the like have been found to be a deterrent to girls' enrolling in school in many low income countries and in high poverty areas, such as the rural hinterlands, within countries. Relatively high opportunity costs resulting from girls' contribution to household labor also influence families' decisions about sending girls to school. Additionally, households may view the schooling of girls as irrelevant, given the perception of their reproductive and household labor roles as adults (Tietjen and Prather, 1991; King and Hill, 1993).

School Environment Factors. The availability of schooling in terms of both distance to be covered in reaching a school and the condition of the existing schools have been identified as impediments to girls' participation. Traveling long distances to school expends children's energy and increases the concern of parents for the sexual safety of their female offspring. The lack of facilities, such as latrines, also limits girls' attendance. Teacher attitudes and behaviors, such as

calling only on boys, may limit girls' access to academic content. Textbooks often exclude depictions of women and girls. Sexual harassment by male teachers and classmates may also prevent girls from attending class (VanBelle-Prouty, 1991; Miske and VanBelle-Prouty, 1996; O'Gara, et al., 1999).

Political and Institutional Factors. Fiscal capacity to finance and manage education reform to promote girls' schooling is often limited in low-income countries (King and Hill, 1993). A lack of women managers in government and private sector organizations impinges on women's decision-making abilities and reinforces the perception that women do not have a role to play in national affairs (Odaga and Heneveld, 1995). Political turnover in ministries constrains the possibility of a coherent, lasting educational reform strategy.

Social, institutional, and political factors that contribute to low participation of girls in school may be exacerbated in times of severe economic downturn, civil strife, or epidemic disease. Economic downturn may influence both educational supply and demand for schooling. Public funding for education is likely to be reduced and parents may have an increased need for children's labor to supplant lost household income. Civil strife forces people from their homes in conflictive zones and often away from educational services. During civil strife, schools may be destroyed and funding for education may be diverted into civil defense. Epidemic disease may focus public funds on the health sector and can reduce educational service delivery when teachers and administrators contract the disease. Students may be taken out of school to care for ailing family members. The differential effects of such "crisis" situations on boys and girls have not, however, been studied over a number of countries providing different opportunities for girls' participation in primary school.

In this document, several indicators of educational participation are examined in terms of actual change for girls and in relation to the experience of boys over time. The review begins with a discussion of the indicators employed and the methodology used in the study. Subsequent chapters focus on a comparison of trends across countries with different levels of female access to primary education and on different types of crisis situations (economic, internal conflict, and epidemic disease) as they influence the education of girls. The review ends with conclusions about the trends and implications of the findings.

B. Purpose and Methodology

Given the importance of female education for development, it is not surprising that a number of attempts to organize statistical data across countries and regions to inform policy discussions have been undertaken. Harnett and Heneveld (1993) introduced the idea of gender ratio as a tool for comparing male and female participation in education. They developed a series of indicators related to educational performance—access, attainment, and accomplishment—on which to make country and regional comparisons. Population Action International (1998) has examined the absolute differences in gross enrollment ratios between boys and girls in individual countries and regions, which they called the "gender gap." Both of these concepts have now become commonplace as indicators of female educational progress. While both concepts provide useful tools for examining the relative status of different countries or regions, the focus on gender comparisons runs the risk of ignoring situations of low access that are similar for both

girls and boys. Thus, discussion of trends in terms of change in absolute frequencies of educational indicators within gender must be combined with comparative indicators.

1. Trends in Girls' Participation in Primary School

The trends in girls' participation in primary education were examined in terms of changes on several indicators over almost three decades. Six indicators of girls' participation in primary schooling were used to examine trends over time. These were: gross enrollment ratio, fifth grade attainment, apparent gross intake ratio, transition to secondary school, pupil-teacher ratio, and primary school attainment of the population. Gross enrollment ratio was used as a measure of access or the availability of schooling for girls. Fifth grade attainment was used for the measure of girls' persistence in school. This is the indicator for completion found in most international databases and it provides a proxy measure for basic literacy and numeracy. Apparent intake ratios were used as the indicator for demand. It was assumed that enrollment at the appropriate age would reflect a family's desire to have female children participate in primary schooling. There is a question about the use of this indicator, as it is somewhat dependent on the availability of school places. However, a more robust indicator, such as the number or percentage of children in the workforce that was disaggregated by gender could not be identified. Pupil-teacher ratio was used as an indicator of educational quality. The problem with this indicator is that studies of teacher-student ratio suggest that there is little variation in student performance with ratios between 15:1 and 45:1, thereby making comparisons within this range somewhat meaningless. In addition, it is not disaggregated by gender. However, there are little international data on other possible indicators such as per capita investment in school materials that might be better measures of quality. Thus, pupil-teacher ratio was used in this study but interpreted with caution.

Because there is a lack of comparable cross-national test data, transition to secondary school has been used as an indicator of achievement. The assumption is made that entrance into secondary school indicates a degree of mastery of the primary school curriculum. It is recognized, however, that availability of secondary school places will condition the number of students who continue in school. Average years of primary schooling in the 15 years of age and older population was used as a complementary measure of attainment because these data were available in a database that had been refined to include adjustments for grade repetitions not usually made in international databases. These indicators are defined as follows:

Primary Gross Enrollment Ratio (GER). This is enrollment of primary students of all ages expressed as a percentage of the primary school-age population. The gross primary enrollment ratio describes the capacity of a school system in relation to the size of the official school-age population. For example, a ratio of 100% indicates that the number of children actually enrolled, including those outside the official age range, is equivalent to the size of the official primary school-age population. It does not mean that all children of official primary school age are actually enrolled. If the ratio were so misinterpreted, it would overstate the actual enrollment picture in those countries in which a sizable proportion of students are younger or older than the official age, owing to early or delayed entry or to repetition. In many countries, the official primary school-age group is 6-11 years. The differences in national systems of education and duration of schooling should be borne in mind when comparing the ratios. As the study examined change over time, all GERs over 105% were set to 105% to allow a consistent definition of complete enrollment for purposes of analysis. Actually percentages for gross

enrollment ratios that were found in the databases consulted have been provided in the appendices.

Proportion of Primary Cohort to 5th Grade (CR). This is defined as the percentage of a cohort starting primary school that eventually attain fifth grade. The estimate is based on the Reconstructed Cohort method, which uses data on enrollment and repeaters for two consecutive years. When data on repeaters are missing for the year shown, the apparent cohort method is used for estimating survival. When repetition rates are relatively high and vary between grades, this method may overestimate or underestimate the survival rate.

Apparent Gross Intake Ratio (AGI). Apparent intake rate is the total number of new entrants in the first grade of primary education, regardless of age, expressed as a percentage of the population at the official primary school-entrance age. Because this calculation includes all new entrants to first grade (regardless of age), the Apparent Intake Rate can be more than 100% due to over- and under-aged children entering primary school for the first time.

Primary Pupil-Teacher Ratio (PTR). This is the number of students enrolled in primary schools divided by the number of full-time and part-time primary teachers. The differences among countries in the proportions of part-time teachers may affect the comparability of data.

Transition from Primary to Secondary Education (TRAN). The definition is the number of students admitted to the first grade of a secondary level of education in a given year, expressed as a percentage of the number of students enrolled in the final grade of the primary level of education in the previous year. High transition rates indicate a high level of continuation from one level of education to the next. They also reflect the intake capacity of the next level of education. Inversely, low transition rates can signal problems in the bridging between two cycles or levels of education, due to either deficiencies in the examination system, or inadequate admission capacity in the higher cycle or level of education, or both.

Primary Education Attainment (ATT). This is the average number of years of primary school completed by the adult (over 15 years of age) population. It is expressed in years. This indicator was used in reviewing the general trends in girls' education. However, as it does not relate directly to either school system or individual student performance, it was not appropriate in examining the effects of crisis over particular periods of time.

The 89 countries that were used by USAID in a study to examine the effectiveness of United States' foreign aid (Crosswell, 1998) were selected to examine trends in girls' education. These countries all were considered developing countries in the 1960s and 1970s and have been recipients of foreign aid. All available data related to the indicators were collected from 1970 through the latest data point in the 1990s. Relatively recent recipients of foreign aid were not included because of the restricted time frame available for examination.

Countries were organized in terms of female gross enrollment ratios in 1970. They were designated as "low access"—female enrollment ratios of 0 to 30%; "intermediate access"—female enrollment ratios of 31% to 75%; "high access"—female enrollment ratios of 76% to 99%; and "full access"—above 100% or more. Comparisons were made on all indicators in terms of aggregate change over 10-year periods.

2. Crisis and Girls' Education

This section describes procedures used to examine trends in girls' education in countries experiencing economic downturns, internal conflict leading to internal displacement of peoples, and epidemic disease. Data were collected within the same 30-year period used to explore the general trends described previously. Changes in education indicators of primary gross enrollment ratio, proportion of a primary cohort reaching fifth grade, apparent gross intake, pupil-teacher ratio, and transition from primary to secondary school were examined in light of several dimensions of each crisis, and descriptive statistics were presented to show trends in national-level girls' education indicators during years in which countries were undergoing a specific crisis.

The same sample of 89 countries used to examine 10-year trends in girls' participation in primary schooling was used. The sources of data included UNICEF, UNESCO, The World Bank, The World Health Organization, and the US Agency for International Development. The exact sources for specific data have been cited with each table where data are presented.

For the purposes of this review, a crisis has been defined as a set of events that unfold over a period of time in a country to cause widespread human, material, and/or environmental losses that exceed the ability of the affected society to maintain normal institutional functions.

The study looked at the phenomenon of crisis as it relates to primary school education, particularly the education of girls. As suggested previously in this document, it has been hypothesized that because of the gap in primary education access and attainment favoring boys in many developing countries, girls' participation in schooling may be at great risk during crisis situations. This hypothesis, however, has not been tested across a number of variables related to participation and over an extended period of time. As we have chosen breadth over depth in an effort to describe the effects of several dimensions of crisis on primary education, the study must be considered exploratory.

The focus of the study was on change in the indicators of educational participation during periods of crisis. When possible, the periods of crisis were empirically defined. In other cases, existing literature about the crises was examined and the commonly accepted dates for the crisis period were used. In cases such as HIV/AIDS in Sub-Saharan Africa, where the crisis is ongoing and growing, the earliest period for which data on the crisis were available to the latest were used.

In order to have the most comprehensive time period possible, 1970 to the present was used for investigation. Yearly national data for education indicators were used to capture effects during a period of crisis. Such data are reported in the summary databases of international organizations such as UNESCO, in varying degrees of completeness, beginning in 1975. As change was measured from the conditions prior to the initiation of the crisis and several of the cases under study took place in the early 1970s, the base year of 1970 was used throughout the analysis.

No standard international definitions of crisis situations were found. Thus, operational definitions of crisis were developed from existing literature and from the examination of national statistics. Definitions were as follows:

Economic Crisis. Economic crisis was defined as a 10% drop in GNP per capita that lasts at least two consecutive years. This represents a severe downturn for a long enough period to affect all but perhaps the wealthiest strata of society. It relates to family choices about school costs and the availability of state revenues to finance schooling. It is measured by taking the change in GNP per capita from the year prior to the downturn for each of the subsequent two years. Dimensions of economic crisis including acuteness of the decline, severity of the decline, rate of the decline, and length of the decline, as well as the relative poverty of a given country during the period of decline, were related to changes in the participation of boys and girls in primary schooling. The operational definitions of these variables are discussed in the section on economic crisis.

Epidemic Disease Crises. Two types of epidemic disease—infant mortality and HIV/AIDS—were studied.

HIV/AIDS Crisis. An 11% prevalence rate in the adult population was used to define crisis countries. Given the relatively recent recognition of the magnitude of the HIV/AIDS epidemic in Sub-Saharan Africa, little empirical data exist for differentiating degrees of seriousness of the problem. Thus, a review of cases was undertaken. As there was a cluster of countries near 11%, then a slight gap to the next set of countries with lower prevalence rates, 11% was used as the operational definition of a crisis situation. Other variables analyzed in relation to students' participation in primary education were: adult prevalence, youth prevalence (male and female), prevalence among pregnant women (rural and urban), and percentage of orphans.

Infant Mortality. The number of deaths to infants under one year of age above 100 per 1,000 live births was used, as this is generally considered to indicate catastrophic levels of infant mortality. Although infant mortality directly determines the reported deaths to infants less than one year of age per 1,000 live births, it reflects a number of disease and health problems, many the result of poverty that may influence enrollment and participation in schooling. Other levels of infant mortality and the length of time that a country is at specific levels were related to changes in education indicators.

Internally Displaced Persons (IDP). In situations of armed conflict, a criterion of 3% of the population outside their homes but within the country was used to define crisis countries. A review of countries currently or recently dealing with internal conflict suggested that an IDP ratio of 3% is a threshold level at which severe regional conflicts have a national impact. The percentages of deaths during the internal conflict and the duration of the conflict were also examined.

The data on the variables and indicators described above were collected and tabulated in Excel and then converted to SPSS. A series of variables was created to subdivide the data by groups of countries according to the 1970 GER for girls, if the country emphasized girls' education and the country's geographic region. Analytic procedures including frequencies, comparisons of means, and correlations were used to identify and track changes in the variables and indicators over the 30-year period. Means were calculated to show the trends for each country, group of countries, and geographical regions, and then mean changes in the education indicators were calculated during the economic, internal conflict, and epidemic disease years for

each of the countries meeting the criteria specified above. Bivariate correlations between the economic crises variables and the changes in the education indicators were used to identify relationships among the mean changes.

As mentioned above, much of the data collected and tabulated were incomplete and specific years were, at times, missing. When change over a specific range of years was to be calculated, if the exact year at the beginning or end of a specific period was missing, the year directly before or after the target year was used.

The collection of education and crises data was initiated in June of 2000, and continued for six months. This permitted several updates and more recent data were added to the files used for the analyses. No new data were added after the established cutoff point. During the data collection, it became apparent that additional data, through refinements and updating, are constantly becoming available. Thus, the data and analyses presented here are a work in progress, and, with new data, some of the trends identified may be altered, undergo changes in magnitude, or be eliminated.

II. Girls' Participation in Primary Education and Girls' Education Programs

As discussed previously, despite the well-documented evidence for the economic and social benefits of female education to a country, multiple supply and demand factors contribute to girls not enrolling in and not completing primary school. Government fiscal and management capability, as well as educational systems that reinforce stereotypes about female roles and low academic performance or provide uncomfortable physical and social environments for girls, have been identified as supply-side constraints. Poverty and the related factors of direct and opportunity costs to families, together with household and community perceptions about the limited relevance of schooling for girls, are seen as depressing demand.

Most countries, however, support education for all children and are engaged in a variety of interventions to promote female education. Creating awareness among public sector officials of the importance of girls' education, creating unbiased learning materials, employing female teachers, providing gender sensitivity training to school staffs, and improving physical facilities in schools are strategies being employed in different countries to make schools more palatable to girls. Lower cost materials and delivery systems, provision of scholarships or fee waivers, and information campaigns that engage community, business, and religious leaders are interventions that have been employed to increase demand.

This section does not examine particular intervention strategies. Rather, it presents general trends in girls' participation in primary education over almost 30 years. National level indicators were used because the interest of the study was in individual and aggregate trends for countries with different levels of participation in 1970. Trends are examined in terms of relative changes in each of the four groups for each 10-year period after 1970. The last year for which data were available in the 1990s is used for the final time period. Data for this period ranged from 1996 to 1998.

Ideally, the analysis would use countries that have complete time series data for the purpose of comparing trends. However, for several of the variables, such as apparent gross intake and transition to secondary education, complete data might be available for only one or two countries. These countries might not be typical of the group because of the fact that they have complete education statistical data. Thus, in an attempt to capture the within-group variation, a mean was taken of all countries for which data were available at any time period. The trends in these means are compared to the complete time series data as part of the discussion of the observed trends.

A. Gross Enrollment Ratios

Table 1 and Table 2 show that girls' access to schooling has increased, on the average, in all of the countries where a gap between boys' and girls' gross enrollment ratios existed in 1970. In each group of countries, the greatest percentage of change in the enrollment of girls and boys occurred in the decade of the 1970s. The low access and intermediate access countries, on average, reached the criteria (30% and 75% girls' gross enrollment ratios, respectively) to be included in the next higher category of countries in that decade. Each group of countries reached these criteria with much lower average gross enrollment ratios than those of the countries originally included in the category. By the late 1990s, the low access countries had not reached the average 1970 gross enrollment ratios of the intermediate access countries. Similarly, the

intermediate countries in the late 1990s are below the average gross enrollment ratios of the high access countries in 1970. Four of the 24 countries in the low access group (Ethiopia, Niger, Mali, and Somalia) were still below 30% enrollment of girls in primary school in the late 1990s, and two intermediate countries (Central African Republic and Democratic Congo) had not surpassed 75% female primary enrollment.

Where the least progress for girls has been made in relation to enrollment of boys is in those countries that, as a group, have traditionally had the greatest difficulty creating access for all children. Although the percentage of girls enrolled in primary school has increased greatly in low access countries, the increase has not kept pace with that of boys. The gender gap in these countries has increased by 1.7% since 1970. In the other two groups of countries without complete enrollment, the gender gap has decreased over the period. Twelve¹ of the 24 countries making up the low access group have greater gaps between male and female primary gross enrollment in the late 1990s than in 1970. These countries as a group have less than half of the female primary school-age population enrolled, even considering that over- and under-aged children attending school are included in the gross enrollment measure. Only 6 of the 24 countries have as many as 60% of girls enrolled in the latest data available.

Given the relatively complete data sets for gross enrollment rates, almost identical trends were found when only mean data from countries with data at all time periods were used. The gender gap increased in low access countries, and countries on the average had not reached the starting average gross enrollment ratio of countries in the next higher group. Low access countries averaged less than 50% enrollment for girls in the late 1990s.²

Table 1: Change Over Time in Average Gross Enrollment Ratios by Gender—Low and Intermediate Access Countries

	GER 1970	GER 1980	GER 1990	GER last 90s	Change 70-90s
Low Access					
Girls	18.10	33.60	42.90	48.40	30.30
Boys	40.30	58.10	66.80	73.30	33.30
G/B Ratio	0.45	0.58	0.64	0.66	0.15
Gender Gap	22.20	24.60	23.90	24.90	1.70
Intermediate Access					
Girls	54.90	75.50	78.20	81.90	27.00
Boys	77.60	93.80	90.70	92.60	15.60
G/B Ratio	0.71	0.80	0.86	0.88	0.17
Gender Gap	22.70	18.30	12.50	12.80	-12.40

Low Access Countries: Afghanistan, Benin, Burkina Faso, Burundi, Cambodia, Chad, Ethiopia, Gambia, Guinea Bissau, Guinea, Liberia, Malawi, Mali, Mauritania, Nepal, Niger, Pakistan, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Uganda, Yemen.
Intermediate Access Countries: Algeria, Bangladesh, Bolivia, Botswana, Central Africa Republic, Congo, D, Cote d'Ivoire, Egypt, Ghana, Guatemala, Haiti, India, Indonesia, Jordan, Kenya, Madagascar, Morocco, Nigeria, Papua New Guinea, Rwanda, Togo, Zimbabwe

Sources:

GER 1970

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

GER 1980, 1990

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.

UNESCO Regional Office for Education in Africa (BREDA). *Report on the State of Education in Africa 1995: Education Strategies for the 90s: Orientations and Achievements*. UNESCO/BREDA. September 1995.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

Table 2: Change Over Time in Average Gross Enrollment Ratios by Gender—High and Complete Access Countries

	GER 1970	GER 1980	GER 1990	GER last 90s	Change 70-90s
High Access					
Girls	89.00	95.00	96.50	97.80	8.80
Boys	96.80	98.80	98.40	99.80	3.00
G/B Ratio	0.92	0.96	0.98	0.98	0.06
Gender Gap	7.80	3.80	1.90	2.00	-5.80
Complete Access					
Girls	103.80	104.00	103.30	102.50	-1.30
Boys	102.50	103.50	103.50	100.90	-1.60
G/B Ratio	1.00	1.00	1.00	1.00	0.00
Gender Gap	-1.30	-0.50	0.20	-1.50	-0.20

High Access Countries: Cameroon, Dominican Republic, Ecuador, El Salvador, Guyana, Honduras, Israel, Malaysia, Mauritius, Mozambique, Myanmar, Nicaragua, Panama, Portugal, Sri Lanka, Swaziland, Thailand, Tunisia, Turkey, Venezuela, Zambia, Peru

Complete Access Countries: Argentina, Belize, Brazil, Chile, Colombia, Congo-Republic, Costa Rica, Cyprus, Greece, Hong Kong, Jamaica, Korea-Republic, Lesotho, Mexico, Paraguay, Philippines, Singapore, South Africa, Spain, Uruguay, Viet Nam

Sources:

GER 1970

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

GER 1980, 1990

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.

UNESCO Regional Office for Education in Africa (BREDA). *Report on the State of Education in Africa 1995: Education Strategies for the 90s: Orientations and Achievements*. UNESCO/BREDA. September 1995.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

Table 2 also illustrates the difficulty in achieving full enrollment even when gross enrollment ratios are used. It can be seen that in the group of high access countries, where 89% of the girls and 96.8% of the boys were enrolled in 1970, all of the eligible children are still not enrolled almost 30 years later. This is, in part, a result of Mozambique meeting the criterion for inclusion in this group in 1970 and subsequently suffering a devastating internal conflict that has left girls' gross enrollment ratios almost 20% below those of 1970 (See Appendix A). However, Turkey and Guyana also have lower enrollment ratios for girls than those reported in 1970, and 10 of the 22 countries in this group do not currently have complete enrollment of primary school girls.

B. Completion Rates

International data on completion rates are only available beginning in 1980. Thus, trends over three points in time are examined. Table 3 and Table 4 show that despite differences in enrollment ratios, completion rates are very similar for boys and girls in sample countries. Even in low and intermediate access countries, about two-thirds of the children who enter school attain fifth grade. There has, however, been little improvement in completion rates over time. In low access countries, average completion rates have decreased over time, largely as a result of very high completion rates reported Burundi and Senegal, which dropped subsequently. As the rate of boys has dropped relative to that of girls, there is a change in favor of girls in the gender gap percentage. However, such negative gains are obviously not desirable.

The change in completion rate among intermediate access countries is very small. When only low and intermediate countries with complete data were considered, the same pattern was found but completion rates were somewhat higher. They averaged about 70% for both boys and girls in the late 1990s. Further, there was little decline in the completion rates of low access countries.

While not guaranteeing 100% completion, high access seems to be associated with relatively high levels of completion. Sixteen of the 20 countries that consistently reported female primary completion rates of 80% or above during the period under study also had gross enrollment ratios of above 90% for the same period.³ However, even in those sample countries where virtually all children are enrolled in primary school, less than 90% reach fifth grade. The data suggest that when full access for girls is reached, female students may have more success remaining in school than their male classmates. In the case of high access countries in the late 1990s and the complete access countries at each time period, girls have higher completion rates than boys. This creates what might be called a reverse gender gap. This trend also occurred when only countries with full data sets were examined.

Table 3: Change Over Time in Average Completion Rates by Gender—Low and Intermediate Access Countries

	CR 1980	CR 1990	CR last 90	Change70s-90s
Low Access				
Girls	71.80	67.20	63.60	-8.20
Boys	73.80	71.90	60.80	-13.00
G/B Ratio	0.97	0.93	1.05	-0.08
Gender Gap	2.00	4.70	-3.70	-5.70
Intermediate Access				
Girls	62.10	61.90	63.70	1.60
Boys	65.80	60.00	67.00	1.20
G/B Ratio	0.94	1.03	0.95	0.01
Gender Gap	3.70	-1.90	3.30	-0.40

Low Access Countries: Afghanistan, Benin, Burkina Faso, Burundi, Cambodia, Chad, Ethiopia, Gambia, Guinea, Malawi, Mali, Mauritania, Nepal, Niger, Senegal, Sudan, Tanzania

Intermediate Access Countries: Algeria, Bangladesh, Botswana, Central Africa Republic, Congo, D, Cote d'Ivoire, Egypt, Guatemala, India, Indonesia, Jordan, Kenya, Madagascar, Morocco, Papua New Guinea, Rwanda, Togo, Zimbabwe

Sources:

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtml>. 22 September 2000.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

Table 4: Change Over Time in Average Completion Rates—High and Complete Access Countries

	CR 1980	CR 1990	CR last 90s	Change 70s-90s
High Access				
Girls	80.90	80.40	83.90	3.00
Boys	81.70	80.60	82.40	0.70
G/B Ratio	0.99	1.00	1.02	0.03
Gender Gap	0.80	0.20	-1.50	-2.30
Complete Access				
Girls	86.30	82.80	87.20	0.90
Boys	83.60	80.20	81.70	-1.90
G/B Ratio	1.03	1.03	1.07	0.04
Gender Gap	-2.70	-2.60	-5.50	-2.80

High Access Countries: Cameroon, Dominican Republic, Ecuador, El Salvador, Guyana, Honduras, Israel, Malaysia, Mauritius, Mozambique, Myanmar, Nicaragua, Panama, Portugal, Sri Lanka, Swaziland, Thailand, Tunisia, Turkey, Venezuela, Zambia, Peru

Complete Access Countries: Argentina, Belize, Brazil, Chile, Colombia, Congo-Republic, Costa Rica, Cyprus, Greece, Hong Kong, Jamaica, Korea-Republic, Lesotho, Mexico, Paraguay, Philippines, Singapore, South Africa, Spain, Uruguay, Viet Nam

Sources:

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtml>. 22 September 2000.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

C. Transition Rates

As might be expected, average transition rates are somewhat lower than completion rates. They do, however, follow a similar trend. With the exception of the low access countries in 1970 and 1980, there is little difference in the transition rates of boys and girls. Transition rates remain low for low- and intermediate-access countries with less than 45% and 61% of children achieving secondary school entry.

Transition to secondary school may be a function of the supply of secondary school places, as the transition rates increase with each group of countries offering increased primary school access. Relatively small gender gaps existed in 1970 in all groups, and these gaps have decreased over time. By the 1990s in intermediate, high, and complete access countries, higher percentages of female students who complete primary schooling go on to secondary school.

Table 5: Change Over Time in Average Transition Rates to Secondary School by Gender—Low and Intermediate Access Countries

	TRAN 1970	TRAN 1980	TRAN 1990	TRAN last 1990s	Change 70s-90s
Low Access					
Girls	37.00	32.70	25.50	42.40	5.40
Boys	49.40	40.20	27.50	44.00	-5.40
G/B Ratio	0.75	0.81	0.93	0.96	0.21
Gender Gap	12.40	7.50	2.00	1.60	-10.80
Intermediate Access					
Girls	41.00	54.60	58.20	60.60	19.60
Boys	43.30	53.60	56.90	59.40	15.10
G/B Ratio	0.95	1.02	1.02	1.02	0.07
Gender Gap	2.30	-1.00	-1.30	-1.20	-3.50

Low Access Countries: Benin, Burkina Faso, Burundi, Chad, Ethiopia, Gambia, Guinea, Mali, Mauritania, Nepal, Niger, Senegal, Sierra Leone, Sudan

Intermediate Access Countries: Algeria, Botswana, Central Africa Republic, Congo, D, Cote d'Ivoire, Guatemala, Haiti, India, Indonesia, Jordan, Kenya, Madagascar, Morocco, Rwanda, Togo

Sources:

TRAN 1970

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

TRAN 1980, 1990

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

Table 6: Change Over Time in Average Transition Rates to Secondary School by Gender—High and Complete Access Countries

	TRAN 1970	TRAN 1980	TRAN 1990	TRAN last 90s	Change 70-90s
High Access					
Girls	48.10	49.70	68.30	77.00	28.90
Boys	53.30	52.60	69.00	75.60	22.30
G/B Ratio	0.90	0.94	0.99	1.02	0.12
Gender Gap	5.20	2.90	0.70	-1.60	-6.80
Complete Access					
Girls	56.60	86.70	86.00	75.90	19.30
Boys	57.40	86.70	85.00	72.70	15.30
G/B Ratio	0.99	1.00	1.02	1.06	0.07
Gender Gap	0.80	0.00	-1.00	-3.20	-4.00

High Access Countries: Cameroon, Dominican Republic, Ecuador, El Salvador, Guyana, Honduras, Israel, Malaysia, Mauritius, Mozambique, Myanmar, Nicaragua, Panama, Portugal, Sri Lanka, Swaziland, Thailand, Tunisia, Turkey, Venezuela, Zambia, Peru

Complete Access Countries: Argentina, Belize, Brazil, Chile, Colombia, Congo-Republic, Costa Rica, Cyprus, Greece, Hong Kong, Jamaica, Korea-Republic, Lesotho, Mexico, Paraguay, Philippines, Singapore, South Africa, Spain, Uruguay, Viet Nam.

Sources:

TRAN 1970

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International

Development. July 2000.

TRAN 1980, 1990

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available:

<http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

No complete data sets on transition existed for the low access countries. The single intermediate country with transition data for all four data points, Jordan, followed a pattern similar to the overall average for those countries. This was also true of the two countries with complete data sets among the high access countries. The decrease in transition rates among the complete access countries appears to be an averaging problem caused by decreases in the Republic of Congo and the addition of several countries reporting transition rates for the first time in the late 1990s. When the one country for which complete data are available, Costa Rica, has increases at each point of time and when these data are averaged with the two countries for which 1970 and late 1990s data are available, final transition rates show increases to 91% for girls and 89% for boys.

D. Apparent First Grade Intake

In low and intermediate access countries, the demand for education, as measured by the percentage of girls enrolled in first grade at the appropriate age, has increased over time. In both groups of countries, the increase has been consistent at each point in time, and, for the period, has increased more than the apparent intake of boys. However, there remains a gap in the demand for primary schooling for girls when compared to boys. In addition, apparent gross intake remains relatively low for girls, with only about 65% of the eligible population enrolled. In the other two groups of countries, demand for primary education for girls has equaled that of boys and, by the late 1990s, all children of both groups appear to enroll at the appropriate age. When change in demand was examined using only countries with complete data sets, the trends were almost identical to those shown in the tables for all four groups of countries.

Demand for primary schooling appears to be largely a function of access. Where access was extremely limited, as in the case of the low access countries in 1970, the AFGI is similar to the gross enrollment ratio for both girls and boys. As availability of school places increases, however, demand, in terms of the appropriate age enrollment in first grade, outstrips GER. In the next two categories of countries, where access is greater, apparent intake is generally higher than GER.

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Table 7: Change Over Time in Average Apparent First Grade Intake Ratios by Gender—Low and Intermediate Countries

	AGI 1970	AGI 1980	AGI 1990	AGI last 1990s	Change 70-90s
Low Access					
Girls	18.40	32.60	50.40	64.60	46.20
Boys	33.40	58.60	72.50	76.90	43.50
G/B Ratio	0.55	0.56	0.70	0.84	0.29
Gender Gap	15.00	25.00	22.10	12.30	-2.70
Intermediate Access					
Girls	67.00	75.00	83.00	91.10	24.10
Boys	89.00	92.00	92.00	94.60	15.60
G/B Ratio	0.75	0.82	0.90	0.96	0.21
Gender Gap	22.00	17.00	9.00	3.50	-18.50

Low Access Countries: Afghanistan, Benin, Burkina Faso, Burundi, Cambodia, Chad, Ethiopia, Gambia, Guinea, Malawi, Mali, Mauritania, Nepal, Niger, Senegal, Sudan, Tanzania

Intermediate Access Countries: Algeria, Botswana, Central Africa Republic, Congo, D, Cote d'Ivoire, Egypt, Ghana, Guatemala, India, Indonesia, Kenya, Madagascar, Morocco, Papua New Guinea, Rwanda, Togo, Zimbabwe

Sources:

AFGI 1970

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

AFGI 1980,1990

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available:

<http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

Table 8: Change Over Time in Average Apparent First Grade Intake Ratios by Gender—High and Complete Access Countries

	AFGI 1970	AFGI 1980	AFGI 1990	AFGI last 90s	Change 70-90s
High Access					
Girls	98.00	96.00	93.00	101.00	3.00
Boys	100.00	101.00	97.00	100.40	0.40
G/B Ratio	0.98	0.96	0.96	1.00	0.02
Gender Gap	2.00	5.00	4.00	-0.60	-2.60
Complete Access					
Girls	105.00	101.50	100.70	101.00	-4.00
Boys	105.00	102.00	102.20	101.70	-3.30
G/B Ratio	1.00	0.99	0.98	1.00	0.00
Gender Gap	0.00	0.50	1.50	0.70	0.70

High Access Countries: Cameroon, Dominican Republic, Ecuador, El Salvador, Guyana, Honduras, Israel, Malaysia, Mauritius, Mozambique, Myanmar, Nicaragua, Panama, Portugal, Sri Lanka, Swaziland, Thailand, Tunisia, Turkey, Venezuela, Zambia, Peru

Complete Access Countries: Argentina, Belize, Brazil, Chile, Colombia, Congo-Republic, Costa Rica, Cyprus, Greece, Hong Kong, Jamaica, Korea-Republic, Lesotho, Mexico, Paraguay, Philippines, Singapore, South Africa, Spain, Uruguay, Viet Nam

Sources:

AFGI 1970

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

AFGI 1980,1990

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available:

<http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

E. Attainment

Table 9 and Table 10 show changes in the average years of primary schooling in the population 15 years of age and older. These data are derived from the work of Barro and Lee (2000) who have produced a number of measures to examine attainment of different levels of education by several population segments in 142 countries. Information on primary schooling from Barro and Lee was used because these data provide a somewhat different perspective than those of yearly school statistics since they relate to the adult population in general. Also they form part of a database that has been under refinement for a number of years and includes adjustments for grade repetition not made in international survey data.

As might be expected, given the trends found in gross enrollment ratios, the gap between males and females in terms of average years of primary education has increased in low access countries. This trend occurs in 9 of the 13 countries for which data are available. In none of these countries is the amount of primary schooling above four years, a level often used as a proxy for functional literacy. In the intermediate access countries, girls and boys have similar trends and the initial gap has been maintained. Eight of the 18 countries in this group showed increases in the gender gap. The adult female population had attained an average of more than four years of schooling in only one country, Botswana. In four countries (Bolivia, Botswana, Egypt, and India) the adult male population, on the average, was estimated to reach this level by the year 2000.

Table 9: Change Over Time in Average Years of Primary Schooling (Attainment) of Population 15 Years of Age and Older by Gender—Low and Intermediate Countries

	ATT15 1970	ATT15 1980	ATT15 1990	ATT15 last 1990s (est.)	Change 70-90s
Low Access					
Girls	0.55	0.65	0.96	1.19	0.64
Boys	1.28	1.47	1.84	2.03	0.75
G/B Ratio	0.44	0.44	0.52	0.59	0.15
Gender Gap	0.74	0.82	0.88	0.84	0.10
Intermediate Access					
Girls	1.02	1.48	2.23	2.66	1.64
Boys	1.89	2.42	3.22	3.54	1.65
G/B Ratio	0.54	0.61	0.69	0.75	0.21
Gender Gap	0.87	0.94	0.99	0.89	0.02

Low Access Countries: Afghanistan, Benin, Burkina Faso, Burundi, Cambodia, Chad, Ethiopia, Gambia, Guinea, Malawi, Mali, Mauritania, Nepal, Niger, Senegal, Sudan, Tanzania

Intermediate Access Countries: Algeria, Botswana, Central Africa Republic, Congo, D, Cote d'Ivoire, Egypt, Ghana, Guatemala, India, Indonesia, Kenya, Madagascar, Morocco, Papua New Guinea, Rwanda, Togo, Zimbabwe

Source:

Barro, Robert and Jong-Wha Lee. *International Data on Educational Attainment Updates and Implications. Working Paper 7911.* Cambridge, MA: National Bureau of Economic Research (NBER), September 2000. *NBER Working Paper Series.* Online. NBER. Available: <http://www.nber.org/papers/w7911>. 3 November 2000.

Table 10: Change Over Time in Average Years of Primary Schooling (Attainment) of Population 15 Years of Age and Older by Gender—High and Complete Access Countries

	ATT15 1970	ATT15 1980	ATT15 1990	ATT15 last 1990s	Change 70-90s
High Access					
Girls	2.34	2.92	3.38	3.79	1.45
Boys	2.98	3.56	3.80	4.12	1.14
G/B Ratio	0.79	0.82	0.89	0.92	0.13
Gender Gap	0.64	0.64	0.42	0.33	-0.31
Complete Access					
Girls	3.39	3.70	3.87	4.50	1.11
Boys	3.77	3.84	4.03	4.61	0.84
G/B Ratio	0.90	0.96	0.96	0.97	0.07
Gender Gap	0.38	0.14	0.15	0.11	-0.27

High Access Countries: Cameroon, Dominican Republic, Ecuador, El Salvador, Guyana, Honduras, Israel, Malaysia, Mauritius, Mozambique, Myanmar, Nicaragua, Panama, Portugal, Sri Lanka, Swaziland, Thailand, Tunisia, Turkey, Venezuela, Zambia, Peru
Complete Access Countries: Argentina, Belize, Brazil, Chile, Colombia, Congo-Republic, Costa Rica, Cyprus, Greece, Hong Kong, Jamaica, Korea-Republic, Lesotho, Mexico, Paraguay, Philippines, Singapore, South Africa, Spain, Uruguay, Viet Nam

Source:

Barro, Robert and Jong-Wha Lee. *International Data on Educational Attainment Updates and Implications. Working Paper 7911*. Cambridge, MA: National Bureau of Economic Research (NBER), September 2000. *NBER Working Paper Series*. Online. NBER. Available: <http://www.nber.org/papers/w7911>. 3 November 2000.

High access countries show greater gains in the female population than in the male. However, on the average, females have not reached the level of males. Only 5 of the 22 countries in this group have had increases in average years of primary schooling that favor boys. The adult female population does not reach completion of fourth grade. Both males and females have attained fifth grade in the complete access countries. However, in four of the countries in this group (Brazil, Colombia, Republic of Congo, and Jamaica), females have not attained four years of schooling. It is also important to note that none of the groups of countries has populations that average full primary education for either males or females. This is true even of the group of countries that had complete enrollment in 1970. Only two of the countries in the sample (Argentina and Israel), average as much as six years of primary school in both the male and female populations.

F. Pupil-Teacher Ratio

Pupil-teacher ratios dropped in all but low access countries over the 30 years included in the study. The average drop was greater as access increased. Only the complete access countries showed consistent drops over each time period. Low, intermediate, and high access countries all had increases in pupil-teacher ratios during the 1990s.

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Table 11: Change Over Time in Average Pupil-Teacher Ratio

	PTR 1970	PTR 1980	PTR 1990	PTR last 1990s	Change 70-90
Low Access	39.40	39.80	43.00	44.30	4.90
Intermediate Access	42.30	41.10	37.20	38.00	-4.30
High Access	38.70	33.50	31.00	31.90	-6.80
Complete Access	35.90	32.80	31.00	27.50	-8.40

Low Access Countries: Afghanistan, Benin, Burkina Faso, Burundi, Cambodia, Chad, Ethiopia, Gambia, Guinea, Liberia, Malawi, Mali, Mauritania, Nepal, Niger, Pakistan, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Uganda, Yemen

Intermediate Access Countries: Algeria, Bangladesh, Bolivia, Botswana, Central Africa Republic, Congo, D, Cote d'Ivoire, Egypt, Ghana, Guatemala, Haiti, India, Indonesia, Jordan, Kenya, Madagascar, Morocco, Nigeria, Papua New Guinea, Rwanda, Togo, Zimbabwe

Sources:

PTR 1970

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

PTR 1980, 1990

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtml>. 22 September 2000.

UNESCO Regional Office for Education in Africa (BREDA). *Report on the State of Education in Africa 1995: Education Strategies for the 90s: Orientations and Achievements*. UNESCO/BREDA. September 1995.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

G. Discussion

The problem of girls' access to primary schooling has not been solved. Although access to primary education has increased greatly for girls in most developing countries, it remains below 50% in countries where access to primary schooling has traditionally been low. In addition, girls' access, on the average, has not increased as rapidly as that of boys' over the last three decades. This is true even in countries that have supported programs that emphasized the importance of girls' schooling.

Full enrollment of the primary school population does not occur rapidly. Despite efforts such as Education For All and the international attention given to girls' education over the last decade, even countries with relatively high gross enrollment ratios for girls have not, on the average, reached complete primary school enrollment for either boys or girls.

The success of girls who enroll in primary school is similar to that of boys. The percentages of girls and boys attaining fifth grade and enrolling in secondary school after completion of primary school are similar within each group of countries. In all of the groups of countries, there has been a decline in the gender gap in both completion and transition to secondary school. In countries with full or close to full enrollment, girls have slightly higher rates than boys.

Full enrollment does not mean full attainment. In countries with full enrollment in primary school, less than 90% of students reach fifth grade and this percentage goes down to about 60% in low and intermediate access countries. Increasing access to primary education may not influence completion until high levels of enrollment have been reached, because there has

been little change over time in completion rates, on the average, within countries of a particular access level, despite growing enrollment.

Achievement, in terms of secondary school enrollment of primary school graduates, has a pattern similar to that of gross enrollment ratios. That is, girls and boys have had consistent, average gains in each group of countries. The exception has been the complete access countries where there has been a decline in the 1990s. This suggests that in countries with less than complete enrollment, secondary school participation may be a function of available space, as well as mastery of the primary school curriculum.

Demand for educating girls, as measured by enrollment in first grade at the appropriate age, has remained low in low-access countries. This does not seem to be a function of the barriers traditionally associated with girls' access to schooling, such as need for household labor, high opportunity costs, or household perceptions of schooling as irrelevant for girls, as demand for boys' schooling has decreased in the same period. Rather, it may be associated with the economic and social difficulties faced by many of the countries making up this group.

Investment in educational quality, in terms of pupil-teacher ratio, appears to be a function of increased access. Where access remains low, pupil-teacher ratios increase over time. This ratio is subject to fluctuations, in given time periods, in countries without complete access.

Functional literacy, especially among women, appears to be low in the adult populations of most developing countries. Although there have been gains in the average years of primary schooling across countries, only in those that had complete enrollment in 1970 is the average years of schooling equivalent to females reaching fifth grade. Gender differences in the average number of years of primary schooling in the adult population have increased in low access countries.

H. Implications

While it is recognized that past trends may not predict those of the future, the results in this section suggest a number of implications for development efforts directed at improving the participation of girls in primary schooling. First, there is a need to focus on low access countries. The emphasis should be on increasing access in these countries, as relative increases in access are likely to have an effect on the absolute number of girls completing primary school. Attention should also be given to improving awareness of the importance of educating girls, as demand for female primary schooling is relatively low.

It would seem that to have national impact, investment in girls' education must be increased. Despite emphasis on educating girls in programs of a number of the sample countries, impact appears minimal. This may be a result of the limited scale of the programs, suggesting that greater investment is needed, especially in those countries that have made the least progress.

Those countries that have relatively low enrollments are unlikely to have high completion rates for the relatively fewer children in school. Four-fifths of the countries where completion rates were consistently above 80% also had gross enrollment ratios of above 90%. This suggests

that there may be a “critical mass” necessary in terms of access before change in completion rates takes place.

The lack of adult populations at a level that is considered functional literacy, even in high access countries, argues for a focus on school completion for girls. It also suggests, however, that attention should be given to the out-of-school population.

III. Crisis Situations

A. Introduction

Crisis, in the context of international development, has often been viewed from the perspective of providing humanitarian aid to the victims of a crisis situation. Thus, crisis in this context is often seen as a rapidly unfolding set of events, which lead to considerable breakdown of authority. This breakdown results in conflict/violence that requires response from multiple international agencies providing humanitarian assistance (United Nations, 1995). Much of the work related to education and crisis has been with this perspective. Education is seen as a means to provide displaced communities with a sense of normalcy while international attention focuses on immediate survival needs (McClure, 1999) and as a tool to assist in recovery during transition out of a crisis situation. Attention has been paid to developing educational service delivery models for individuals and communities in crisis and transition situations (Sommers and Williams, 1999; Bethke, 1999; Oulai, 2000).

Others have suggested that crises can be distinguished in terms of the time required for a crisis situation to develop. They categorize crisis situations in terms of rapid or slow onset (Mock and Lyerly, 1999). Whereas crises with rapid onsets are seen as generally one-time events such as a natural disaster or external invasion, slow-onset crises, such as famine or internal conflict, are described as emerging gradually and are felt to be more predictable. Rapid-onset crises are more likely to be regional in nature, while crises with longer onset periods are considered to have widespread national effects. Thus, it is felt that crisis with a longer gestation period may have differential effects on institutions, such as education, over time.

The principal distinction made between the terms “crisis” and “disaster” is the degree of societal breakdown, which inhibits local or national response. Disasters are generally seen as serious disruptions in the functioning of a society that cause human, material, or environmental losses which tax the resources of the society, but do not have the connotation of massive breakdown of authority (MCDA, 1995). They also tend to be of relatively short duration and are often regional in nature. These distinctions led to the decision to exclude natural disasters from this review, because they were seen as unlikely to have lasting, measurable effects on educational systems.

This review examines the phenomena of severe societal stress as it relates to primary school education, particularly the education of girls. As the focus is on the national impact of the phenomena, the term “crisis” has been used and several dimensions or causes of crisis are studied. Within this framework, the working definition of crisis is: “a set of events that unfold over a period of time in a country to cause widespread human, material, and/or environmental losses which exceed the ability of the affected society to maintain normal institutional functions.”

The following sections present the trends found between the three dimensions of crisis mentioned previously and national education statistics in selected countries. The first section discusses severe economic downturn, and subsequent sections deal with internal conflict and epidemic disease, respectively. Each section begins with a profile of national education statistics in affected countries during the crisis period. This is followed by comparisons of trends in girls’

education in countries experiencing crisis situations with similar countries that have experienced such situations. Sections end with a discussion of the trends and their implications.

B. Economic Crisis

Much of the discussion surrounding macroeconomic shock is on the effects of such shocks on the poor. It is argued that crises have differential effects by sector of employment, level of wealth, geographic location, and gender (Ferreira, et al., 2000). The poor are seen as having the least ability to adjust to relative price changes, reduced demand for labor, inflation, and cuts in public expenditure. Poor households may respond by cutting the nutritional intake of infants or taking children out of school to work which can have lasting effects on their future learning and income-earning abilities.

Studies of household survey data during crisis periods are the principal source of information on the relationship between economic shock and schooling. Ferreira (1995) studying structural adjustment in Tanzania shows that enrollment decreased over the period of adjustment and that the poor and females were especially hard hit. Ablett and Slengesol (2000) found that, with the exception of Indonesia where girls' enrollment declined to a greater degree at the primary level and boys' enrollment at the junior secondary level, there were no gender differences in the five (Indonesia, Thailand, Korea, Philippines, and Malaysia) East Asian countries studied. The general lack of decline was attributed to the continued commitment to education by governments, as well as household and school level responses to maintain children in school. However, in all countries, the poor were affected to a greater extent in their education decisions. Another examination of the Indonesia Family Life Study supports this contention by showing that the amount of funds allocated for schooling by poor households put girls at a disadvantage (Frankenberg, et al., 1999).

While not specifically addressing crisis situations, Filmer (1999) uses Demographic Health Survey (DHS) data to show the differential effects of wealth level on girls' participation in schooling. The author argues that even in countries with a relatively small gender gap there may be large regional inequities. It was beyond the scope of this review to examine regional disparities within individual countries. However, the importance of poverty in girls' education participation led to the creation of a national poverty variable based on the average GNP per capita rank of a country during the crisis period. Key variables related to economic crisis were:

1. Economic Decline

GNP/Capita (\$). This variable indicates individual material welfare. It provides the most complete yearly data related to individual wealth at a national level. GNP per capita is the gross national product, converted to United States dollars using the World Bank Atlas method, divided by the mid-year population. GNP is the sum of the gross value added by all resident producers plus any taxes (less subsidies) that are not included in the valuation of output plus net receipts of primary income (employee compensation and property income) from nonresident sources.

Economic Crisis. Economic crisis was defined as a 10% drop in GNP per capita that lasts at least two consecutive years. This represents a severe downturn for a long enough period to

affect all but perhaps the wealthiest strata of society. It relates to family choices about school costs and the availability of state revenues to finance schooling. It is measured by taking the change in GNP per capita from the year prior to the downturn for each of the subsequent two years.

Key variables were constructed to measure different dimensions of economic crisis as it relates to primary schooling of boys and girls. These are:

Acuteness of decline (Perdown). This variable measures the initial impact of the downturn. It is the total percentage drop in GNP per capita during the first two years of the economic decline.

Overall Severity (Totdown). This measures the additive effect of the downturn. It is the total percentage decline over all years before an upturn in GNP per capita.

Length of decline (NumYears). This variable measures the duration of the decline. It is the total number of years before an upturn in GNP per capita.

Rate of decline (Achangdt). This variable indicates the slope or consistency of the decline. It is the average annual change during the downturn. It is measured by taking the total percentage decrease in GNP per capita before and upturn divided by the total number of years of downturn.

Relative Poverty (Rank). Given the relatively long time frame of the study, GNP per capita data were not directly comparable and other possible indexes did not cover the 30-year period. Thus, in order to have a comparable measure/scale of poverty (or individual family wealth) over time, a simple yearly ranking of sample countries was created. As movement on the scale was minimal, average rank during the crisis period was used.

2. Profile of Economic Crisis

Thirty-six countries met the criterion for economic crisis. Three countries (Guyana, Madagascar, and Peru) actually had two different periods in the last 30 years that met the criterion. Those countries that experienced economic crisis were fairly evenly divided among the four levels of access defined. Eight were low access countries, ten were intermediate access countries, eight were high access, and ten had complete access of 100% or more gross enrollment ratios for girls in 1970.

Table 12: Economic Crisis Countries

Crisis Recovery	Country	Crisis Years	No. of Years	GNP/Capita Drop	Recovery Time	Years Since Crisis
Recovery	Brazil	90-91	2.0	11.60	6.0	9.0
	Chad	79-81	3.0	31.40	13.0	19.0
	Costa Rica	82-83	2.0	11.30	4.0	17.0
	Ethiopia	91-92	2.0	16.80	4.0	8.0
	Guyana	82-84	3.0	26.10	11.0	16.0
	Mozambique	83-86	2.0	27.10	10.0	14.0
	Panama	88-89	2.0	22.10	4.0	11.0
	Peru	83-84	3.0	24.20	12.0	16.0
	Philippines	84-85	2.0	20.60	12.0	15.0
	Uruguay	82-84	3.0	25.60	8.0	16.0
	Total			2.4	21.68	8.4
No recovery	Burundi	96-97	2.00	12.30	0.0	3.0
	Cameroon	88-94	7.00	16.10	0.0	6.0
	Chile	82-83	2.00	20.60	0.0	17.0
	Congo	88-91	4.00	18.00	0.0	9.0
	Congo, D. R.	90-97	8.00	21.40	0.0	3.0
	Cote d'Ivoire	80-85	6.00	15.00	0.0	5.0
	El Salvador	80-82	3.00	26.00	0.0	18.0
	Gambia	85-86	2.00	21.10	0.0	14.0
	Ghana	75-76	2.00	19.70	0.0	24.0
	Greece	91-92	2.00	10.10	0.0	8.0
	Haiti	92-94	3.00	19.40	0.0	6.0
	Jamaica	76-80	5.00	14.90	0.0	20.0
	Jordan	89-91	3.00	24.70	0.0	9.0
	Madagascar	81-87	7.00	17.80	0.0	13.0
	Mali	80-82	3.00	14.30	0.0	18.0
	Mexico	82-83	2.00	11.20	0.0	17.0
	Nicaragua	78-89	12.00	31.20	0.0	11.0
	Niger	84-85	2.00	15.60	0.0	15.0
	Nigeria	80-84	5.00	22.80	0.0	16.0
	Paraguay	82-84	3.00	12.20	0.0	16.0
	Rwanda	93-94	2.00	49.30	0.0	6.0
	Senegal	77-78	2.00	12.30	0.0	22.0
	Sierra Leone	92-95	4.00	14.40	0.0	5.0
	Togo	81-83	3.00	13.70	0.0	17.0
	Zambia	82-86	5.00	15.60	0.0	14.0
Zimbabwe	92-93	2.00	12.90	0.0	7.0	
Total			3.74	18.89	0.0	13.0

Source:
 Development Data Group. The 1999 World Development Indicators. CD-ROM. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 1999.

As can be seen from Table 12, ten countries recovered at least to their pre-crisis economic level. The crisis in these countries tended to be earlier than in those countries that had not recovered. Only two of the ten recovered countries had crises that extended into the 1990s, whereas 40% or 10 of the 26 remaining countries had economic crises that took place or continued into that decade. The economic crises of the countries that have not yet recovered were, on the average, more severe. They averaged 3.7 years of continuing economic decline compared to 2.4 years for those countries that recovered. In addition, the average drop in GNP per capita was 18.9% compared to 21.7% in the other countries.

Several countries, notably Nicaragua, the Democratic Republic of the Congo, Cameroon, and Madagascar, have had almost continuous downturns, which might be called "chronic" economic crisis. African countries make up eight of the ten countries experiencing economic crisis in the 1990s.

3. Girls' Education

The lack of educational statistics on the girls' education indicators makes the use of inferential statistical analysis difficult. However, descriptive statistics showing the average change the educational situation of girls during situations of national economic crisis reveal several consistent trends. As can be seen from Table 18, economic crisis appears to have less impact on girls' education than on that of boys'. Gross enrollment ratios for both groups of countries decline. However, those of girls decline less than the GERs of boys, on the average.

The trend in favor of girls continues on the other indicators. Girls, on the average, were less affected in terms of completion in the countries that did not recover from crises; no data were available for the eight countries in the recovered group. Changes in the rates of transition to secondary school show that compared to boys, girls have been more negatively affected. Most of this difference can be accounted for by the 21% drop during the crisis in the Republic of the Congo. The apparent gross intake to first grade increased on the average for both genders in the countries that went on to recover from their crises, and the increase for girls was almost double that of boys. In countries that did not recover, both genders experienced decreases but boys showed the largest decrease. Economic crisis appears to have little effect on teacher-student ratio, as changes, on the average, are small, and the direction of the change does not seem to be influenced by corresponding changes in GER.

Table 13: Economic Crisis Recovery and Education Indicators

Crisis Recovery	Country	GER Change		Completion Change		Transition to Secondary		Apparent Gross Intake		PTR
		Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	
Recovery	Brazil									-0.30
	Costa Rica	-6.10	-6.20			1.00	2.00	-12.00	-16.00	-1.10
	Ethiopia	-7.00	-13.00							-10.50
	Guyana	0.40	-1.00							
	Mozambique	-3.20	-7.70							0.30
	Panama	0.40	-1.10							0.80
	Philippines	-0.70	-2.00					4.00	2.00	-0.10
	Uruguay	-16.70	-17.60					25.00	23.00	
	Average	-4.70	-6.94			1.00	2.00	5.67	3.00	-1.82
No recovery	Argentina	-0.20	0.20							
	Cameroon	-13.40	-10.70							
	Chile	-2.00	-1.40							
	Congo	-13.40	-15.00	14.00	-2.20	-21.00	-8.00	-10.00	-11.00	-2.90
	Congo, D. Rep.	-1.30								16.70
	Cote d'Ivoire	-0.60	-5.90	-10.50	-5.90	1.00	-3.00	-3.00	-7.00	-7.50
	El Salvador	-6.70	-7.50							-2.60
	Gambia	0.80	-1.80							3.40
	Ghana	0.00	1.00					5.00	0.00	-0.70
	Greece	-3.30	-3.20							
	Guinea-Bissau									-12.00
	Jamaica	5.70	5.70					1.00	0.00	9.10
	Madagascar	-26.10	-24.50							-0.20
	Mali	-1.10	-1.60			4.00	4.00			-5.20
	Mexico	0.00	0.90							-1.50
	Nicaragua	11.40	5.40							-6.90
	Niger	0.70	0.70	2.60	-16.40			-1.00	-4.00	-2.10
	Nigeria	11.60	9.20							2.80
	Paraguay	-0.30	0.10	3.90	2.10			-2.00	-2.00	-1.50
	Senegal	0.00	3.00							
Togo	-16.00	-26.00	-9.50	-6.40	-4.00	-3.00	-9.00	-5.00	-10.10	
Zambia	16.60	12.90							-2.60	
Zimbabwe	-5.70	-2.80							0.30	
Average	-1.97	-2.92	0.10	-5.76	-5.00	-2.50	-2.71	-4.14	-1.31	

Source:

Development Data Group. *The 1999 World Development Indicators*. CD-ROM. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 1999.

Development Data Group: Development Economics and Operational Quality and Knowledge Services, Africa Region. *The World Bank Africa Database 2000*. CD-ROM. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 2000.

Table 14 shows that countries with low and intermediate access at the time of the crisis show that girls' gross enrollment ratios had a somewhat lower negative change on the average than did boys'. In the high access countries, boys had a slight decrease while girls experienced a

small increase, and in the complete access group both genders decreased by the same amount. The dearth of data on completion rates has made interpretation difficult, except to say that in Niger boys showed a large decrease as compared to a small increase for girls. In the two intermediate access countries with data, both genders decreased, but the girls' drop was substantially greater than boys. The data on transition to secondary is too fragmentary for interpretation. The apparent gross intake to first grade in three intermediate access countries show that both boys and girls decreased in two of the three countries but the decrease was greater for boys in one, reversed in another, and an increase for girls in the third. In the complete access countries, the gross intake decreased for both in three out of six countries with no large difference between boys and girls. The pupil-teacher ratio decreased in the low and high access countries while remaining essentially unchanged in the other two groups.

Table 14: Access Groups and Change in Education Indicators

Country Classification	Country	GER Change		Completion Change		Transition to Secondary Change		Apparent Gross Intake Change		PTR
		Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	
Low access	Ethiopia	-7.00	-13.00							-10.50
	Gambia	0.80	-1.80							3.40
	Guinea-Bissau									-12.00
	Mali	-1.10	-1.60			4.00	4.00			-5.20
	Niger	0.70	0.70	2.60	-16.40			-1.00	-4.00	-2.10
	Senegal	0.00	3.00							
	Average	-1.32	-2.54	2.60	-16.40	4.00	4.00	-1.00	-4.00	-5.28
Intermediate access	Congo, D. R.	-1.30								16.70
	Cote d'Ivoire	-0.60	-5.90	-10.50	-5.90	1.00	-3.00	-3.00	-7.00	-7.50
	Ghana	0.00	1.00					5.00	0.00	-0.70
	Madagascar	-26.10	-24.50							-0.20
	Nigeria	11.60	9.20							2.80
	Togo	-16.00	-26.00	-9.50	-6.40	-4.00	-3.00	-9.00	-5.00	-10.10
	Average	-5.44	-8.17	-10.00	-6.15	-1.50	-3.00	-2.33	-4.00	0.19
High access	Cameroon	-13.40	-10.70							
	El Salvador	-6.70	-7.50							-2.60
	Guyana	0.40	-1.00							
	Mozambique	-3.20	-7.70							0.30
	Nicaragua	11.40	5.40							-6.90
	Panama	0.40	-1.10							0.80
	Average	0.79	-1.39							-2.20
Complete access	Argentina	-0.20	0.20							
	Brazil									-0.30
	Chile	-2.00	-1.40							
	Congo	-13.40	-15.00	14.00	-2.20	-21.00	-8.00	-10.00	-11.00	-2.90
	Costa Rica	-6.10	-6.20			1.00	2.00	-12.00	-16.00	-1.10
	Greece	-3.30	-3.20							
	Jamaica	5.70	5.70					1.00	0.00	9.10
	Mexico	0.00	0.90							-1.50
	Paraguay	-0.30	0.10	3.90	2.10			-2.00	-2.00	-1.50
	Philippines	-0.70	-2.00					4.00	2.00	-0.10
	Average	-3.70	-3.85	8.95	-0.05	-10.00	-3.00	1.00	-0.67	0.24

Source: Development Data Group. *The 1999 World Development Indicators*. CD-ROM. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 1999.
 Development Data Group: Development Economics and Operational Quality and Knowledge Services, Africa Region. *The World Bank Africa Database 2000*. CD-ROM. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 2000.

Correlation coefficients were computed to examine the relationship between change in the five education indicators and the key economic crisis variables. Initial correlations were run using only those countries that met the crisis criterion. No significant relationships were found among the crisis countries in terms of change in the education indicators. This may have been the result of the similarity of impact on the education systems of countries undergoing a similar phenomenon. In order to increase the variation, all countries that had two consecutive years of economic downturn were included in the analysis.

Table 15 presents the results of the correlation for the 84 countries that met the criterion of a 2-year economic downturn during the period under study. For this group of countries as a whole, economic downturn appears unrelated to either boys' or girls' access to primary schooling. However, the severity of economic downturn has a significant negative relationship to student persistence as measured by attainment of fifth grade, and on achievement as measured by transition to secondary education. The acuteness of the downturn, the total magnitude of an economic downturn, and the number of years that the decline lasts are negatively correlated with the change in boys' and girls' completion rates during the period. The total drop in GNP per capita and the duration of the decline also have significant negative correlations with boys' transition to secondary school. Girls' transition rates, on the other hand, are affected by the acuteness of the decline. The magnitude and length of the decline are also related to decreased demand for primary education for girls but do not approach significance on this indicator with boys.

Table 15: Correlation of Economic and Education Indicators

Correlations		GER		AGI		Completion		Transition		PTR
		Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	
GNP/pc % decrease	CC	0.03	-0.02	-0.11	0.15	-0.29	-0.30	-0.27	0.04	-0.16
	Sig.	0.41	0.43	0.29	0.24	0.06	0.04	0.09	0.43	0.11
	N	64	67	27	24	32	34	25	24	63
Total % down	CC	0.07	0.01	-0.37	0.07	-0.62	-0.46	-0.05	-0.46	-0.12
	Sig.	0.30	0.47	0.03	0.38	0.00	0.00	0.41	0.01	0.17
	N	64	67	27	24	32	34	25	24	63
Number of Years	CC	0.14	0.04	-0.29	0.03	-0.53	-0.45	-0.14	-0.74	0.06
	Sig.	0.13	0.39	0.07	0.44	0.00	0.00	0.26	0.00	0.32
	N	64	67	27	24	32	34	25	24	63
Av. Change during Downturn	CC	-0.12	-0.14	-0.04	0.56	0.02	0.02	-0.35	0.29	0.20
	Sig.	0.21	0.18	0.43	0.00	0.46	0.47	0.08	0.11	0.10
	N	44	46	22	20	24	25	18	19	42

Source:

Development Data Group. *The 1999 World Development Indicators*. CD-ROM. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 1999.

Development Data Group: Development Economics and Operational Quality and Knowledge Services, Africa Region. *The World Bank Africa Database 2000*. CD-ROM. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 2000.

Given the differences found in the patterns of change on education indicators among countries depending on initial access in 1970, correlations by access level were also computed. The data in Table 16 show that the relationship of economic decline to educational performance

also differs by access level. Economic downturn, in terms of acuteness of the decline in the first two years, is negatively correlated with the enrollment of boys and girls in countries where access is low. That is, the higher the percentage decline over two years, the greater the drop in the percentage of the school-age population enrolled in primary school during the period of downturn. The acuteness of the downturn is more highly correlated with a decrease in girls' access (-.76) than with that of boys' (-.59). A significant correlation was also found between the number of years of downturn and the change in boys' gross enrollment ratios. In this case, the relationship was positive, suggesting the supply of schooling tends to recover if the downturn is of relatively long duration. The only additional significant relationship in terms of access occurs with the intermediate access countries. In this case, gross enrollment ratios for girls and boys correlate negatively with countries' average economic rank among the other sample countries during the period of downturn. This means that the higher a country's poverty rank, the greater the decrease in gross enrollment ratios during the period of economic decline.

Changes in completion rates for boys correlate negatively with the acuteness of the economic decline and its overall severity in low access countries. High negative correlation coefficients are also found for the duration of the downturn and the relative economic rank of the country during the downturn period. They do not, however, reach significance. Changes in girls' completion rates during economic downturn do not appear to be related to acuteness, severity, or duration of the decline in low access countries. In intermediate access countries, on the other hand, changes in girls' completion rates have a relatively high negative relationship with all of the economic decline variables. The correlation is significant for the severity and duration of the decline as well as the economic rank of the country. Boys' completion rates have a similar pattern but drop significantly only in terms of their relation to the duration of the decline. In high and complete access countries, economic decline is not negatively related to completion. Lack of change among the high access countries did not yield sufficient cases for analysis. A positive relationship was found between the economic indicators and change in girls' completion rates in complete access countries, whereas no meaningful correlations were found with boys'.

Table 16: Correlation of Changes in Economic and Education Indicators

Country Classification			GERFCH	GERMCH	COFCH	COMCH	TRANFCH	TRANMCH	AGIFCH	AGIMCH	PTRCH
		Variables in Correlation Matrix									
Low access	PERDOW2	Pearson Correlation	-0.75973	-0.59453	0.06421	-0.87544			0.365889	0.232251	-0.43216
		Sig. (1-tailed)	0.003335	0.026862	0.451909	0.011153			0.186364	0.289968	0.05384
		N	11	11	6	6			8	8	15
	TOTDOWN	Pearson Correlation	-0.51549	-0.2141	0.06421	-0.87544			0.295945	0.039857	-0.37634
		Sig. (1-tailed)	0.0523	0.263639	0.451909	0.011153			0.238326	0.462674	0.083399
		N	11	11	6	6			8	8	15
	NUMYEARS	Pearson Correlation	0.45866	0.759355	-0.31207	-0.63246			0.487244	0.112141	-0.12246
		Sig. (1-tailed)	0.07796	0.003356	0.273545	0.088904			0.110356	0.395746	0.331856
		N	11	11	6	6			8	8	15
	GNPDRNK	Pearson Correlation	0.044153	-0.2732	-0.11362	-0.74948			0.421553	0.13201	-0.14555
		Sig. (1-tailed)	0.451801	0.222506	0.427825	0.072366			0.173102	0.38892	0.309777
		N	10	10	5	5			7	7	14
Intermediate access	PERDOW2	Pearson Correlation	-0.08427	-0.04687	-0.56299	-0.35533	-0.26641	-0.72885	0.001806	-0.20663	0.218729
		Sig. (1-tailed)	0.397287	0.445576	0.073118	0.193857	0.3049198	0.050159	0.498467	0.328327	0.216756
		N	12	11	8	8	6	6	7	7	15
	TOTDOWN	Pearson Correlation	-0.03574	-0.20816	-0.74913	-0.55963	-0.149794	-0.84692	-0.29013	-0.4953	0.520503
		Sig. (1-tailed)	0.456097	0.269536	0.016209	0.074598	0.388495	0.016677	0.26396	0.129187	0.023339
		N	12	11	8	8	6	6	7	7	15
	NUMYEARS	Pearson Correlation	-0.19667	-0.31114	-0.89667	-0.78058	-0.01491	-0.76561	-0.23628	-0.41606	0.334529
		Sig. (1-tailed)	0.270061	0.175842	0.001274	0.011128	0.488818	0.037986	0.30499	0.176592	0.111475
		N	12	11	8	8	6	6	7	7	15
	GNPDRNK	Pearson Correlation	-0.5248	-0.72733	-0.71934	-0.57518	-0.511407	-0.68168	-0.13133	-0.17432	0.217191
		Sig. (1-tailed)	0.039899	0.005598	0.022143	0.067894	0.1498825	0.067932	0.389479	0.354268	0.227875
		N	12	11	8	8	6	6	7	7	14
High access	PERDOW2	Pearson Correlation	0.10306	0.000341			-0.707628	-0.374			-0.55591
		Sig. (1-tailed)	0.368797	0.499559			0.0376373	0.204267			0.019501
		N	13	13			7	7			14
	TOTDOWN	Pearson Correlation	0.179727	0.056742			-0.997116	-0.94706			-0.66078
		Sig. (1-tailed)	0.278421	0.426961			0.00	0.000602			0.005046
		N	13	13			7	7			14
	NUMYEARS	Pearson Correlation	0.226602	0.119477			-0.988416	-0.9688			-0.56283
		Sig. (1-tailed)	0.228296	0.348723			1.378E-05	0.000162			0.018066
		N	13	13			7	7			14
	GNPDRNK	Pearson Correlation	0.267869	0.202339			-0.503834	-0.12489			-0.48996
		Sig. (1-tailed)	0.188124	0.253682			0.1244795	0.394816			0.037661
		N	13	13			7	7			14

Country Classification			GERFCH	GERMCH	COFCH	COMCH	TRANFCH	TRANMCH	AGIFCH	AGIMCH	PTRCH
		Variables in Correlation Matrix									
Complete access	PERDOW2	Pearson Correlation	-0.1861	-0.21032	0.567638	-0.11739	-0.790485	-0.66582	0.40977	0.33074	0.118349
		Sig. (1-tailed)	0.262056	0.235239	0.091888	0.401039	0.0306231	0.074425	0.105357	0.160245	0.337213
		N	14	14	7	7	6	6	11	11	15
	TOTDOWN	Pearson Correlation	-0.03717	-0.08937	0.593311	-0.09205	-0.831323	-0.7163	0.399476	0.333063	0.469809
		Sig. (1-tailed)	0.449807	0.380634	0.080123	0.422197	0.0201392	0.054657	0.111766	0.158447	0.038612
		N	14	14	7	7	6	6	11	11	15
	NUMYEARS	Pearson Correlation	-0.0438	-0.10934	0.846366	0.343938	-0.855301	-0.74673	0.032245	-0.01295	0.320609
		Sig. (1-tailed)	0.440908	0.354915	0.008164	0.225013	0.0149459	0.044048	0.462509	0.484926	0.121995
		N	14	14	7	7	6	6	11	11	15
	GNPDRNK	Pearson Correlation	-0.10582	-0.04665	0.882112	0.255736	-0.71753	-0.58249	-0.38363	-0.428	-0.21099
		Sig. (1-tailed)	0.359406	0.437088	0.010014	0.312379	0.0861877	0.15137	0.136898	0.108614	0.234514
		N	14	14	6	6	5	5	10	10	14

Bold numbers indicate correlation coefficients with a significance of ≤ 0.05 (1-tailed)
A Cannot be computed because at least one of the variables is constant.

Change in transition to secondary school is related to the economic decline indicators in countries that have obtained at least 70% access for girls. In intermediate access countries, significant negative correlations occur with boys on three of the four indicators and approach significance on the fourth indicator. With high access countries, the drop in girls' transition rates is correlated with the acuteness, severity, and duration of the decline. The drop in boys' transition is significantly related to severity and duration. Complete access countries also show a greater relationship between a drop in girls' transition to secondary school and the economic decline variables than with boys', although the trend is similar for both genders.

The relationships between the severity of the economic crisis and demand for girls' schooling, found in the overall analysis, do not seem to be a function of the level of access that girls have to primary education. No significant relationships were found for any of the groups on this indicator. Consistent relationships in terms of pupil-teacher ratio were found only with the high access group.

Countries with severe economic declines, which we have defined as crisis situations, were compared to those countries in the sample that had experienced decline for two consecutive years but did not reach crisis proportions. Table 17 shows the results of t-tests comparing the means of those two groups. Severe economic crisis significantly affects gross enrollment ratios. The change in GER is negative for both girls and boys in the crisis countries, whereas, it remains positive in the countries that experienced less severe economic declines. Mean differences on the other education indicators are not significant. This may be a result of the small number of cases for all indicators except GER.

Table 17: Differences in Education and Economic Indicators in Crisis and Non-Crisis Countries

	10% GNP/capita drop for two years	N	Mean	Std. Deviation	Std. Error Mean
PERDOW2	drop	39	19.367	7.439	1.191
	no drop	29	6.521	3.253	0.604
TOTDOWN	drop	39	27.103	16.244	2.601
	no drop	29	9.983	7.318	1.359
NUMYEARS	drop	39	3.380	2.140	0.340
	no drop	29	3.000	1.630	0.300
GERFCH	drop	29	-2.628	8.746	1.624
	no drop	21	1.367	6.027	1.315
GERMCH	drop	28	-3.925	9.043	1.709
	no drop	21	1.005	8.395	1.832
COFCH	drop	5	0.100	10.230	4.570
	no drop	6	-2.450	15.060	6.150
COMCH	drop	5	-5.760	6.860	3.070
	no drop	6	-2.400	18.000	7.350
TRANFCH	drop	5	-3.800	10.030	4.490
	no drop	3	-6.330	7.020	4.060
TRANMCH	drop	5	-1.600	4.720	2.110
	no drop	3	-5.670	9.070	5.240
AGIFCH	drop	10	-0.200	10.570	3.340
	no drop	6	3.83	10.850	4.430
AGIMCH	drop	10	-2.00	10.350	3.270
	no drop	6	4.50	18.900	7.710
PTRCH	drop	24	-1.433	6.088	1.243
	no drop	19	0.232	4.023	0.9230
GNPDRNK	drop	39	50.560	23.380	3.740
	no drop	27	39.670	24.520	4.720

4. Discussion

Severe economic downturn can take place in developing countries regardless of their comparative economic position, as a similar number of countries came from each of the levels of educational access defined for study. On the average, these levels also differentiate countries in terms of relative economic rank during the period of downturn. Recovery from downturn appears difficult regardless of economic position and requires an extended period of time. Only about one-third of the sample countries had recovered from a severe decline, and recovery took more than eight years. Speed of recovery may be related to the acuteness of the decline, since countries that had recovered from economic crisis experienced a total decline in GNP per capita of 21.7% on the average, compared to a decline of 18.9% in countries that had not recovered.

Access to schooling appears to be directly affected by severe economic decline. Crisis countries experienced significant mean decreases in the enrollment of both girls and boys when compared to other sample countries with less severe economic declines. Mean differences in the change on other educational indicators were not significant.

Within countries experiencing severe economic decline, the impact appears somewhat greater on boys' participation in primary education than on that of girls'. Average girls' gross enrollment ratios dropped less than those of boys' in crisis periods. However, when all countries that experienced an economic decline for two consecutive years were included in the analysis, the completion and transition rates for both boys and girls were negatively affected by the severity of the downturn. In addition, demand for schooling was negatively affected only in the case of girls.

The effect of a downturn on girls' participation is largely a function of the level of access that girls have to schooling. In low access countries, the severity of the downturn had a significant negative effect on enrollment of both boys and girls where access for girls is low (30% or less enrolled). The severity of the downturn was, however, more highly correlated with a decrease in girls' access than with that of boys'. Completion rates for boys also had a significant negative correlation with several crisis variables. In intermediate access countries, girls' completion rates correlated negatively with the economic downturn variables, whereas a negative relationship with transition to secondary school was found with boys'. In high access countries, both girls' and boys' transition rates were related to the economic crisis variables. Girls' transition rates also went down significantly in relation to the acuteness of the decline, the magnitude of the decline, and the number of years of decline in complete access countries.

5. Implications

Given the long period needed to recover from economic crisis and the relative poverty of those countries experiencing severe crisis, extensive and prolonged investment promoting girls' education may be needed to maintain progress during crisis situations. Such investment would appear especially critical in low access countries.

The relationship between the severity and length of economic decline and the decrease in demand for girls' primary schooling is consistent with findings from Asia which mentioned previously that poor families tended to save less for girls' schooling during an economic downturn. The lack of differentiation in demand by access level supports the idea of decisions being made in terms of relative family wealth even in countries where access to schooling is available to girls.

Knowledge of the level of access to primary schooling for girls can help focus investment strategies in a country undergoing severe economic hardship.

C. Internal Conflict

Consistent with the definition of crisis used in this review, a crisis⁴ situation is viewed as the actual armed struggle over values, status, power, or scarce resources between groups within a country, characterized by violence between the parties or directed against unarmed civilians seen as non-supporters of a given party. Undoubtedly, the most extensive examination of conflict is the study commissioned by the CIA on State Failure (Esty, et al., 1995 and 1998). This study examines global data on internal conflicts of different types over a 4-decade period (1955-1994) to develop a predictive model of state failure. While the relationship of state failure to educational systems was not directly examined, levels of maternal education were included

among the large number of variables examined. It was not found to be efficient in and of itself in discriminating between “failure cases and stable cases.”

The devastating effect of internal conflict on children is well documented (Graça Machel, 1996). Much of the information relates to the vulnerability of children in conflict situations, and, as mentioned previously, attention has been paid to developing educational service delivery models for children in conflictive situations to overcome this vulnerability (Sommers and Williams, 1999; Bethke, 1999; Oulai, 2000). Information on gender differences is usually limited to discussions of sexual abuse of children, and there is little information on child soldiers or child participation in the labor market in conflict situations that is disaggregated by gender. Similarly, the overall effects of internal conflict on primary schooling by gender have not been examined. Key variables for internal conflict were:

1. Internal Conflict

Consistent with the general definition of crisis, internal conflict is viewed as an armed struggle over values, status, power, or scarce resources between groups within a country, characterized by violence between the parties or directed against unarmed civilians seen as non-supporters of a given party. Operationally, a crisis situation has been defined in terms of the percentage of the population displaced within a country by the conflict.

Internally Displaced Persons (IDP). Internally displaced persons are individuals or groups of people who have been forced to flee their homes to escape armed conflict, generalized violence, human rights abuses, or natural or man-made disasters (UNHCR, 2000). In situations of armed conflict, a criterion of 3% of the population was used to define crisis countries. This variable indicates disruption in social services and family life that may influence choices about educating children of different genders and redirect state funding away from education. A review of countries currently or recently dealing with internal conflict suggested that an IDP ratio of 3% is a threshold level at which severe regional conflicts have a national impact.

Social Disruption (%IDP). This variable is the average number of internally displaced persons divided by the average total population over the years of conflict.

Social Disintegration (%deaths). This variable measures the magnitude of the conflict. It is the average number of deaths divided by the average total population over the years of conflict.

Length of conflict (Duration). This is a count of the number of consecutive years without a cessation of armed hostilities.

2. Profile of Internal Conflict Crisis

Twenty countries met the criterion for an internal conflict situation that had reached crisis proportions during the period under study. As can be seen from Table 18, most of the internal conflicts that meet the criterion are relatively long term. The average duration length of the conflict is almost 10 years. Percentages of IDPs above 10% are concentrated in countries with

low access, as six of the nine countries are found in this group. All but one of these countries, Cyprus, are in Africa. In most cases, these countries have had relatively recent ongoing internal conflicts.

Table 18: Profile of Internal Crisis

Access Level	Country	Years	Duration	IDP	% Deaths
Low	Afghanistan	88-97	9.0	3.4%	1.200%
	Burundi	88-97	9.0	12.5%	1.100%
	Guinea-Bissau	98-00	2.0	16.1%	--
	Liberia	89-96	7.0	39.9%	0.390%
	Sierra Leone	91-97	7.0	34.0%	0.110%
	Somalia	88-97	9.0	31.0%	0.490%
	Sudan	83-94	12.0	13.2%	0.450%
Intermediate	Uganda	80-92	12.0	3.2%	0.390%
	Congo, Dem	90-97	8.0	3.1%	0.160%
	Guatemala	80-84	5.0	3.0%	0.020%
High	Rwanda	90-97	7.0	8.4%	10.500%
	El Salvador	79-92	13.0	9.6%	0.330%
	Mozambique	77-92	16.0	18.4%	0.040%
	Nicaragua	79-88	10.0	5.6%	0.900%
	Peru	80-93	13.0	3.9%	0.020%
	Sri Lanka	83-97	14.0	4.9%	0.090%
	Turkey	84-93	9.0	3.1%	0.004%
Complete	Colombia	84-97	13.0	4.7%	1.100%
	Congo, Rep	97-00	3.0	29.6%	0.550%
	Cyprus	63-75	12.0	35.5%	--
Total			9.5	14.2%	0.930%

Sources:

Gurr, T. et al., *Internal Wars and Failures of Governance, 1954-1996*. Maryland: Center for International Development and Conflict Management, at the University of Maryland, College Park, 1997. *State Failure*. Online. Center for International Development and Conflict Management. Available: <http://www.bsos.umd.edu/cidcm/stfail/data/htm>. 31 August 2000.

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UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.

UNESCO Regional Office for Education in Africa (BREDA). *Report on the State of Education in Africa 1995: Education Strategies for the 90s: Orientations and Achievements*. UNESCO/BREDA. September 1995.

UNHCR. *UNHCR Country Profiles*. New York, NY: UNHCR, 1999. *Refugees and Others of Concern to UNHCR: 1999 Statistical Overview*. Online. UNHCR. Available: <http://www.unhcr.ch/statist/99oview/toc.htm>. 9 August 2000.

US Census Bureau. *IDB: Countries Ranked by Population*. US Census Bureau *International Data Base (IDB)*. Online. US Census Bureau. Available: <http://www.census.gov/cgi-bin/ipc/idbrank.html>. 1 September 2000.

US Committee for Refugees (USCR). *Refugee Conditions by Country*. *USCR Worldwide Refugee Information*. Online. USCR. Available: <http://www.refugees.org.htm>. 28 August 2000.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

A high percentage of internally displaced persons appears to reflect the conditions of the overall infrastructure of a country during the period of crisis. All of those countries for which no data are available during the period of internal conflict have IDPs of 16% or more. There seems to be little relationship between the number of internally displaced persons and deaths resulting from war. Those countries with high percentages of IDPs, for which data on deaths are available, are not generally among those with the highest relative frequency of deaths during the crisis period.

3. Internal Conflict and Education

Table 19 shows the change in the education indicators during the crisis period. Although the data are limited, it appears that internal conflict has a somewhat greater negative effect on the enrollment of boys than on that of girls. In five of the six countries (Burundi, Democratic Republic of Congo, Mozambique, Nicaragua, Sudan, and Turkey) where there is negative change during the period of internal conflict, this change is greater for boys. In two of the cases (Nicaragua and Sudan), the enrollment of girls increases whereas that of boys declines. Only in Turkey does girls' access to primary schooling decrease relative to that of boys.' It is important to note, however, that in the eight countries where enrollment increases or where there is no change, positive change for boys is greater in three countries (Afghanistan, Colombia, and Rwanda) and greater for girls in two (Guatemala and Sri Lanka).

Completion follows a different trend. In six of the eight countries for which data are available, completion rates increase during the period of internal conflict. In four of those six countries, the completion rate is higher for boys. In Turkey and the Democratic Republic of Congo where completion has decreased, the decline is greater for boys. Transition to secondary school does not appear to be negatively affected by internal conflict, in the few cases for which data are available. In the three of seven cases that show negative change in terms of Apparent Gross Intake, the decline is greater for girls.

Table 19: Change in Education Indicators by Country and Gender

Access Level	Country	GER-Change		COM-Change		TRAN-Change		AGI-Change	
		Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Low	Afghanistan	17.00	36.00	nd	nd	nd	nd	nd	nd
	Burundi	-14.10	-20.60	1.90	11.70	nd	nd	-1.00	10.00
	Guinea-Bissau	nd	nd	nd	nd	nd	nd	nd	nd
	Liberia	nd	nd	nd	nd	nd	nd	nd	nd
	Sierra Leone	nd	nd	nd	nd	nd	nd	nd	nd
	Somalia	nd	nd	nd	nd	nd	nd	nd	nd
	Sudan	3.90	-1.80	10.60	8.30	nd	nd	15.00	9.00
	Uganda	25.10	25.10	nd	nd	nd	nd	nd	nd
Inter-mediate	Congo, Democratic Rep	-1.30	-10.80	-27.40	-30.60	nd	nd	-13.00	-8.00
	Guatemala	6.00	6.00	nd	nd	nd	nd	nd	nd
	Rwanda	11.20	18.00	nd	nd	nd	nd	nd	nd
High	El Salvador	8.30	4.80	10.80	20.10	nd	nd	nd	nd
	Mozambique	-21.70	-36.80	8.30	12.20	5.00	5.00	nd	nd
	Nicaragua	1.70	-2.50	nd	nd	0.00	0.00	nd	nd
	Peru	0.00	0	nd	nd	nd	nd	0	0
	Sri Lanka	3.00	0	4.80	5.00	2.00	2	6	6
	Turkey	-3.00	-1.00	-0.70	-1.40	8.00	6	-4	-3
Complete	Colombia	0.30	2.90	19.00	16.90	nd	nd	0	0
	Congo, Republic	nd	nd	nd	nd	nd	nd	nd	nd
	Cyprus	nd	nd	nd	nd	nd	nd	nd	nd

Sources:

Gurr, T. et al. *Internal Wars and Failures of Governance, 1954-1996*. Maryland: Center for International Development and Conflict Management, at the University of Maryland, College Park, 1997. *State Failure*. Online. Center for International Development and Conflict Management. Available: <http://www.bsos.umd.edu/cidcm/stfail/data/htm>. 31 August 2000.

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Norwegian Refugee Council. *Information on IDPs by Country*. Global IDP Project of the Norwegian Refugee Council, 1999-2000. *Global IDP Database*. Online. Norwegian Refugee Council. Available: <http://www.db.idpproject.org/Sites/idpSurvey.nsf/WebCountryMenu?OpenForm>. 2 August 2000.

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtml>. 22 September 2000.

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US Census Bureau. *IDB: Countries Ranked by Population*. U.S. Census Bureau *International Data Base (IDB)*. Online. US Census Bureau. Available: <http://www.census.gov/cgi-bin/ipc/idbrank.html>. 1 September 2000.

U.S. Committee for Refugees (USCR). *Refugee Conditions by Country*. USCR *Worldwide Refugee Information*. Online. USCR. Available: <http://www.refugees.org.htm>. 28 August 2000.

USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

In order to examine relationships among the indicators of internal conflict and changes in girls' participation in school during crisis periods, correlations were run for each indicator by gender. Originally the correlations were run only for those 20 countries that met the criterion of 3% of the population internally displaced. No relationships that appeared to suggest consistent trends were found, likely as a result of the few number of cases and the limited variation among these cases. Thus, the analysis was expanded to include all of the countries for which IDP data were available.

As can be seen in Table 20, significant correlations were found with the duration of the conflict and Gross Enrollment Ratios for both genders. This means that greater positive change in GERs occurred in those countries with longer internal conflicts. This suggests that, over time, systems adjust for internal conflict and are able to offer more places. As the correlation for girls' enrollment is higher than that for boys', girls may be able to take greater advantage of the available school places, as they are involved less directly in the conflict. Similarly, change in Apparent Gross Intake for girls correlates significantly with the duration of the conflict, suggesting that demand as well as access increases with time. The trend for boys is in the same direction, but it is not significant.

Although not significant, it is interesting to note the opposite tendency with the indicators for attainment and achievement, as both completion and transference rates correlate negatively with duration. In addition, although the relative economic rank of a country did not correlate with any of the educational indicators, greater poverty, in terms of average individual GNP, correlated positively with both higher IDP and higher percentages of deaths.

Table 20: Correlation Matrix of Internal Conflict Indicators and Changes in Education Indicators During the 1990s

Internal Conflict Indicators		Gross Enrollment Ratios		Completion Rates		Transition to Secondary		Apparent Gross Intake	
		Female	Male	Female	Male	Female	Male	Female	Male
Percent IDPs	Correlation	-0.160	0.023	0.474	0.783	0.260	0.125	-0.458	-0.247
	Sig.	0.222	0.460	0.263	0.108	0.416	0.406	0.181	0.377
	N	25	22	4	3	3	3	6	4
Percent Deaths Internal Conflict	Correlation	0.063	0.252	-0.710	0.466	-0.530	-0.526	-0.237	-0.311
	Sig.	0.388	0.135	0.090	0.215	0.235	0.237	0.351	0.305
	N	23	21	5	5	4	4	5	5
Duration of Conflict	Correlation	0.363	0.266	-0.499	-0.368	-0.196	-0.212	0.768	0.380
	Sig.	0.005	0.037	0.104	0.208	0.337	0.324	0.000	0.100
	N	50	46	8	7	7	7	16	13
Economic Rank	Correlation	0.091	-0.014	0.838	0.490	0.794	0.843	-0.011	0.467
	Sig.	0.330	0.475	0.081	0.201	0.103	0.078	0.492	0.214
	N	26	24	4	5	4	4	6	5

Bold numbers indicate correlation coefficients with a significance of ≤ 0.05 (1-tailed)

Sources:

Development Data Group. *The 1999 World Development Indicators*. CD-ROM. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 1999.

Development Data Group: Development Economics and Operational Quality and Knowledge Services, Africa Region. *The World Bank Africa Database 2000*. CD-ROM. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 2000.

Gurr, T. et al. *Internal Wars and Failures of Governance, 1954-1996*. Maryland: Center for International Development and Conflict Management, at the University of Maryland, College Park, 1997. *State Failure*. Online. Center for International Development and Conflict Management. Available: <http://www.bsos.umd.edu/cidcem/stfail/data/htm>. 31 August 2000.

Institute of Peace and Conflict Studies, Project Ploughshares. *The Armed Conflicts Report 2000*. Canada: Institute of Peace and Conflict Studies, Conrad Grebel College. *The Armed Conflicts Report*. Online. Project Ploughshares. Available: <http://www.ploughshares.ca/content/ACR/acr.html>. 28 August 2000.

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In order to determine the general effect of internal conflict that displaces relatively large numbers of a population on educational participation, t-tests were computed to compare mean differences between countries meeting the criterion and those with internally displaced populations below 3%. No significant differences were found between these groups, except on the criterion variable.

4. Discussion

Internal conflict, as measured by internally displaced persons, does not appear to have a generalized effect on girls' participation in schooling across countries. It may be that the national data used in the analyses are not sensitive enough to capture the regional nature of the conflicts in many of the countries under study. A contributing factor, however, may be that no educational data are available during the period of crisis for those countries with the largest percentages of displaced persons.

The available data suggest that severe internal conflict affects boys' access to schooling to a somewhat greater degree than that of girls. More countries have larger negative declines in enrollment of boys than for girls. However, both boys' and girls' enrollment ratios, as well as demand for girls' schooling, tend to increase with time over the course of an internal conflict. The indicators that are related to internal efficiency are largely unaffected by severe internal conflict.

5. Implications

Both the general lack of national educational data during periods of internal conflict and the limited relationships found with existing data suggest that the effects of internal conflicts may be better studied within affected regions of a country.

An obvious implication of the findings is that boys' educational participation is more affected by internal crisis than that of girls'. This may be a result of the greater involvement of boys in conflict either as soldiers or breadwinners when older males in a family are drawn into the conflict. It suggests the importance of attempting to disaggregate both the number of child soldiers and the number of children participating in the labor force by gender in order to obtain a more accurate determination of the impact of internal conflict.

D. Epidemic Disease

A family's decision to send their daughters to school and to keep them in school depends on numerous factors that can negatively affect many poor households. Children's health and nutritional status are influenced by a family's overall income, living conditions, and decisions on how to allocate meager incomes. In addition, the increased prevalence of HIV/AIDS in many countries has had and will continue to have an impact on family structure—living conditions that will ultimately have a strong influence on whether or not children will receive the benefits of primary education. Thus, two types of crisis situations—infant mortality and HIV/AIDS prevalence—involving epidemic disease were investigated. Key variables included:

1. Epidemic Disease

Infant Mortality. The difficulty in identifying and tracking most widespread diseases, with the exception of HIV/AIDS, led to the alternative strategy of examining the relationship between infant mortality rates and primary education participation. Although infant mortality directly determines the reported deaths to infants less than one year of age per 1,000 live births, it reflects a number of disease and health problems, many the result of poverty that may

influence enrollment and participation in schooling. The key variables used to examine infant mortality and education are:

Catastrophic Infant Mortality (IMR). This is the number of deaths to infants under one year of age above 100 per 1,000 live births. This level of infant mortality is generally accepted as an indirect indicator of a dangerous level of material standard of living and quality of life.

High Infant Mortality (IMR1). This is the number of deaths to infants under one year of age between 50 and 100 per 1,000 live births. This level of infant mortality is still considered debilitating to national development.

Length (Years/Years1). This variable measures the number of years that a country stays within a certain level of infant mortality.

HIV/AIDS Crisis. An 11% prevalence rate in the adult population was used to define crisis countries. Given the relatively recent recognition of the series of the HIV/AIDS epidemic in Sub-Saharan Africa, little empirical data exist for differentiating degrees of seriousness of the problem. Thus, a review of cases was undertaken. There seemed to be a cluster of countries near 11%, then a slight gap to the next set of countries with lower prevalence rates.

As in other cases, key variables were used to examine different aspects of the phenomena. These are:

Adult Prevalence (Adult). This variable measures the proportion of those individuals 15-49 years of age in the total population of this age group who have contracted the disease. This age range is generally considered the most productive strata of a population.

Youth Prevalence (Ymale/Yfemale). This variable is the percentage of 15-24 year olds in the male and female populations of this age, respectively, who have the disease. It is the cohort closest to primary school age, disaggregated by gender, for which data are available.

Prevalence Among Pregnant Women (Preurb/Pregrur). This is the percentage of pregnant women in urban and rural areas, respectively, who have the disease. It allows an examination of rural/urban differences.

Percent Orphans (Perorph). In order to have a comparable measure, this is the number of orphans divided by the total population. It is an indication of the disruption/disintegration of families.

2. Infant Mortality Rates and Education

Over the past 30 years, a wide range of diseases has negatively affected children in developing countries and especially those under five years of age. The diseases that have made the major contributions to morbidity and mortality include acute diarrhea and respiratory infection, measles, polio, intestinal parasites, malaria, and HIV/AIDS. The main premise for this section is that children's health status has affected and continues to influence whether or not parents enroll children, especially girls, in school and the length of time that they will stay in school. Numerous studies have shown that "an inverse association between the disease burden

and the level of education exists for most infectious diseases” (Vandermoortele and Delamonica 2000). As individual diseases often have regional impact within a country, infant mortality rate (IMR) has been used to show the general well being of children.

The IMR is defined as the number of children who die during their first year of life and is reported as the number of deaths per 1,000 live births. Virtually all countries have regularly reported this rate, and it is more widely available than the child mortality rate, which is the death rate of children under the age of five. Furthermore, the IMR has been considered to be a sensitive indicator of a nation’s overall health status that measures the combined effect of disease, nutritional status, and living conditions. Since changes in any of these component indicators are believed to be reflected in the IMR, the objective of this section is to tabulate the IMR in the 89 countries that are being followed and to examine the changes in gross enrollment ratios, completion rates, apparent gross intake, and transition to secondary and pupil-teacher ratios to see if girls have been differentially affected.

In order to quantify changes in the IMR, it was divided into three ranges. The highest was any rate equal to or above 100, which is considered to be an indicator of dangerously deficient living conditions, poor quality of life, and a high risk of contracting an infectious disease. An IMR between 50 and 100 is still unacceptably high and can be considered to indicate less severe but still debilitating deficiencies that could have an effect on the demand for education and persistence in school.

The IMR for each of the countries for which data were available was classified according to the highest IMR during the 30-year period in the over 100 and 50-100 range, the total change in the IMR, the number of years the IMR was in a specific range, and the poverty rank of a country as measured by the mean per capita GNP during the range of years of the IMR. Table 21 shows the countries and their respective IMRs.

Table 21: Countries with Infant Mortality Rates Over 100

Country	Group	Classification	IMR	Economic Rank
Mali	low access	GWE	203	73
Sierra Leone	low access	non-GWE	193	70
Malawi	low access	GWE	191	77
Guinea Bissau	low access	non-GWE	183	74
Liberia	low access	non-GWE	182	47
Gambia, The	low access	non-GWE	179	62
Guinea	low access	GWE	177	51
Madagascar	intermediate access	non-GWE	172	71
Mozambique	high access	non-GWE	168	80
Niger	low access	non-GWE	167	63
Chad	low access	non-GWE	166	72
Somalia	low access	non-GWE	155	81
Ethiopia	low access	non-GWE	154	81
Egypt, Arab Republic	intermediate access	GWE	150	48
Mauritania	low access	non-GWE	142	50
Rwanda	intermediate access	non-GWE	142	74
Bolivia	intermediate access	non-GWE	141	nd
Pakistan	low access	GWE	140	67
Benin	low access	GWE	137	61
Burkina Faso	low access	non-GWE	137	70
Burundi	low access	non-GWE	137	79
Swaziland	high access	non-GWE	133	33
Algeria	intermediate access	non-GWE	132	20
Central African Republic	intermediate access	non-GWE	132	60
India	intermediate access	GWE	132	70
Lesotho	complete access	non-GWE	130	57
Cote d'Ivoire	intermediate access	non-GWE	129	nd
Togo	intermediate access	non-GWE	129	56
Haiti	intermediate access	non-GWE	128	67
Congo, Dem. Republic	intermediate access	non-GWE	127	nd
Tanzania	low access	non-GWE	125	nd
Morocco	intermediate access	GWE	122	35
Senegal	low access	non-GWE	122	45
Tunisia	high access	non-GWE	120	27
Cameroon	high access	non-GWE	119	50
Uganda	low access	non-GWE	116	69
Indonesia	intermediate access	non-GWE	114	60
Nigeria	intermediate access	non-GWE	111	44
Sudan	low access	non-GWE	110	51
Ghana	intermediate access	GWE	107	50
Peru	high access	GWE	105	16
Zambia	high access	non-GWE	100	23

Sources:

Development Data Group. *The 1999 World Development Indicators*. CD-ROM. Washington, DC: International Bank for Reconstruction and Development/The World Bank, 1999.

United Nations and International Statistics Programmes. *Economic Commission for Africa*. New York, New York: UN, October 1999. *Global Statistics*. Online. United Nations Statistics Programmes. Available: <http://www.un.org/Depts/eca/divis/fssd/nafmort.htm>. 2 September 2000.

United Nations and International Statistics Programmes. *Economic Commission for Asia and the Pacific, Statistics Division*. New York, New York: UN, October 1999. *Global Statistics*. Online. United Nations Statistics Programmes. Available: <http://unescap.org/stat/statdata/apinfo.htm>. 2 September 2000.

United Nations and International Statistics Programmes. *Economic Commission for Europe, Statistics Division*. New York, New York: UN, October 1999. *Global Statistics*. Online. United Nations Statistics Programmes. Available: http://www.unicef.org/unece/stats/stats_h.htm. 2 September 2000.

United Nations and International Statistics Programmes. *Economic Commission for Latin America and the Caribbean, Statistics Division*. New York, New York: UN, October 1999. *Global Statistics*. Online. United Nations Statistics Programmes. Available: <http://www.eclac.org/publicaciones/Estadisticas/6/lcq2066/parte1anu99.pdf>. 2 September 2000.

Of the 89 countries examined, 42 were found to have had IMRs over 100 during the past 30 years. Out of those 42 countries, 20 are low access for girls, 15 are intermediate access, and 10 are classified as countries emphasizing girls' education (GWE); the only two countries that were not part of this group during the 30-year period were Guatemala and Nepal. Furthermore, 31 of these countries are in the lowest half of the economic rank as determined by the mean per capita income during the years that the IMR was over 100 per 1,000 live births.

Over the 30-year period, 39 countries had one or more years of an IMR between 100 and 50, only seven were low access, and the rest either high or intermediate access countries. Furthermore, seven were GWE countries, and the only country that was not in either group was Nepal. The highest IMR, the magnitude of change in the IMR during the years it was over 100 and between 50 and 100, the corresponding economic rank, and the number of years over 100 and between 50 and 100 were then correlated with the changes in GER, completion rates, apparent gross intake, transition to secondary, and the pupil-teacher ratio. The only meaningful finding was that for the over 100 IMR group of countries, the smaller the decrease in the IMR, the greater the negative change in the transition rates to secondary school for both genders; the correlation coefficient for girls was -0.52 and for boys it was -0.57, and both were statistically significant.

In the 50-100 IMR countries, the correlation between the changes in IMR indicated that the less the IMR decreases, the greater the negative change in the gross enrollment ratios for girls. Essentially, this means that fewer girls enroll in school when there is relatively little reduction in the IMR. In the case of boys, it is the completion rate that correlates negatively with a decrease in the IMR. For both genders, the apparent gross intake ratios also correlate negatively with the decrease in the IMR; the smaller the decrease, the greater the decrease in the number of boys and girls of all ages who enroll in first grade. However, there is a positive relationship between the number of years that the IMR remains between 50 and 100 and the increase in the apparent gross first grade intake for boys only.

A possible problem in correlating the education indicators with the child mortality data is that for some of the countries with very high IMRs, the data on many of the education indicators are incomplete, especially completion rates and transition to secondary school.

3. Discussion

Although the data are limited, it appears that a reduction in the IMR in countries where the IMR has been over 100 for an extended period of time can be related to a reduction in the transition rates to secondary school. This suggests that one or more of the factors that contribute

to high IMRs also affect the decisions on whether or not children who finish their basic education go on to secondary school, and that boys and girls are equally affected.

In the countries with IMRs in the 50-100 range and where the decreases in this rate have been low, they also experienced a decrease in the gross enrollment rate for girls. This trend was supported by a similar pattern for the number of girls and boys of all ages who enroll in first grade.

4. HIV/AIDS in Sub-Saharan Africa

The rates of HIV/AIDS infections have been gradually increasing worldwide since the early 1980s. Although all countries have been affected to some extent, the most severe impact has been in Sub-Saharan Africa. Unlike many infectious diseases, HIV/AIDS was initially found to be linked to the better-educated and more mobile sector of a society. However, as prevalence rates increase over time, the pattern for HIV infection more closely approximates that of the other infectious diseases by disproportionately affecting the poorer sectors of the population (Vandermoortele and Delamonica, 2000). Since this review uses the most recent HIV/AIDS prevalence rates reported for the 1990s, the objective here is to view the trends of the education indicators in countries with different HIV/AIDS prevalence rates.

The latest published data on HIV/AIDS prevalence in Sub-Saharan Africa shows that 25.3 million are currently infected with the virus, representing 70% of the world's total prevalence. Furthermore, an additional 3.8 million Africans have become infected during 2000, 55% of those infected are women, the overall prevalence rate is 8.8%, and the main mode of transmission is heterosexual (UNAIDS, December 2000). However, the infection rates vary widely from country to country, ranging from under 2% in parts of West Africa to over 30% in the south. In the eight countries where at least 15% of the adult population is infected, at least one-third of today's 15-year-old children will die from HIV/AIDS (UNAIDS, December 2000). Since the infection rates for young women are considerably higher in these countries, the number of girls who will die during the next ten years will be much greater in comparison to boys.

Numerous studies have been done on the impact of HIV/AIDS on education, but most of these have been limited to specific countries and regions within countries. Studies in Zambia have found that HIV/AIDS affect the demand for education because there are fewer children to educate, fewer families can afford to send their children to school, and fewer children who enter are able to complete their schooling. At the same time, the supply of education is adversely affected by the death of teachers, reduced teacher productivity, loss of education managers, and the closing of schools due to decreased demand (Kelly, 1999, 2000; Thomas, 2000).

Although many studies present qualitative descriptions and a limited amount of education statistics generally limited to the areas studied, there is a dearth of information on the effects of HIV/AIDS on national education systems. Some important questions would be whether or not HIV/AIDS prevalence in a country has any effect on enrollment in school, completion of primary schooling, the transition to secondary school, and pupil-teacher ratios.

Since the prevalence rates in many African countries were in excess of 20% of the adult population by the late 1990s, this region would have the greatest probability of showing any possible effect on the education indicators. Although the results presented in this section are

limited to Africa, the prevalence rates in the other world regions were also examined, especially Asia and Latin America. Table 22 shows the mean prevalence rates in regions of the world. The overwhelming share of HIV/AIDS infection in Sub-Saharan Africa is at least ten times greater than in any of the other regions, and, according to many accounts, are affecting both the supply and the demand for education.

Table 22: Average HIV/AIDS Prevalence Rates in Major World Regions

Region	HIV/AIDS Prevalence Rates
Sub-Saharan Africa	8.57
North Africa and Middle East	0.12
East Asia and the Pacific	0.06
South and Southeast Asia	0.54
Eastern Europe	0.21
Western Europe	0.23
North America	0.58
Latin America	0.49
Global Total	1.07

This section examines education indicators in selected African countries with high HIV/AIDS prevalence and makes comparisons with countries that have lower infection rates in order to see whether or not there is a measurable impact of HIV/AIDS on the education indicators being followed by GEMS and to identify trends that specifically affect the primary education of girls. Thirty-eight Sub-Saharan African countries have been divided into high HIV/AIDS prevalence and compared to those with lower rates. Fourteen countries met the criterion of at least an 11% prevalence rate in the adult population. These countries were compared to the 24 countries in the region with lower rates.

5. HIV/AIDS and Girls' Education

Table 23 presents the African countries used in the study; the prevalence rates of HIV/AIDS in adults, young males and females, and urban and rural pregnant women; and the number of orphans as a percent of the total population. By rounding prevalence rates between 10% and 11%, Cote d'Ivoire and Ethiopia have been included as part of the over 11% prevalence countries.

Table 23: Sub-Saharan Africa–Sample Countries

Country	AIDS Prevalence					Orphans Percent
	Adults	Females	Males	Pregnant Women		
	15-44	15-24	15-24	Urban	Rural	
Botswana	35.8	34.3	15.8	43.0	30.0	4.1
Swaziland	25.2	28.5	13.0	30.3	31.5	1.2
Zimbabwe	25.1	24.5	11.3	29.7	30.0	7.8
Lesotho	23.6	26.4	12.1	31.3	27.1	1.7
Zambia	19.9	17.8	8.2	27.0	13.9	7.2
South Africa	19.9	24.8	11.3	19.2	21.3	1.1
Malawi	16.0	15.3	7.0	26.0	18.2	3.7
Kenya	13.9	13.0	6.4	15.2	12.7	2.5
Central African Republic	13.8	14.1	6.9	12.8	12.2	2.8
Mozambique	13.2	14.7	6.7	11.2	17.0	1.6
Burundi	11.3	11.6	5.7	18.6	19.7	3.5
Rwanda	11.2	10.6	5.2	19.0	7.5	3.7
Cote d'Ivoire	10.8	9.5	3.8	10.6	10.0	2.9
Ethiopia	10.6	11.9	7.5	17.6	9.2	2.0
Uganda	8.3	7.8	3.8	13.8	7.7	8.0
Tanzania	8.1	8.1	4.0	13.7	18.6	3.4
Cameroon	7.7	7.8	3.8	5.5	9.2	1.8
Burkina Faso	6.4	5.8	2.3	7.4	4.3	2.8
Congo	6.4	6.5	3.2	5.2	4.0	1.8
Togo	6.0	5.5	2.2	6.8	4.6	2.1
Congo, Democratic Republic	5.1	5.1	2.5	4.1	8.5	1.3
Nigeria	5.1	5.1	2.5	4.5	4.9	1.3
Ghana	3.6	3.4	1.4	3.4	3.4	0.9
Sierra Leone	3.0	2.9	1.2	2.0		1.2
Liberia	2.8	2.1	0.9	4.0	10.1	1.1
Chad	2.7	3.0	1.9	6.2	4.7	0.9
Guinea-Bissau	2.5	2.5	1.0	2.7		0.5
Benin	2.4	2.2	0.9	3.7	1.5	0.4
Mali	2.0	2.1	1.3	2.7	2.9	0.4
Gambia	2.0	2.2	0.9	1.0	2.4	0.8
Senegal	1.8	1.6	0.7	0.5	0.5	0.5
Guinea	1.5	1.4	0.6	1.5	1.4	0.4
Niger	1.4	1.5	0.9	1.3	4.7	0.3
Sudan	1.0			0.5	3.8	
Mauritania	0.5	0.6	0.4	0.5	0.0	
Madagascar	0.1	0.1	0.0	0.0	0.0	0.0
Mauritius	0.1	0.0	0.0	0.0		
Somalia				0.0	2.0	

Sources:

United Nations Programme on HIV/AIDS (UNAIDS). *Report on the Global HIV/AIDS Epidemic*. New York: UNITED NATIONS, June 2000. *Epidemic Update June 2000*. Online. UNAIDS. Available: http://www.unaids.org/epidemic_update/report/index.html. August 12, 2000.

United Nations Programme on HIV/AIDS (UNAIDS). *Table of country-specific HIV/AIDS estimates and data*. In *Report on the Global HIV/AIDS Epidemic*. New York: UNITED NATIONS, June 2000. *Epidemic Update June 2000*. Online. UNAIDS. Available: http://www.unaids.org/epidemic_update/report/Final_Table_Eng_Xcel.xls. August 12, 2000.

Table 24 shows the GER, completion rates, pupil-teacher ratio, transition rates to secondary and apparent first grade gross intake ratios by gender in the 13 Sub-Saharan countries with HIV/AIDS prevalence rates that are greater than 11% of the adult population; Table 25 has the same data in countries with prevalence rates below 11%. In both tables, the countries that have girls' education programs have been disaggregated from the others. In the high prevalence countries, Malawi is the only girls' education country. The under 11% prevalence countries are Benin, Ghana, Guinea, and Mali.

In the 12 countries without an emphasis on girls' education which have a prevalence of over 11%, the GER for girls went down in eight countries while for boys, a decrease was observed in six; the mean decrease across all these countries was 3.5% and 2.5% for girls and boys, respectively. Ethiopia and Lesotho experienced decreases for girls and small increases for boys. In the countries where the GER for both decreased, the decrease for girls was greatest in three countries. Malawi, the only GWE country, experienced an increased GER for both genders, but the girls' increase was almost 50% greater than that for boys.

In the countries with prevalence rates below 11% (Table 25), the mean change in the GER for the 14 non-GWE countries was an increase of 5% for girls and 3.7% for boys. On the other hand, the mean change for the four GWE countries was 10.7% and 12.9% for girls and boys, respectively. All of the GWE countries experienced increases for both genders, and the increases were the greatest for boys except in Ghana where the girls increased by 3.1% as compared to only 1% for boys.

Data on changes in the completion rates for the 1990s were found for only 5 of the 13 high prevalence countries, including Cote d'Ivoire, Lesotho, Mozambique, Rwanda, Swaziland, and Malawi. All four of the non-GWE countries experienced increases in completion with an average increase of 7.3% for girls and 8.3% for boys. Only Malawi experienced a decrease, which was equal for both boys and girls; the largest increases were in Lesotho.

The patterns of change in the 18 countries with a prevalence of under 11% were the reverse of the countries with the higher HIV/AIDS prevalence rates. Here the non-GWE countries experienced a decrease for boys and a negligible 0.1% increase for girls. The GWE countries increased by 10% for boys and only 0.6% for girls. An examination of the individual GWE countries shows that Mali had the largest increases for both genders, which was offset by decreases for both in Benin and a decrease for girls in Guinea.

In the high prevalence countries and with data on 11 of these countries, the pupil-teacher ratios decreased in 6, including Malawi. The mean for the 10 non-GWE countries showed a modest decrease of 2.8 as compared to a 5.8 decrease in Malawi. In the low prevalence countries, the mean pupil-teacher ratio experienced nearly identical increases of 21%, indicating that class sizes were on the average becoming larger. Of the 18 low prevalence countries, only Burkina Faso, Chad, Madagascar, and Togo showed a decrease in the number of students per teacher.

The data on transition rates showing the percent of students who complete primary school and enter secondary are very incomplete with data on only eight. In the high prevalence countries, Swaziland showed a decrease of 2% for girls and 5% for boys and the other two increased their transition rates during the 1990s. In the low prevalence countries, there were no data on the four GWE countries, and, with the exception of boys in the Democratic Republic of

the Congo, the other four countries all had increases in the number of students who enrolled in secondary.

The demand for education as measured by the apparent gross intake to first grade showed an overall decrease in 7 out of 9 high prevalence countries with Rwanda and Cote d'Ivoire with increased percentages. The decrease for girls was generally higher except in the Central African Republic and Swaziland. The overall mean decrease was 5% for girls and 3% for boys. In the 18 low prevalence countries, all experienced increases except the Republic of the Congo and Ghana for both genders, Madagascar for girls, and Benin for boys. The average increases in the non-GWE countries were 13.4% for girls and a somewhat lower 12.2% for boys. In the 4 GWE countries, the mean change was an increase of 9.5% for girls and a small decrease of 1.5% for boys.

Table 24: Countries with > 11% HIV/AIDS Prevalence Changes in Education Indicators During the 1990s

	Countries	Gross Enrollment Ratio		Completion Rates		Pupil - Teacher Ratio	Transition to Secondary		Apparent Gross Intake	
		Girls	Boys	Girls	Boys		Girls	Boys	Girls	Boys
Non-GWE	Botswana	-8.9	-2.5			-7.4	15.0	14.0	-6.0	-1.0
	Burundi	-17.3	-23.5			-15.7	2.0	1.0	-7.0	-6.0
	Central African R.	-8.6	-18.1						-6.0	-11.0
	Cote d'Ivoire	2.9	1.1	9.0	5.5	4.7			12.0	14.0
	Ethiopia	-2.3	4.6			-2.8				
	Kenya	-11.4	-15.0			-2.4				
	Lesotho	-11.5	1.0	11.7	16.6	-8.2			-12.0	-9.0
	Mozambique	-7.1	-4.7	0.7	3.6	0.0			-4.0	-4.0
	Rwanda	14.1	14.7			1.2			11.0	12.0
	South Africa	10.1	12.0							
	Swaziland	10.2	12.8	7.6	7.4	1.7	-2.0	-5.0	-13.0	-17.0
	Zimbabwe	-12.5	-12.0			0.9			-5.0	-3.0
	Total	-3.5	-2.5	7.3	8.3	-2.8	5.0	3.3	-3.3	-2.8
GWE	Malawi	26.3	18.4	-12.2	-12.2	-5.6				

Sources:

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.

UNESCO Regional Office for Education in Africa (BREDA). *Report on the State of Education in Africa 1995: Education Strategies for the 90s: Orientations and Achievements*. UNESCO/BREDA. September 1995.

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United Nations Programme on HIV/AIDS (UNAIDS). *Table of country-specific HIV/AIDS estimates and data*. In *Report on the Global HIV/AIDS Epidemic*. New York: UNITED NATIONS, June 2000. *Epidemic Update June 2000*. Online. UNAIDS. Available: http://www.unaids.org/epidemic_update/report/Final_Table_Enq_Xcel.xls. August 12, 2000.

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Table 25: Countries with < 11% HIV/AIDS Prevalence Changes in Education Indicators During the 1990s

	Countries	Gross Enrollment Ratio		Completion Rates		Pupil-Teacher Ratio	Transition to Secondary		Apparent Gross Intake	
		Girls	Boys	Girls	Boys		Girls	Boys	Girls	Boys
Non-GWE	Burkina Faso	6.7	8.1	0.1	-0.6	-4.2			9.0	13.0
	Cameroon	-11.2	-17.8							0.0
	Chad	7.0	1.2	19.4	4.5	-0.1			16.0	22.0
	Congo, Republic	-20.2	-23.2			6.0			-5.0	-9.0
	Congo, D. R.	13.3	21.3				1.0	-1.0		
	Gambia	14.6	15.3							
	Madagascar	-9.2	-11.0	-7.8	12.6	-2.8			-5.0	3.0
	Mauritania	35.7	29.6	-4.9	-16.2	5.8	2.0	4.0	43.0	35.0
	Mauritius	-2.5	-1.4	1.4	0.9	2.1	12.0	10.0	12.0	11.0
	Niger	2.3	0.7	-7.8	-10.8	0.1	5.0	0.0	5.0	3.0
	Nigeria	7.1	12.5			0.2				
	Senegal	12.1	7.6			0.0				
	Tanzania	-3.2	-3.4			3.1				
	Togo	17.3	12.7			-4.8	12.0	15.0	32.0	32.0
	Total	5.0	3.7	0.1	-1.6	0.5	6.4	5.6	13.4	12.2
GWE	Benin			-6.9	-6.6	21.5			16.0	-8.0
	Ghana	3.1	1.0						-1.0	-3.0
	Guinea	11.7	15.0	-1.4	6.2	11.0			8.0	-10.0
	Mali	17.2	22.6	10.0	31.0	31.1			15.0	15.0
	Total	10.7	12.9	0.6	10.2	21.2			9.5	-1.5

Sources:

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.
 UNESCO Regional Office for Education in Africa (BREDA). *Report on the State of Education in Africa 1995: Education Strategies for the 90s: Orientations and Achievements*. UNESCO/BREDA. September 1995.
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The changes during the 1990s in the five education indicators were then correlated with the overall HIV/AIDS prevalence in the adult population, prevalence among young women and men (age 15-24), pregnant women in urban and rural areas, and the percentage of orphans in the population. The HIV/AIDS prevalence data are from UNAIDS and represent the latest data available from the 1990s.

As shown in Table 26, HIV/AIDS prevalence data from the end of 1999 were correlated with changes in Gross Enrollment Ratios, Completion Rates, Pupil-Teacher Ratio, Transition to Secondary School, and Apparent Gross Intake Ratios. The data on gross enrollment show a significant and moderately strong negative correlation between changes in the female GER and the prevalence of HIV infection among young males and pregnant women in rural areas; the

correlation with young female HIV prevalence is almost significant (0.054) and quite noteworthy. This indicates that as HIV prevalence increases, the total number of girls of all ages enrolled in primary school decreases. The correlation coefficients for boys are also negative but none are statistically significant.

Table 26: Correlation Matrix of HIV Prevalence and Changes in Education Indicators During the 1990s

Population Group		Gross Enrollment Ratios		Completion Rates		Pupil – Teacher Ratio	Transition to Secondary		Apparent Gross Intake	
		Female	Male	Female	Male		Female	Male	Female	Male
Adults: 15-44	Correlation	-0.287	-0.263	0.265	0.156	-0.406	0.162	0.101	-0.582	-0.432
	Significance	0.062	0.080	0.180	0.297	0.022	0.351	0.406	0.002	0.020
	N	30	30	14	14	25	8	8	22	23
Young Females 15-24	Correlation	-0.299	-0.263	0.289	0.182	-0.404	0.085	0.023	-0.604	-0.458
	Significance	0.054	0.080	0.158	0.267	0.023	0.421	0.478	0.002	0.016
	N	30	30	14	14	25	8	8	21	22
Young Males 15-24	Correlation	-0.318	-0.271	0.304	0.190	-0.409	0.072	0.006	-0.611	-0.462
	Significance	0.043	0.074	0.146	0.258	0.021	0.433	0.495	0.002	0.015
	N	30	30	14	14	25	8	8	21	22
Pregnant Women: Urban	Correlation	-0.219	-0.206	0.231	0.111	-0.442	0.142	0.087	-0.552	-0.387
	Significance	0.122	0.138	0.213	0.353	0.013	0.369	0.419	0.004	0.034
	N	30	30	14	14	25	8	8	22	23
Pregnant Women: Rural	Correlation	-0.360	-0.310	0.272	0.170	-0.398	0.038	-0.090	-0.639	-0.537
	Significance	0.030	0.054	0.196	0.298	0.030	0.467	0.424	0.001	0.006
	N	28	28	12	12	23	7	7	20	21
Percent Orphans	Correlation	-0.125	-0.176	-0.022	-0.326	-0.362	0.523	0.573	-0.205	-0.003
	Significance	0.262	0.185	0.472	0.150	0.045	0.144	0.117	0.199	0.495
	N	28	28	12	12	23	6	6	19	20

Bold numbers indicate correlation coefficients with a significance of ≤ 0.05

Sources:

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: http://www2.unesco.org/wef/en-leadup/assess_shtm. 22 September 2000.
 UNESCO Regional Office for Education in Africa (BREDA). *Report on the State of Education in Africa 1995: Education Strategies for the 90s: Orientations and Achievements*. UNESCO/BREDA. September 1995.
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 USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

No significant correlations were found between changes in the completion rates and HIV prevalence in any of the population groups. On the other hand, changes in the pupil-teacher ratio correlates negatively with all the prevalence groups, indicating that a decrease in class size co varies with an increase in HIV prevalence. With an N no greater than 8, no significant

correlations were found for changes in transition rates to secondary school. The low N is due to a general lack of data on this indicator.

The apparent first grade gross intake ratio measures the total number of children of all ages who enroll as a percent of the appropriate age cohort in the general population. This is essentially a measure of the demand for primary education. The matrix shows that the changes in the apparent gross intake for both girls and boys correlate negatively with an increase in HIV prevalence. It should be noted that the coefficients for girls are larger and show a stronger correlation than those for boys. Coefficients over 0.5 indicate a strong correlation, and in two cases the girls' coefficients are over 0.6 while the highest for boys only reaches 0.537. In other words, as HIV prevalence goes up, the demand for education goes down, and girls appear to be affected negatively more than boys.

In order to identify possible trends, the change in the five indicators for each of the countries was calculated and grouped according to high and low HIV/AIDS prevalence. The average change for each of the indicators for each group of countries during the 1990s was then compared through the use of t-tests. The mean change in gross enrollment and apparent intake ratios shown in Table 4 indicates that girls in high HIV/AIDS prevalence countries were significantly different from girls in low prevalence countries. For the AGIR, there was an average decline for girls during the 1990s in high prevalence countries as compared to an average increase for girls in low prevalence countries. A similar tendency was found when comparing boys' net enrollment and net intake ratios. The groups were not significantly different in terms of average change in fifth grade attainment, or pupil-teacher ratios.

Table 27: Comparison of Mean Change of Indicators in Crisis and Non-Crisis Countries

Education Indicators	AIDS Prevalence	N	Mean	Std. Deviation	T value
GER:Females	Low	17	7.3	11.2	-1.852
	High	13	-0.3	11.0	
GER: Males	Low	17	6.1	11.5	1.811
	High	13	-1.7	11.8	
NER: Females	Low	7	8.3	13.3	-0.155
	High	4	11.0	33.2	
NER: Males	Low	7	6.3	12.9	2.506
	High	3	-7.6	4.6	
AGIR: Females	Low	14	16.4	28.3	2.198
	High	9	-14.7	35.7	
AGIR: Males	Low	15	12.7	25.7	1.988
	High	9	-16.7	39.6	
NIR: Females	Low	5	4.4	3.4	2.322
	High	3	-14.3	18.4	
NIR: Males	Low	5	5.0	2.9	2.512
	High	3	-13.9	17.4	
Completion: Females	Low	8	-1.3	11.5	-0.644
	High	6	2.3	9.0	
Completion: Males	Low	9	0.9	14.7	0.052
	High	6	0.6	7.2	
Pupil-Teacher Ratio	Low	13	4.5	13.6	1.181
	High	11	-0.7	5.0	

Bold numbers indicate correlation coefficients with a significance of ≤ 0.05

Sources:

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.

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USAID. *GED 2000: Global Education Database*. Human Capacity Development Center of the US Agency for International Development. July 2000.

Table 28 presents the percentage of countries with declines in the 1990s on indicators for which data were available. As can be seen, a greater number of countries with low HIV/AIDS prevalence had declines for both males and females on all of the indicators except completion. With the exception of completion rates and gross enrollment ratios for boys, declines were found in at least one-half of the high prevalence countries. The percentage of low prevalence countries experiencing a negative change on indicators is generally much lower. This is especially true in

terms of the demand indicators of apparent gross intake and net intake ratios. In the former case, percentage differences are 50% and in the latter 100%.

Table 28: Percent of Countries with Decline in Education Indicators—1990s

	GER		NER		AGI		NIR		Completion	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
High Prevalence Countries	54%	46%	50%	100%	75%	77%	100%	100%	33%	33%
Low Prevalence Countries	13%	19%	14%	43%	21%	27%	0	0	63%	56%

Sources:

UNESCO. *EFA 2000 Assessment: Country Reports*. UNESCO. *World Education Forum*. Online. UNESCO. Available: <http://www2.unesco.org/wef/en-leadup/assess.shtm>. 22 September 2000.

UNESCO Regional Office for Education in Africa (BREDA). *Report on the State of Education in Africa 1995: Education Strategies for the 90s: Orientations and Achievements*. UNESCO/BREDA. September 1995.

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6. Discussion

Although the results presented here must be regarded as tentative, given the limited number of countries for which data are available for many of the indicators, they do suggest that HIV/AIDS in Sub-Saharan Africa has had a significant impact on the participation of girls in primary schooling. Demand for schooling appears to be most affected by HIV prevalence. For the region as a whole, the HIV prevalence in 38 countries does correlate significantly with decreases in the percentage of girls enrolling for the first time at the appropriate age. This relationship occurs for almost all indicators of prevalence. The same pattern is found for boys, but the strength of the association is greater for girls

HIV prevalence also appears to have a strong impact on girls' overall access. Significant negative correlations in terms of girls' gross enrollment ratios and HIV prevalence were found in three of the six HIV prevalence indicators. No significant correlations were found between boys' gross enrollment ratios and the HIV prevalence indicators. This may be a result of the high gross enrollment ratios achieved by boys for many of the countries in the region prior to the onset of the HIV/AIDS epidemic.

The participation of girls in primary schooling has been most affected in countries where HIV prevalence has reached epidemic levels. In African countries with an adult HIV prevalence rate of 11% or greater, girls' gross enrollment ratios and apparent gross intake ratios, on the average, have decreased in the last decade. In countries with lower incidence, there has been positive average change on these indicators. Boys in high prevalence countries have also had significant decreases in enrollment and age appropriate intake, when compared to boys in countries with lower levels of HIV prevalence.

The academic attainment of girls in school does not appear to be directly related to HIV prevalence, at least in the period of a decade. Rates of fifth grade attainment and of transition into secondary school were not correlated significantly with any of the indicators of HIV prevalence. Similarly, change in these indicators did not differ significantly in high and low prevalence countries.

HIV/AIDS prevalence of epidemic proportions appears to be overcoming the gains made in girls' access to primary education in the 1970s and 1980s. On the average, there has been a downward trend in girls' gross enrollment ratios since the early 1990s in countries currently with prevalence rates of 11% or greater. Sub-Saharan African countries with lesser prevalence rates have maintained positive change during the decade.

7. Implications

The overall relationships found between higher HIV infection rates and negative changes in children's participation in primary schooling for Sub-Saharan Africa supports evidence from individual countries and shows the magnitude of the problem. If projections of infection rates over the next decade are borne out, current positive gains in most countries are likely to be wiped out. As children's participation in formal schooling decreases, alternative methods of instruction will need to be employed if an educated population is to be created for future generations. This is especially true for girls, where the impact of HIV infection has had the greatest negative affect on participation in primary education.

The correlations found between decreased gross enrollment ratios and HIV prevalence rates for girls, combined with the differences encountered in the significance of net enrollment rates for boys and girls in high prevalence countries, suggest that overage female students may be especially affected by the HIV/AIDS epidemic. This is consistent with data on individual countries that suggest high prevalence among teenage girls and the need to have girls of this age in the home. The extent of the effect on the overage population of girls might be studied through review of existing health and household survey data in the region.

The global nature of the data did not lend itself to extensive investigation of urban/rural differences. However, the stronger negative correlations found with infection rates among rural pregnant women and indicators of girls' gross enrollment and apparent intake when compared to urban women, suggest that girls' participation in schooling may be affected by their place of residence. In-depth comparative studies focusing on specific regions within countries are necessary in order to better understand the effects of rising HIV/AIDS prevalence on girls' education.

E. Distribution of Crises

1. Multiple Crises, Patterns, and Education

Previous sections of this document have focused on the relationship of various crisis situations to girls' participation in primary schooling. This section examines the general distribution of such situations. Table 29 shows the extent of crisis situations in individual countries for each access group. Crisis was relatively common among the developing countries

included in the sample. Some type of crisis situation occurred in 63% or 56 of the 89 countries over the 30-year period. The percentage of countries experiencing a crisis situation ranged from one-half in the high access group to 71% in the complete access category. Almost two-thirds (73%) of those countries suffering a crisis had only one crisis during the period. Eight countries, however, experienced both severe economic decline and high internal population displacement during the period. These countries included the Democratic Republic of the Congo and the Congo, El Salvador, Guinea-Bissau, Nicaragua, Niger, Peru, and Sierra Leone. One country, Zimbabwe, experienced both economic decline and a high rate of HIV/AIDS prevalence. Three countries (Burundi, Mozambique, and Rwanda) reached crisis levels of economic decline, internal displacement, and HIV/AIDS prevalence.

Table 29: Distribution of Crisis Situations by Type and Girls' Access Category

Crisis/ Access	Economic		Internal Conflict		HIV/AIDS		Total	
	N	%	N	%	N	%	N	%
Low	9	12%	8	11%	3	4%	20	27%
Intermediate	11	15%	3	4%	6	8%	20	27%
High	8	11%	6	8%	3	4%	17	23%
Complete	11	15%	3	4%	2	3%	16	22%
Total	39	53%	20	27%	14	19%	73	99%

*percentages may not total 100% due to rounding

Table 30 shows the incidence of different types of crisis within the groups of sample countries. The distribution is similar for each group, varying only by 4 percentage points. Economic crisis predominates, making up 53% of the total occurrences. In each group, this type of crisis has the highest percentage of the total incidents for the group. Internal conflict is somewhat more prevalent in low access countries, largely as a result of conflicts in Sub-Saharan Africa, which account for seven of the eight occurrences. The highest relative frequency of HIV/AIDS crisis is in the intermediate access group. As might be expected, a large percentage of Sub-Saharan African countries are also in this group.

When countries are examined by region, it can be seen that crisis situations, as defined for this review, are relatively infrequent in the Asia/Pacific and North Africa/Middle East Regions. While countries in these regions comprise 28% of the sample, only 8% of crisis situations occurred in these regions. Sub-Saharan Africa, on the other hand, is over-represented in terms of crisis situations. In each group, this region's percentage of the total crises occurring in the group is higher than its representation in the group. The Region, as a whole, accounts for 63% of the identified crisis situations. A somewhat similar trend occurs with the Latin American and Caribbean Region. The Region is over-represented in terms of crisis situations in relation to its percentage of countries. This is despite a lack of representation in the low access countries.

Table 30: Distribution of Crisis Situations by Geographical Region

Access/ Region	Low		Intermediate		High		Complete		Total	
	% of group	% crisis	% of group	% crisis	% of group	% crisis	% of group	% crisis	% of group	% crisis
Asia/Pacific	17%	5%	18%	5%	18%	6%	24%	6%	19%	5%
N. Africa/ Middle East	4%	0	18%	5%	9%	0	5%	6%	9%	3%
Sub-Saharan	79%	95%	50%	80%	23%	41%	14%	25%	43%	63%
LAC	0	0	14%	10%	41%	47%	48%	56%	25%	26%
Europe	0	0	0	0	9%	6%	10%	6%	4%	3%

2. Discussion

As has been shown in previous sections, access level can be considered a proxy for level of development. Thus, developing countries at any level may be subject to crisis situations. However, countries of Sub-Saharan Africa predominate among countries where girls have less access to schooling. These countries are also over-represented in terms of crisis situations and are most likely to suffer more than one type of crisis.

Given the relationship between crisis and declines in girls' participation in primary schooling, a focus on investment in girls' education would seem to be called for in these countries. The chronic nature of many internal conflicts and the devastating impact of the HIV/AIDS epidemic in this region, however, may require that girls' education be a part of large-scale structural reform to be effective.

IV. Conclusions and Implications

This chapter is organized into two main sections. The first presents conclusions resulting from the review. These conclusions are presented in terms of girls' participation in primary schooling as defined by the educational indicators used in the review. The second section deals with implications of findings for programming and future research.

A. Conclusions

1. Enrollment (Access/Supply)

- The problem of girls' access to primary schooling has not been solved.

Access to primary education has increased greatly for girls in most developing countries. However, it remains below 50%, on the average, in countries where access to primary schooling has traditionally been low. In those countries, girls' access, on the average, has not increased as rapidly as that of boys' over the last three decades. This is true even in countries that have supported programs that emphasized the importance of girls' schooling.

- Full enrollment of the primary school population does not occur rapidly.

Despite efforts such as Education For All and the international attention given to girls' education over the last decade, even countries with relatively high gross enrollment ratios for girls have not, on the average, reached complete primary school enrollment for either boys or girls. Average gross enrollment ratios for girls in countries that were below 30%, 75%, and 100% in 1970 were 48.4%, 81.9%, and 97.8%, respectively, in the late 1990s.

- Severe economic downturn and epidemic disease have a strong impact on girls' enrollment.

Economic crisis countries experienced significant mean decreases in the enrollment of both girls and boys when compared to other sample countries with less severe economic declines. In addition, when all sample countries that experienced an economic decline were included in the analysis, the severity of the downturn had a significant negative relationship to enrollment in low access countries. The severity of the downturn had a higher correlation with a decrease in girls' gross enrollment ratio than with that of boys'. Gross enrollment ratios for boys and girls also correlated negatively with a country's relative poverty rank, suggesting that the poorer the country, the greater the influence of the downturn on enrollment.

In African countries with an adult HIV prevalence rate of 11% or greater, girls' gross enrollment ratios and apparent gross intake ratios, on the average, have decreased in the last decade. In countries with lower incidence, there has been positive average change on these indicators. Boys in high prevalence countries also had significant decreases in enrollment, when compared to boys in countries with lower levels of HIV prevalence. However, in all sample countries, significant negative correlations in terms of girls' gross enrollment ratios and HIV prevalence were found in two of the six HIV prevalence indicators. No significant correlations

were found between boys' gross enrollment ratios and the HIV prevalence indicators. This may be a result of the high gross enrollment ratios achieved by boys for many of the countries in the region prior to the onset of the HIV/AIDS epidemic.

- Relatively high percentages of internally displaced persons are not related to girls' enrollment.

The lack of educational data in those countries with the largest percentages of internally displaced persons limited the analysis. No consistent trends in participation were found, although available data showed that more countries had larger negative declines in enrollment of boys than for girls, and girls' enrollment tended to increase over the course of an internal conflict.

2. Completion

- The success of girls who enroll in primary school is similar to that of boys.

The percentages of girls and boys attaining fifth grade are similar within each group of countries (low access, intermediate access, high access, and complete access). In each of the four groups there has been a decline in the gender gap in completion. In countries with full or close to full enrollment, girls have slightly higher rates than boys.

- Full enrollment does not mean full attainment of fifth grade.

In countries with full enrollment in primary school, less than 90% of students reach fifth grade, and this percentage goes down to about 60% percent in low and intermediate access countries. Increasing access to primary education may not influence completion, as there has been little change over time in completion rates, despite growing enrollment.

- The relationship of economic downturn to completion is a function of the level of access that girls have to schooling.

In low access countries, change in completion rates for girls' was not correlated with any economic downturn variables. In intermediate access countries, on the other hand, changes in girls' completion rates had a relatively high negative correlation with all of the economic decline variables. Boys' completion rates correlate negatively with several economic decline variables in both groups of countries.

- Epidemic disease and severe internal conflict do not appear to influence girls' completion rates.

No significant mean differences were found in terms of changes in girls' completion between high HIV/AIDS and other Sub-Saharan African countries, between countries with high rates of infant mortality and those with lesser rates, or between countries with high percentages of internally displaced persons and other sample countries. Similarly, changes in girls' completion were not correlated with any of the variables for examining the severity of disease and conflict.

- Functional literacy, as determined by the average years of primary schooling completed by the female adult population, is low in the sample countries.

Although there have been gains in the average years of primary schooling across countries, only in those that had complete enrollment in 1970 is the average years of schooling equivalent to females reaching fifth grade. In the late 1990s, girls' attainment was 1.19 years, 2.66 years, and 3.79 years in the low, intermediate, and high access countries, respectively. Gender differences in the average number of years of primary schooling in the adult population have increased in low access countries.

3. Achievement

- Girls have made gains in achievement, as measured in terms of secondary school enrollment of primary school graduates.

Girls and boys have had consistent average gains in each group of countries and the gender gap has decreased. The exception has been the complete access countries where there has been a decline in the 1990s. This suggests that in countries with less than complete enrollment, secondary school participation may be a function of available space, as well as mastery of the primary school curriculum.

- The impact of crisis situations on girls' transition to secondary school is a function of the relative access that girls have to primary education.

It appears that a relatively high percentage of girls must have access to secondary school for the transition indicator to be affected by economic crisis. With economic decline, change in girls' transition to secondary school is related to the economic decline variables in countries that have obtained at least 70% access for girls. In high access countries, a drop in girls' transition rates was correlated with the acuteness, severity, and duration of the decline. Complete access countries also showed a relationship between a drop in girls' transition to secondary school and the economic decline variables. There was more consistency in the trends with girls than with boys, although the trend is similar for both genders. No meaningful relationships were found between other crisis variables and change in transition rates, possibly because these crisis were concentrated in low and intermediate access countries where access to secondary education for girls is relatively low.

4. Demand

- Demand for educating girls, as measured by enrollment in first grade at the appropriate age, appears to be a function of access levels and the economic and social difficulties faced by countries.

Demand has remained low in low access countries. This does not seem to be a function of the barriers traditionally associated with girls' access to schooling, as demand for boys' schooling has also decreased in the same period. All of the crisis situations except internal conflict were related to decreases in demand for girls' education. Both the magnitude and the duration of economic crisis correlated negatively with apparent first grade intake for girls.

Countries that had the smallest decreases in infant mortality rates had the largest decreases in apparent first grade intake. Similarly, in African countries with an adult HIV prevalence rate of 11% or greater, girls' apparent gross intake ratios, on the average, have decreased in the last decade. In countries with lower incidence, there has been positive average change on this indicator. Demand for boys' education in high prevalence countries has also had significant decreases. Such countries are primarily in the low and intermediate access groups.

5. Quality

- Pupil-teacher ratio is not a useful indicator of educational quality.

Pupil-teacher ratio was subject to fluctuations in given time periods in countries without complete access. In addition, it was not related to any of the crisis variables in a manner that was interpretable.

B. Implications

1. Programmatic

While it is recognized that past trends may not predict those of the future, the results of this review suggest a number of implications for development efforts directed at improving the participation of girls in primary schooling. First, there is a need to focus on low access countries. These countries, as a group, have made the least absolute progress in increasing the participation of girls in primary schooling. Further, although developing countries at any access level may be subject to crisis situations, the countries of Sub-Saharan Africa predominate among countries where girls have less access to schooling. These countries are over-represented in terms of crisis situations and are most likely due to more than one type of crisis.

The emphasis in low-access countries should be on increasing access, because relative increases in access are likely to have an effect on the absolute number of girls completing primary school. Attention should also be given to improving awareness of the importance of educating girls, as demand for female primary schooling is relatively low.

It would seem that to have national impact, investment in girls' education must be increased. Despite emphasis on educating girls in programs of a number of the sample countries, impact appears minimal. This may be a result of the limited scale of the programs, suggesting that greater investment is needed especially in those countries that have made the least progress.

Given the long period needed to recover from economic crisis and the relative poverty of those countries experiencing severe crisis, extensive and prolonged investment promoting girls' education may be needed to maintain progress during crisis situations. The chronic nature of many economic declines and internal conflicts together with the devastating impact of the HIV/AIDS epidemic may require that girls' education be a part of large-scale structural reform to be effective.

A focus on access does not negate the need to improve completion rates. The relatively low attainment levels, even in countries with high access, suggest that enrollment alone does not

assure the development of a literate population. Strategies must be developed that emphasize the importance of school completion in any program emphasizing the education of girls.

The lack of adult populations at a level that is considered functional literacy, even in high access countries, argues for a focus on schooling completion for girls. It also suggests, however, that attention should be given to the out-of-school population. As has been argued recently (Burchfield, 2000), this might be in the form of adult literacy programs for women that focus on involvement in their children's schooling.

Similarly, if projections of HIV/AIDS infection rates over the next decade are borne out, current positive gains in most countries of Sub-Saharan Africa, and perhaps other geographic regions, are likely to be wiped out. As children's participation in formal schooling decreases, alternative methods of instruction will need to be employed if an educated population is to be created for future generations. This is especially true for girls, where the impact of HIV infection has had the greatest negative affect on participation in primary education.

2. Research

The general lack of national education data beyond gross enrollment rates point out the difficulties in examining cross-national educational phenomena over time and the importance of collecting complete educational statistics on a yearly basis. The availability of such data has, however, improved in recent years. Thus, using the database created in this review as baseline, follow-up studies may be able to examine the relationship between crisis situations and girls' education with greater precision.

The variation found in trends and relationships in crisis situations by level of access suggests that knowledge of the level of access to primary schooling for girls can help focus investment strategies in countries experiencing crisis. These data should be gathered as part of planning efforts in girls' education.

The correlations found between decreased gross enrollment ratios and HIV prevalence rates for girls, combined with the differences encountered in the significance of net enrollment rates for boys and girls in high prevalence countries, suggest that overage female students may be especially affected by the HIV/AIDS epidemic. This is consistent with individual country data that suggest high prevalence among teenage girls and the need to have girls of this age in the home. The extent of the effect on the overage population of girls might be studied through review of existing health and household survey data in the region.

The global nature of the data did not lend itself to extensive investigation of urban/rural differences. However, the stronger negative correlations found with infection rates among rural pregnant women and indicators of girls' gross enrollment and apparent intake, when compared to urban women, suggest that girls' participation in schooling may be affected by their place of residence. In-depth comparative studies focusing on specific regions within countries are necessary in order to better understand the effects of rising HIV/AIDS prevalence on girls' education.

Both the general lack of national educational data during periods of internal conflict and the limited relationships found with existing data suggest that the effects of internal conflicts may be better studied within affected regions of a country.

The finding that boys' educational participation seems to be more affected by internal conflict and severe economic downturn than that of girls' may be a result of the greater involvement of boys as soldiers or breadwinners. It suggests the importance of attempting to disaggregate both the number of child soldiers and the number of children participating in the labor force by gender in order to obtain a more accurate determination of the impact of internal conflict.

Endnotes

¹ These countries are Benin, Burkino Faso, Chad, Ethiopia, the Gambia, Guinea-Bissau, Mali, Niger, Pakistan, Senegal, Uganda, Yemen.

² Countries that in recent years have emphasized girls' education were also examined separately in terms of trends by access level since 1970. The countries were: Benin, Guinea, Mali, Nepal, and Pakistan in the low access group; Egypt, Guatemala, Ghana, India, and Morocco in the intermediate access group, and Peru in the high access group. These countries, in general, showed patterns similar to the overall trends in their group. The exceptions were in low access countries where the gender gap in aggregate gross enrollment ratios increased more than for low access countries in general and apparent gross intake where the gender gap decreased, partly as a result of lower demand among families of boys.

³ The countries were: Algeria, Botswana, Chile, Costa Rica, Cyprus, Greece, Hong Kong, Jamaica, Republic of Korea, Mauritius, Mexico, Panama, Spain, Swaziland, Tunisia, and Uruguay. Exceptions were: Burundi, the Gambia, Senegal, and Tanzania.

⁴ The use of the term "crisis" may be inconsistent with that used by many authors in discussing conflicts. For such scholars, crisis is the stage prior to the initiation of violence, characterized by tense confrontation (CAII, 2000: McHugh, 2000).

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IDB: Countries ranked by Population: 1976

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Appendix A: Education Indicators by Country

Country	Country Classification	GWE Countries	Gross Enrollment Ratios															
			1970				1980				1990				Latest 1990s			
			girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy
Afghanistan	low access	non-GWE	8.0	47.0	39.0	0.17	12.0	54.0	42.0	0.22	19.0	35.0	16.0	0.54	32	64	32.0	0.50
Burkina Faso	low access	non-GWE	9.0	17.0	8.0	0.53	13.0	22.0	9.0	0.59	25.7	40.9	15.2	0.63	31.3	47.9	16.6	0.65
Burundi	low access	non-GWE	18.0	42.0	24.0	0.43	20.8	32.0	11.2	0.65	66.2	79.4	13.2	0.83	45.8	56	10.2	0.82
Cambodia	low access	non-GWE	26.0	35.0	9.0	0.74									100	119	19.0	0.84
Chad	low access	non-GWE	17.0	52.0	35.0	0.33					33.6	75.4	41.8	0.45	39.3	75.7	36.4	0.52
Ethiopia	low access	non-GWE	9.0	23.0	14.0	0.39	26.8	47.5	20.7	0.56	26.2	38.9	12.7	0.67	26.9	48.1	21.2	0.56
Gambia	low access	non-GWE	15.0	34.0	19.0	0.44	36.1	69.6	33.5	0.52	51.6	76.3	24.7	0.68	47.9	77.3	29.4	0.62
Guinea-Bissau	low access	non-GWE	20.0	57.0	37.0	0.35	24.5	93.6	69.1	0.26	23.7	50.1	26.4	0.47	38.5	84.8	46.3	0.45
Liberia	low access	non-GWE	27.0	75.0	48.0	0.36	34.5	61.3	26.8	0.56								
Mauritania	low access	non-GWE	8.0	20.0	12.0	0.40	25.8	47.5	21.7	0.54	41.3	55.9	14.6	0.74	74.5	83	8.5	0.90
Nepal	low access	non-GWE	8.0	44.0	36.0	0.18	50.0	119.0	69.0	0.42	81.0	132.0	51.0	0.61	86.9	140	52.8	0.62
Niger	low access	non-GWE	9.0	19.0	10.0	0.47	17.8	32.9	15.1	0.54	20.8	36.9	16.1	0.56	20.2	39	18.8	0.52
Senegal	low access	non-GWE	30.0	51.0	21.0	0.59	37.0	55.5	18.5	0.67	49.8	67.9	18.1	0.73	47.08	73.1	26.0	0.64
Sierra Leone	low access	non-GWE	28.0	40.0	12.0	0.70	43.3	61.3	18.0	0.71	41.1	59.6	18.5	0.69				
Somalia	low access	non-GWE	4.0	17.0	13.0	0.24	15.4	27.5	12.1	0.56					6.3	11.8	5.5	0.53
Sudan	low access	non-GWE	29.0	47.0	18.0	0.62	40.9	58.7	17.8	0.70	45.2	60.3	15.1	0.75	46.5	55.2	8.7	0.84
Tanzania	low access	non-GWE	26.0	41.0	15.0	0.63	85.9	99.4	13.5	0.86	69.1	70.3	1.2	0.98	76.6	77	4	0.99
Uganda	low access	non-GWE	30.0	46.0	16.0	0.65	42.7	56.3	13.6	0.76	66.0	82.9	16.9	0.80	74	129	55.0	0.57
Yemen	low access	non-GWE	7.0	38.0	31.0	0.18					39.3	106.6	67.3	0.37	40	100	60.0	0.40
Benin	low access	GWE	20.0	51.0	31.0	0.39	42.8	91.0	48.2	0.47	38.5	77.8	39.3	0.49	39.87	91	51.2	0.44
Guinea	low access	GWE	24.0	45.0	21.0	0.53	42.6	48.0	5.4	0.89					45.3	65.7	20.4	0.69
Malawi	low access	GWE	27.0				48.5	72.2	23.7	0.67	61.8	73.8	12.0	0.84	60.1	91.6	31.5	0.66
Mali	low access	GWE	16.0	30.0	14.0	0.53	18.9	33.8	14.9	0.56	18.8	33.4	14.6	0.56	21.4	59.9	38.5	0.36
Pakistan	low access	GWE	19.0	57.0	38.0	0.33	27.0	51.0	24.0	0.53	39.0	82.0	43.0	0.48	45	96	51.0	0.47

Gross Enrollment Ratios

Country	Country Classification	GWE	1970						1980						1990						Latest 1990s					
			girls		boys		gender gap		girls		boys		gender gap		girls		boys		gender gap		girls		boys		gender gap	
			enrollment	ratio	enrollment	ratio	enrollment	ratio	enrollment	ratio	enrollment	ratio	enrollment	ratio	enrollment	ratio	enrollment	ratio	enrollment	ratio	enrollment	ratio	enrollment	ratio	enrollment	ratio
Algeria	intermediate access	non-GWE	58.0	93.0	35.0	0.62	80.7	107.7	27.0	0.75	91.6	108.4	16.8	0.85	93.4	3.1	0.97									
Bangladesh	intermediate access	non-GWE	35.0	72.0	37.0	0.49	46.0	75.0	29.0	0.61	66.0	77.0	11.0	0.86	70	98.4	0.71									
Bolivia	intermediate access	non-GWE	63.0	91.0	28.0	0.69	80.7	92.5	11.8	0.87	90.4	99.0	8.6	0.91												
Botswana	intermediate access	non-GWE	66.0	63.0	-3.0	1.05	99.9	82.8	-17.1	1.21	117.1	109.3	-7.8	1.07	113	119	6.1	0.95								
Central African Republic	intermediate access	non-GWE	41.0	88.0	47.0	0.47	50.6	92.1	41.5	0.55	50.6	79.8	29.2	0.63	45	69.1	24.1	0.65								
Congo, Democratic Republic	intermediate access	non-GWE	70.0				76.9	148.1	71.2	0.52	59.9	80.8	20.9	0.74	58.6	70	11.4	0.84								
Cote d'Ivoire	intermediate access	non-GWE	43.0	71.0	28.0	0.61	59.9	90.0	30.1	0.67	55.6	78.5	22.9	0.71	62.4	85.1	22.7	0.73								
Haiti	intermediate access	non-GWE	71.0								46.4	49.2	2.8	0.94												
Indonesia	intermediate access	non-GWE	73.0	87.0	14.0	0.84	100.0	115.0	15.0	0.87	114.0	117.0	3.0	0.97	112	117	5.0	0.96								
Jordan	intermediate access	non-GWE	65.0																							
Kenya	intermediate access	non-GWE	52.0	67.0	15.0	0.78	110.1	120.2	10.1	0.92	93.3	96.6	3.3	0.97	89.5	89.4	-0.1	1.00								
Madagascar	intermediate access	non-GWE	75.0	99.0	24.0	0.76	129.0	131.3	2.3	0.98	103.1	102.8	-0.3	1.00	92.9	119	26.4	0.78								
Nigeria	intermediate access	non-GWE	32.0	47.0	15.0	0.68	95.0	122.6	27.6	0.77	79.0	103.7	24.7	0.76	69.1	75	5.9	0.92								
Papua New Guinea	intermediate access	non-GWE	39.0	63.0	24.0	0.62	50.9	66.1	15.2	0.77	65.6	77.9	12.3	0.84	74	86.6	12.6	0.85								
Rwanda	intermediate access	non-GWE	61.0	76.0	15.0	0.80	59.9	65.8	5.9	0.91	68.9	70.4	1.5	0.98	75.2	88.4	13.2	0.85								
Togo	intermediate access	non-GWE	44.0	98.0	54.0	0.45	92.6	144.1	51.5	0.64	86.5	132.3	45.8	0.65	76.3	126	49.2	0.61								
Zimbabwe	intermediate access	non-GWE	63.0	81.0	18.0	0.78					114.8	116.6	1.8	0.98	105.3	111	5.2	0.95								
Egypt	intermediate access	GWE	53.0	87.0	34.0	0.61	61.0	84.4	23.4	0.72	85.8	101.4	15.6	0.85	93.7	107	13.3	0.88								
Ghana	intermediate access	GWE	54.0	73.0	19.0	0.74	70.7	88.0	17.3	0.80	68.4	82.2	13.8	0.83	68.9	81.2	12.3	0.85								
Guatemala	intermediate access	GWE	52.0	62.0	10.0	0.84	65.4	77.1	11.7	0.85					82.1	93.6	11.5	0.88								
India	intermediate access	GWE	61.0	90.0	29.0	0.68	67.0	98.0	31.0	0.68	84.0	110.0	26.0	0.76	75.8	98.5	22.6	0.77								
Morocco	intermediate access	GWE	36.0	66.0	30.0	0.55	62.9	102.3	39.4	0.61	54.3	79.0	24.7	0.69	74.2	97.3	23.1	0.76								
Cameroon	high access	non-GWE	78.0	103.0	25.0	0.76	89.5	107.1	17.6	0.84	93.4	108.8	15.4	0.86	83.7	87.9	4.2	0.95								
Dominican Republic	high access	non-GWE	99.0	100.0	1.0	0.99									104.3	103	-1.7	1.02								
Ecuador	high access	non-GWE	97.0	99.0	2.0	0.98	115.8	119.1	3.3	0.97					121.9	123	1.3	0.99								
El Salvador	high access	non-GWE	82.0	87.0	5.0	0.94	74.9	74.7	-0.2	1.00	81.6	80.7	-0.9	1.01	92.4	93.3	0.9	0.99								

Gross Enrollment Ratios

Country	Country Classification	GWE Countries	1970						1980						1990						Latest 1990s								
			girls		boys		gender	girl/boy		girls		boys		gender	girl/boy		girls		boys		gender	girl/boy		girls		boys		gender	
			ratio	gap	ratio	gap	gap	ratio	gap	ratio	gap	ratio	gap	ratio	gap	ratio	gap	ratio	gap	ratio	gap	ratio	gap	ratio	gap	ratio	gap	ratio	gap
Guyana	high access	non-GWE	96.0	100.0	4.0	0.96	100.4	102.9	2.5	0.98	96.9	98.5	1.6	0.98	93.9	95.2	1.3	0.99											
Honduras	high access	non-GWE	87.0	87.0	0.0	1.00	98.6	98.0	-0.6	1.01					111.8	110	-1.6	1.01											
Israel	high access	non-GWE	95.0	96.0	1.0	0.99								96.0	93.0	-3.0	1.03	96	96	0.0	1.00								
Malaysia	high access	non-GWE	83.0	91.0	8.0	0.91	92.0	93.0	1.0	0.99	94.0	94.0	0.0	1.00	92.9	95.3	2.4	0.97											
Mauritius	high access	non-GWE	95.0	94.0	-1.0	1.01	91.2	94.1	2.9	0.97	109.5	109.0	-0.5	1.00	106	105	-1.0	1.01											
Mozambique	high access	non-GWE	84.0											57.4	76.5	19.1	0.75	64.8	86.3	21.5	0.75								
Myanmar	high access	non-GWE	83.0	88.0	5.0	0.94	89.0	93.0	4.0	0.96	105.0	108.0	3.0	0.97	117	122	5.0	0.96											
Nicaragua	high access	non-GWE	79.0	79.0	0.0	1.00	96.7	91.9	-4.8	1.05	96.3	90.8	-5.5	1.06	104	101	-2.8	1.03											
Panama	high access	non-GWE	99.0	101.0	2.0	0.98	104.5	108.4	3.9	0.96	104.1	108.3	4.2	0.96	101.6	106	4.3	0.96											
Portugal	high access	non-GWE	95.0	99.0	4.0	0.96	122.6	123.8	1.2	0.99	120.4	126.3	5.9	0.95	124.9	131	6.0	0.95											
Sri Lanka	high access	non-GWE	94.0	104.0	10.0	0.90	100.0	105.0	5.0	0.95	105.0	107.0	2.0	0.98	108	110	2.0	0.98											
Swaziland	high access	non-GWE	84.0	91.0	7.0	0.92	101.8	103.8	2.0	0.98	108.7	113.9	5.2	0.95	115.1	122	6.5	0.95											
Thailand	high access	non-GWE	77.0	86.0	9.0	0.90	97.0	100.0	3.0	0.97	98.0	100.0			96	98	2.0	0.98											
Tunisia	high access	non-GWE	80.0	121.0	41.0	0.66	86.8	116.9	30.1	0.74	106.6	119.6	13.0	0.89	112.6	120	7.5	0.94											
Turkey	high access	non-GWE	93.0	124.0	31.0	0.75	90.0	102.0	12.0	0.88	96.0	102.0	6.0	0.94	85.8	98.3	12.5	0.87											
Venezuela	high access	non-GWE	98.0	94.0	-4.0	1.04	95.1	90.9	-4.2	1.05	97.2	94.3	-2.9	1.03	92.5	90.1	-2.4	1.03											
Zambia	high access	non-GWE	80.0	99.0	19.0	0.81	82.5	97.5	15.0	0.85					99.5	102	2.9	0.97											
Peru	high access	GWE	99.0	114.0	15.0	0.87	110.7	116.7	6.0	0.95					121.2	125	3.4	0.97											
Argentina	complete access	non-GWE	106.0	105.0	-1.0	1.01	106.0	106.2	0.2	1.00					112.7	114	1.2	0.99											
Belize	complete access	non-GWE	100.0											109.5	113.5	4.0	0.96	118.9	123	4.2	0.97								
Brazil	complete access	non-GWE	119.0											95.6	100.1	4.5	0.96												
Chile	complete access	non-GWE	104.0	107.0	3.0	0.97	107.9	110.0	2.1	0.98	99.1	100.6	1.5	0.99	100	103	2.6	0.97											
Colombia	complete access	non-GWE	103.0	107.0	4.0	0.96	113.6	110.3	-3.3	1.03					112.2	113	0.6	0.99											
Congo, Republic	complete access	non-GWE	105.0	110.0	5.0	0.95	134.5	108.0	-26.5	1.25	124.3	140.9	16.6	0.88	115.9	82.4	-33.5	1.41											
Costa Rica	complete access	non-GWE	109.0	110.0	1.0	0.99	103.9	105.9	2.0	0.98	100.0	101.4	1.4	0.99	103	104	0.5	1.00											
Cyprus	complete access	non-GWE	112.0											103.0	105.0	2.0	0.98	105.0	105.0	0.0	1.00	100	100	0.0	1.00				

Gross Enrollment Ratios

Country	Country Classification	GWE Countries	1970			1980			1990			Latest 1990s						
			girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy
Greece	complete access	non-GWE	106.0	108.0	2.0	0.98	102.8	103.0	0.2	1.00	97.5	98.1	0.6	0.99	93.5	94.2	0.7	0.99
Hong Kong	complete access	non-GWE	115.0	118.0	3.0	0.97	106.0	107.0	1.0	0.99	103.0	102.0	-1.0	1.01	95	93	-2.0	1.02
Jamaica	complete access	non-GWE	119.0	119.0	0.0	1.00	103.7	102.7	-1.0	1.01	100.9	101.8	0.9	0.99	99	100	1.1	0.99
Korea, Republic of	complete access	non-GWE	103.0	104.0	1.0	0.99	111.0	109.0	-2.0	1.02	105.0	105.0	0.0	1.00	102.6	97.9	-4.7	1.05
Lesotho	complete access	non-GWE	102.0	71.0	-31.0	1.44	121.9	85.2	-36.7	1.43	123.4	100.4	-23.0	1.23	126	96	-30.0	1.31
Mexico	complete access	non-GWE	103.0	106.0	3.0	0.97	119.1	121.7	2.6	0.98	112.4	115.3	2.9	0.97	116.9	107	-9.6	1.09
Paraguay	complete access	non-GWE	104.0	115.0	11.0	0.90	102.4	108.6	6.2	0.94	103.5	107.2	3.7	0.97	110.1	113	3.0	0.97
Philippines	complete access	non-GWE	112.0				110.0	114.0	4.0	0.96	105.7	107.7	2.0	0.98	119.3	118	-1.0	1.01
Singapore	complete access	non-GWE	101.0	109.0	8.0	0.93	106.0	109.0	3.0	0.97	102.0	105.0	3.0	0.97	99	103	4.0	0.96
South Africa	complete access	non-GWE	100.0	100.0	0.0	1.00					120.6	122.7	2.1	0.98	129	133	4.0	0.97
Spain	complete access	non-GWE	125.0	121.0	-4.0	1.03	108.5	109.5	1.0	0.99	107.9	109.1	1.2	0.99	107.8	110	2.4	0.98
Uruguay	complete access	non-GWE	109.0	115.0	6.0	0.95	106.5	107.4	0.9	0.99	107.9	109.2	1.3	0.99	108.1	109	1.3	0.99
Viet Nam	complete access	non-GWE	108.0				106.0	111.0	5.0	0.95								

Completion Rates													
Country	Country Classification	GWE Countries	1980				1990				latest 1990s		
			girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap
Afghanistan	low access	non-GWE	60.7	61.9	1.2	0.98				35.1	49.8	14.7	0.70
Burkina Faso	low access	non-GWE	73.8	76.5	2.7	0.96	67.8	70.9	3.1	0.96	77.4		
Burundi	low access	non-GWE	96.1	99.6	3.5	0.96	78.2	75.5	-2.7	1.04	86.4	95.3	8.9
Cambodia	low access	non-GWE											
Chad	low access	non-GWE					43.3	57.9	14.6	0.75	52.9	62.4	9.5
Ethiopia	low access	non-GWE									53	56.5	3.5
Gambia	low access	non-GWE	71.4	73.9	2.5	0.97				74.6	73.2	-1.4	
Guinea-Bissau	low access	non-GWE					48.5	63.9	15.4	0.76	52.8	53.4	0.6
Liberia	low access	non-GWE											
Mauritania	low access	non-GWE					72.6	77.1	4.5	0.94	67.7	60.9	-6.8
Nepal	low access	non-GWE									51.6		
Niger	low access	non-GWE	72.2	74.0	1.8	0.98	65.0	61.0	-4.0	1.07	65.2	66	0.8
Senegal	low access	non-GWE	81.6	89.1	7.5	0.92					81	89.1	8.1
Sierra Leone	low access	non-GWE											
Somalia	low access	non-GWE											
Sudan	low access	non-GWE	70.7	67.9	-2.8	1.04	95.3	90.2	-5.1	1.06	77.9	74.6	-3.3
Tanzania	low access	non-GWE	89.9	89.0	-0.9	1.01	80.7	77.1	-3.6	1.05	85.4	81.1	-4.3
Uganda	low access	non-GWE									94.5	93.5	-1.0
Yemen	low access	non-GWE					72.1	90.5	18.4	0.80	69.2	77.2	8.0
Benin	low access	GWE	62.3	58.8	-3.5	1.06	55.9	54.6	-1.3	1.02	62.3	65.6	3.3
Guinea	low access	GWE									70.7	79.8	9.1
Malawi	low access	GWE	39.7	47.5	7.8	0.84	57.4	71.3	13.9	0.81	43.6	45.2	1.6
Mali	low access	GWE					70.0	73.0	3.0	0.96	70	92	22.0
Pakistan	low access	GWE									44	56	12.0
Algeria	intermediate access	non-GWE	85.3	89.7	4.4	0.95	93.4	95.1	1.7	0.98	94	96	2.0
Bangladesh	intermediate access	non-GWE	26.1	17.8	-8.3	1.47					66.7	69.1	2.4
Bolivia	intermediate access	non-GWE					57.6						

Completion Rates

Country	Country Classification	GWE Countries	1980				1990				latest 1990s						
			girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy			
Botswana	intermediate access	non-GWE								97.9	94.0	-3.9	1.04	93.1	87	-6.1	1.07
Central African Republic	intermediate access	non-GWE	49.8	63.4	13.6	0.79				31.9	38.7	6.8	0.82				
Congo, Democratic Republic	intermediate access	non-GWE								50.1	58.5	8.4	0.86	22.7	27.9	5.2	0.81
Cote d'Ivoire	intermediate access	non-GWE								70.1	75.0	4.9	0.93	61.2	69.9	8.7	0.88
Haiti	intermediate access	non-GWE								46.1	47.2	1.1	0.98				
Indonesia	intermediate access	non-GWE												80.9	95.9	15.0	0.84
Jordan	intermediate access	non-GWE								100.0	100.0	0.0	1.00	98.6	98.2	-0.4	1.00
Kenya	intermediate access	non-GWE	61.9	59.6	-2.3	1.04				40.5	45.7	5.2	0.89				
Madagascar	intermediate access	non-GWE								40.4	36.3	-4.1	1.11	39.6	40	0.4	0.99
Nigeria	intermediate access	non-GWE															
Papua New Guinea	intermediate access	non-GWE								58.5	59.5	1.0	0.98	59	61	2.0	0.97
Rwanda	intermediate access	non-GWE								60.0	57.8	-2.2	1.04				
Togo	intermediate access	non-GWE	44.5	59.2	14.7	0.75				27.0	36.0	9.0	0.75	40	47	7.0	0.85
Zimbabwe	intermediate access	non-GWE												73.9	72.6	-1.3	1.02
Egypt	intermediate access	GWE	88.4	92.1	3.7	0.96											
Ghana	intermediate access	GWE								79.4	81.4	2.0	0.98				
Guatemala	intermediate access	GWE												33.7	36.6	2.9	0.92
India	intermediate access	GWE												55	61.5	6.5	0.89
Morocco	intermediate access	GWE	78.4	78.8	0.4	0.99				75.9	74.6	-1.3	1.02	17.3	17.6	0.3	0.98
Cameroon	high access	non-GWE	69.8	69.8	0.0	1.00				69.4	64.0	-5.4	1.08				
Dominican Republic	high access	non-GWE															
Ecuador	high access	non-GWE												86.1	84.4	-1.7	1.02
El Salvador	high access	non-GWE												77.2	76.2	-1.0	1.01
Guyana	high access	non-GWE															
Honduras	high access	non-GWE															
Israel	high access	non-GWE															
Malaysia	high access	non-GWE	96.9	96.7	-0.2	1.00				98.3	98.0	-0.3	1.00	99.6	98.1	-1.5	1.02
Mauritius	high access	non-GWE								97.8	97.1	-0.7	1.01	99.2	98	-1.2	1.01

Completion Rates

Country	Country Classification	GWE Countries	1980				1990				latest 1990s			
			girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy
Mozambique	high access	non-GWE				28.0	37.0	9.0	0.76	42.6	48.9	6.3	0.87	
Myanmar	high access	non-GWE												
Nicaragua	high access	non-GWE								56.5	51.9	-4.6	1.09	
Panama	high access	non-GWE	79.4	74.0	-5.4	1.07	68.8	-3.8	1.06	77.9	74.5	-3.4	1.05	
Portugal	high access	non-GWE												
Sri Lanka	high access	non-GWE				94.8	94.0	-0.8	1.01	96.2	96.8	0.6	0.99	
Swaziland	high access	non-GWE	81.1	76.6	-4.5	1.06	74.3	-3.8	1.05	88.8	84.5	-4.3	1.05	
Thailand	high access	non-GWE												
Tunisia	high access	non-GWE	84.1	88.5	4.4	0.95	91.9	14.1	0.85	91.7	90.4	-1.3	1.01	
Turkey	high access	non-GWE				97.0	98.1	1.1	0.99	99	98.6	-0.4	1.00	
Venezuela	high access	non-GWE				89.8	82.5	-7.3	1.09	92.1	86.3	-5.8	1.07	
Zambia	high access	non-GWE	81.7	88.4	6.7	0.92								
Peru	high access	GWE	73.5	77.7	4.2	0.95								
Argentina	complete access	non-GWE												
Belize	complete access	non-GWE				65.9	68.9	3.0	0.96					
Brazil	complete access	non-GWE												
Chile	complete access	non-GWE								100	100	0.0	1.00	
Colombia	complete access	non-GWE				50.2	70.9	20.7	0.71	75.6	70.4	-5.2	1.07	
Congo, Republic	complete access	non-GWE	82.7	81.1	-1.6	1.02	67.1	58.3	-8.8	1.15	77.6	40	-37.6	
Costa Rica	complete access	non-GWE	82.4	77.4	-5.0	1.06	84.1	80.8	-3.3	1.04	89.1	86.3	-2.8	
Cyprus	complete access	non-GWE	100.0	99.8	-0.2	1.00	100.0	99.9	-0.1	1.00	100	99.1	-0.9	
Greece	complete access	non-GWE	97.7	98.8	1.1	0.99	99.6	99.4	-0.2	1.00				
Hong Kong	complete access	non-GWE	99.3	98.4	-0.9	1.01								
Jamaica	complete access	non-GWE				98.4	92.8	-5.6	1.06					
Korea, Republic of	complete access	non-GWE	94.0	93.8	-0.2	1.00	99.6	99.3	-0.3	1.00	96.6	98.2	1.6	
Lesotho	complete access	non-GWE	68.3	49.8	-18.5	1.37	82.7	58.1	-24.6	1.42	74.5	62.1	-12.4	
Mexico	complete access	non-GWE								86.3	85.4	-0.9	1.01	
Paraguay	complete access	non-GWE	58.2	58.5	0.3	0.99	71.9	69.1	-2.8	1.04	70.7	71.9	1.2	

Completion Rates

Country	Country Classification	GWE Countries	1980				1990				latest 1990s					
			girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy		
Philippines	complete access	non-GWE														
Singapore	complete access	non-GWE														
South Africa	complete access	non-GWE				78.7	72.1	-6.6	1.09	78.7	72.1	-6.6	1.09			
Spain	complete access	non-GWE	94.2	94.9	0.7	0.99				98.7	98.3	-0.4	1.00			
Uruguay	complete access	non-GWE					95.8	93.2	-2.6	1.03	99.1	96.5	-2.6	1.03		
Viet Nam	complete access	non-GWE														

Transition to Secondary School																	
Country	Country Classification	GWE Countries	1970			1980			1990			Latest 1990s					
			girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy			
Afghanistan	low access	non-GWE															
Burkina Faso	low access	non-GWE	13.00	14.00	1.00	0.93								27.00	27.00	0.00	1.00
Burundi	low access	non-GWE					7.00	8.00	1.00	0.88	9.00	11.00	2.00	11.00	12.00	1.00	0.92
Cambodia	low access	non-GWE															
Chad	low access	non-GWE												46.00	46.00	0.00	1.00
Ethiopia	low access	non-GWE												77.00	85.00	8.00	0.91
Gambia	low access	non-GWE					42.00	41.00	-1.00	1.02							
Guinea-Bissau	low access	non-GWE												47.00	51.00	4.00	0.92
Liberia	low access	non-GWE															
Mauritania	low access	non-GWE									27.00	33.00	6.00	29.00	37.00	8.00	0.78
Nepal	low access	non-GWE												77.00	79.00	2.00	0.97
Niger	low access	non-GWE	20.00	26.00	6.00	0.77					24.00	28.00	4.00	29.00	28.00	-1.00	1.04
Senegal	low access	non-GWE												29.00	31.00	2.00	0.94
Sierra Leone	low access	non-GWE	56.00	58.00	2.00	0.97											
Somalia	low access	non-GWE															
Sudan	low access	non-GWE	65.00	122.00	57.00	0.53											
Tanzania	low access	non-GWE															
Uganda	low access	non-GWE												42.00	38.00	-4.00	1.11
Yemen	low access	non-GWE															
Benin	low access	GWE	31.00	27.00	-4.00	1.15											
Guinea	low access	GWE					46.00	71.00	25.00	0.65							
Malawi	low access	GWE															
Mali	low access	GWE					36.00	41.00	5.00	0.88				54.00	58.00	4.00	0.93
Pakistan	low access	GWE															
Algeria	intermediate access	non-GWE					62.00	55.00	-7.00	1.13	83.00	79.00	-4.00	82.00	74.00	-8.00	1.11
Bangladesh	intermediate access	non-GWE															
Bolivia	intermediate access	non-GWE															

Country	Country Classification	GWE Countries	Transition to Secondary School																
			1970			1980			1990			Latest 1990s							
			girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap		
Malaysia	high access	non-GWE																	
Mauritius	high access	non-GWE				47.00	47.00	0.00	1.00	53.00	47.00	-6.00	1.13	65.00	57.00	-8.00	1.14		
Mozambique	high access	non-GWE												41.00	41.00	0.00	1.00		
Myanmar	high access	non-GWE	51.00	65.00	14.00	0.78													
Nicaragua	high access	non-GWE													93.00	97.00	4.00	0.96	
Panama	high access	non-GWE																	
Portugal	high access	non-GWE																	
Sri Lanka	high access	non-GWE								92.00	88.00	-4.00	1.05	92.00	88.00	-4.00	1.05		
Swaziland	high access	non-GWE	45.00	49.00	4.00	0.92	70.00	69.00	-1.00	1.01	75.00	77.00	2.00	0.97	73.00	72.00	-1.00	1.01	
Thailand	high access	non-GWE																	
Tunisia	high access	non-GWE					31.00	31.00	0.00	1.00	48.00	48.00	0.00	1.00	66.00	64.00	-2.00	1.03	
Turkey	high access	non-GWE					33.00	47.00	14.00	0.70	44.00	62.00	18.00	0.71					
Venezuela	high access	non-GWE	63.00	68.00	5.00	0.93	70.00	69.00	-1.00	1.01	75.00	72.00	-3.00	1.04	84.00	81.00	-3.00	1.04	
Zambia	high access	non-GWE																	
Peru	high access	GWE					78.00	81.00	3.00	0.96									
Argentina	complete access	non-GWE	34.00	25.00	-9.00	1.36													
Belize	complete access	non-GWE													72.00	66.00	-6.00	1.09	
Brazil	complete access	non-GWE																	
Chile	complete access	non-GWE													57.00	50.00	-7.00	1.14	
Colombia	complete access	non-GWE																	
Congo, Republic	complete access	non-GWE					80.00	86.00	6.00	0.93					56.00	47.00	-9.00	1.19	
Costa Rica	complete access	non-GWE	50.00	49.00	-1.00	1.02	56.00	55.00	-1.00	1.02	64.00	62.00	-2.00	1.03	69.00	67.00	-2.00	1.03	
Cyprus	complete access	non-GWE	77.00	70.00	-7.00	1.10	91.00	88.00	-3.00	1.03				199.00	101.00	-98.00	1.97		
Greece	complete access	non-GWE	64.00	63.00	-1.00	1.02	100.00	103.00	3.00	0.97	103.00	106.00	3.00	0.97					
Hong Kong	complete access	non-GWE					93.00	87.00	-6.00	1.07									
Jamaica	complete access	non-GWE																	
Korea, Republic of	complete access	non-GWE	58.00	80.00	22.00	0.73	96.00	99.00	3.00	0.97				100.00	100.00	0.00	1.00		
Lesotho	complete access	non-GWE																	

Apparent Gross Intake Ratios

Country	Country Classification	GWE Countries	1970			1980			1990			Latest 1990s						
			girls	gender gap	girl/boy	girls	gender gap	girl/boy	girls	gender gap	girl/boy	girls	gender gap	girl/boy				
Afghanistan	low access	non-GWE				16	67	51	0.24			14	42	28	0.33			
Burkina Faso	low access	non-GWE	10	17	7	0.59	15	26	11	0.58	25	40	15	0.63	34	53	19	0.64
Burundi	low access	non-GWE				21	32	11	0.66	63	73	10	0.86	69	87	18	0.79	
Cambodia	low access	non-GWE												119	129	10	0.92	
Chad	low access	non-GWE									41	69	28	0.59	67	99	32	0.68
Ethiopia	low access	non-GWE												58	105	47	0.55	
Gambia	low access	non-GWE	15	27	12	0.56	57	91	34	0.63				73.8	78.7	5	0.94	
Guinea-Bissau	low access	non-GWE									28	57	29	0.49	47			
Liberia	low access	non-GWE																
Mauritania	low access	non-GWE				25	45	20	0.56	46	60	14	0.77	89	95	6	0.94	
Nepal	low access	non-GWE												117	142	25	0.82	
Niger	low access	non-GWE	11	20	9	0.55	20	37	17	0.54	20	35	15	0.57	29.9	42.2	12	0.71
Senegal	low access	non-GWE	29	44	15	0.66	37	53	16	0.70				63.4	70.3	7	0.90	
Sierra Leone	low access	non-GWE																
Somalia	low access	non-GWE												9.2	13.7	5	0.67	
Sudan	low access	non-GWE				48	71	23	0.68	48	64	16	0.75	68.3	74.2	6	0.92	
Tanzania	low access	non-GWE									84	86	3	0.97	83.1	86.9	4	0.96
Uganda	low access	non-GWE									116	135	19	0.86	222	231	9	0.96
Yemen	low access	non-GWE									46	105	59	0.44	65.9	94.7	29	0.70
Benin	low access	GWE	27	59	32	0.46	54	115	61	0.47	49	103	54	0.48	58.4	80.8	22	0.72
Guinea	low access	GWE				61	108	47	0.56					33.8	47.1	13	0.72	
Malawi	low access	GWE				91	109	18	0.83	97	105	8	0.92	845	83	-762	10.18	
Mali	low access	GWE				16	29	13	0.55	20	34	14	0.59	43	60	17	0.72	
Pakistan	low access	GWE												88.3	111	23	0.80	
Algeria	intermediate access	non-GWE				77	96	19	0.80	96	106	10	0.91	102	106	4	0.96	
Bangladesh	intermediate access	non-GWE												117	132	16	0.88	
Bolivia	intermediate access	non-GWE									139	140	1	0.99				

Apparent Gross Intake Ratios

Country	Country Classification	GWE Countries	1970						1980						1990						Latest 1990s					
			girls		boys		gender gap		girl/boy		girls/boys		gender gap		girl/boy		girls/boys		gender gap		girl/boy		girls/boys		gender gap	
			boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls
Botswana	intermediate access	non-GWE	63	56	-7	1.13							118	117	-1	1.01	134	140	6	0.96						
Central African Republic	intermediate access	non-GWE	56	105	49	0.53	52	86	34	0.60	51	69	18	0.74	58											
Congo, Democratic Republic	intermediate access	non-GWE	95	129	34	0.74	90	117	27	0.77			61	78	17	0.78										
Cote d'Ivoire	intermediate access	non-GWE					56	77	21	0.73	49	65	16	0.75	54	67	13	0.81								
Haiti	intermediate access	non-GWE									58	61	3	0.95	160	190	30	0.84								
Indonesia	intermediate access	non-GWE													111	114	3	0.97								
Jordan	intermediate access	non-GWE																								
Kenya	intermediate access	non-GWE	68	85	17	0.80	135	140	5	0.96																
Madagascar	intermediate access	non-GWE									107	99	-8	1.08	121	124	3	0.98								
Nigeria	intermediate access	non-GWE													73	88	15	0.83								
Papua New Guinea	intermediate access	non-GWE																								
Rwanda	intermediate access	non-GWE	62	73	11	0.85	76	80	4	0.95	94	95	1	0.99	107											
Togo	intermediate access	non-GWE	51	100	49	0.51	82	112	30	0.73	83	109	26	0.76	76	89	13	0.85								
Zimbabwe	intermediate access	non-GWE									132	133	1	0.99	120	124	4	0.97								
Egypt	intermediate access	GWE	64	91	27	0.70	69	89	20	0.78					85	93	8	0.91								
Ghana	intermediate access	GWE	68	82	14	0.83	83	96	13	0.86	77	87	10	0.89	84											
Guatemala	intermediate access	GWE													109	117	8	0.93								
India	intermediate access	GWE	79	116	37	0.68									114	137	23	0.83								
Morocco	intermediate access	GWE					57	85	28	0.67	65	87	22	0.75	84	100	16	0.84								
Cameroon	high access	non-GWE					84	99	15	0.85	80	90	10	0.89												
Dominican Republic	high access	non-GWE																								
Ecuador	high access	non-GWE	131	134	3	0.98									132	134	2	0.99								
El Salvador	high access	non-GWE													125	129	4	0.97								
Guyana	high access	non-GWE	88	90	2	0.98									95	97	2	0.98								
Honduras	high access	non-GWE					138	145	7	0.95					131	135	4	0.97								
Israel	high access	non-GWE																								
Malaysia	high access	non-GWE					93	94	1	0.99	95	95	0	1.00	96	96	0	1.00								

Apparent Gross Intake Ratios																						
Country	Country Classification	GWE Countries	1970				1980				1990				Latest 1990s							
			girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap					
Mauritius	high access	non-GWE												99	99	0	1.00	100	99	-1	1.01	
Mozambique	high access	non-GWE												65	81	16	0.80	94.5	79	-16	1.20	
Myanmar	high access	non-GWE																				
Nicaragua	high access	non-GWE	136	139	3	0.98												130	133	3	0.98	
Panama	high access	non-GWE	106	112	6	0.95	105	109	4	0.96												
Portugal	high access	non-GWE																				
Sri Lanka	high access	non-GWE	84	88	4	0.95								99	99	0	1.00	107	107	0	1.00	
Swaziland	high access	non-GWE	96	106	10	0.91	118	121	3	0.98	124	130	6	0.95	111	113	2	0.98				
Thailand	high access	non-GWE					97	98	1	0.99												
Tunisia	high access	non-GWE					86	100	14	0.86	99	103	4	0.96	101	103	2	0.98				
Turkey	high access	non-GWE									90	96	6	0.94	102	108	6	0.94				
Venezuela	high access	non-GWE									112	117	5	0.96	102	105	3	0.97				
Zambia	high access	non-GWE					88	94	6	0.94							96.7	92	-5	1.05		
Peru	high access	GWE	114	132	18	0.86	117	118	1	0.99								123	124	1	0.99	
Argentina	complete access	non-GWE	118	120	2	0.98													117	117	0	1.00
Belize	complete access	non-GWE																				
Brazil	complete access	non-GWE																				
Chile	complete access	non-GWE	126	125	-1	1.01												102	104	2	0.98	
Colombia	complete access	non-GWE	135	144	9	0.94					133	118	-15	1.13	37	142	105	0.26				
Congo, Republic	complete access	non-GWE					115	124	9	0.93	88	100	12	0.88	83	91	8	0.91				
Costa Rica	complete access	non-GWE	113	114	1	0.99	110	116	6	0.95								102	102	0	1.00	
Cyprus	complete access	non-GWE																				
Greece	complete access	non-GWE	105	107	2	0.98	111	111	0	1.00												
Hong Kong	complete access	non-GWE					109	107	-2	1.02												
Jamaica	complete access	non-GWE					96	97	1	0.99	94	97	3	0.97	132	132	0	1.00				
Korea, Republic of	complete access	non-GWE	112	112	0	1.00	109	108	-1	1.01	98	98	0	1.00	106	106	0	1.00				
Lesotho	complete access	non-GWE					137	121	-16	1.13	115	111	-4	1.04	91	88	-3	1.03				



Country	Country Classification	Educational Attainment															
		1970				1980				1990				2000			
		girls	boys	gender gap	girl/boy	girls/boys	gender gap	girl/boy	girls/boys	gender gap	girl/boy	girls/boys	gender gap	girl/boy	girls/boys	gender gap	
Afghanistan	low access	0.20	1.22	1.02	0.16	0.21	1.23	1.01	0.17	0.37	1.53	1.16	0.24	0.62	1.91	1.29	0.32
Burkina Faso	low access																
Burundi	low access										0.86	1.63	0.77	0.53			
Cambodia	low access																
Chad	low access																
Ethiopia	low access																
Gambia	low access				0.32	0.77	0.45	0.42	0.76	1.57	0.81	0.48	1.17	2.08	0.91	0.56	
Guinea-Bissau	low access				0.21	0.21	0.00	1.00	0.40	0.68	0.28	0.59	0.53	0.86	0.33	0.61	
Liberia	low access	0.38	1.16	0.78	0.33	0.71	1.87	1.16	0.38	0.96	2.15	1.19	0.45	1.17	2.52	1.35	0.46
Mauritania	low access								1.64	2.33	0.70	0.70					
Nepal	low access	0.03	0.23	0.20	0.14	0.14	1.04	0.91	0.13	0.45	1.31	0.86	0.34	0.86	1.75	0.89	0.49
Niger	low access	0.12	0.40	0.27	0.31	0.20	0.72	0.51	0.28	0.40	0.93	0.53	0.43	0.54	1.07	0.53	0.51
Senegal	low access	0.92	1.79	0.87	0.51	1.33	2.29	0.97	0.58	1.37	2.23	0.86	0.61	1.57	2.34	0.77	0.67
Sierra Leone	low access	0.39	0.89	0.50	0.44	0.82	1.60	0.78	0.51								
Somalia	low access																
Sudan	low access	0.21	0.73	0.52	0.28	0.46	1.13	0.67	0.41	0.80	1.64	0.84	0.49	1.17	1.95	0.79	0.60
Tanzania	low access	2.14	3.24	1.10	0.66	1.85	3.11	1.25	0.60	2.10	3.12	1.02	0.67	2.20	2.85	0.65	0.77
Uganda	low access	0.78	1.97	1.19	0.40	0.97	2.06	1.09	0.47	2.14	3.43	1.29	0.62	2.31	3.55	1.24	0.65
Yemen	low access				0.06	0.56	0.51	0.10	0.35	1.90	1.55	0.18					
Benin	low access	0.18	0.59	0.40	0.31	0.51	1.22	0.71	0.42	0.89	2.10	1.22	0.42	1.19	2.54	1.35	0.47
Guinea	low access																
Malawi	low access	1.19	2.58	1.39	0.46	1.74	3.43	1.68	0.51	2.00	3.11	1.11	0.64	2.70	3.35	0.65	0.81
Mali	low access	0.16	0.46	0.30	0.34	0.27	0.65	0.38	0.41	0.33	0.75	0.43	0.44	0.46	0.93	0.47	0.49
Pakistan	low access	0.40	1.46	1.07	0.27	0.59	1.60	1.01	0.37	1.50	2.74	1.24	0.55	1.40	2.77	1.37	0.50
Algeria	intermediate access	0.58	1.88	1.31	0.31	1.31	2.67	1.36	0.49	2.18	3.41	1.23	0.64	2.95	3.97	1.02	0.74
Bangladesh	intermediate access	0.21	0.96	0.75	0.22	0.80	1.82	1.02	0.44	1.10	2.04	0.94	0.54	1.48	2.28	0.80	0.65
Bolivia	intermediate access	2.45	3.69	1.24	0.66	2.74	3.78	1.05	0.72	3.33	4.18	0.85	0.80	3.92	4.63	0.71	0.85

Country	Country Classification	Educational Attainment															
		1970				1980				1990				2000			
		girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy
Botswana	intermediate access	1.85	1.65	-0.20	1.12	2.89	2.62	-0.28	1.11	4.46	4.15	-0.30	1.07	4.87	4.65	-0.22	1.05
Central African Republic	intermediate access	0.25	1.00	0.75	0.25	0.58	1.53	0.95	0.38	1.10	2.28	1.18	0.48	1.35	2.47	1.12	0.55
Congo, Democratic Republic	intermediate access												2.86	3.49	0.64	0.82	3.05
Cote d'Ivoire	intermediate access																
Haiti	intermediate access	0.70	1.09	0.38	0.65	1.23	1.61	0.38	0.76	1.41	3.06	1.66	0.46	1.41	2.56	1.15	0.55
Indonesia	intermediate access	1.95	3.14	1.19	0.62	2.60	3.60	0.99	0.72	2.56	3.28	0.72	0.78	3.22	3.84	0.63	0.84
Jordan	intermediate access	1.59	3.08	1.49	0.52	2.14	3.30	1.16	0.65	3.31	3.86	0.55	0.86	3.75	4.33	0.58	0.87
Kenya	intermediate access	1.26	2.62	1.36	0.48	2.06	3.54	1.48	0.58	2.60	3.64	1.04	0.71	3.10	3.95	0.84	0.79
Madagascar	intermediate access																
Nigeria	intermediate access																
Papua New Guinea	intermediate access	0.68	1.14	0.47	0.59	1.10	1.78	0.69	0.62	1.65	2.29	0.64	0.72	2.17	2.79	0.62	0.78
Rwanda	intermediate access	0.41	1.50	1.09	0.27	1.07	2.12	1.05	0.51	1.51	2.40	0.90	0.63	1.99	2.73	0.73	0.73
Togo	intermediate access	0.31	1.13	0.82	0.27	0.87	2.30	1.43	0.38	1.34	2.94	1.60	0.46	1.67	3.31	1.64	0.50
Zimbabwe	intermediate access	1.47	2.16	0.70	0.68	1.53	2.20	0.68	0.69	2.95	3.71	0.75	0.80	3.14	3.78	0.64	0.83
Egypt	intermediate access				1.06	1.99		0.93	0.53	2.04	3.32	1.28	0.61	2.79	3.87	1.08	0.72
Ghana	intermediate access	1.28	2.60	1.32	0.49	1.42	3.03	1.61	0.47	1.55	3.31	1.76	0.47	1.71	3.63	1.92	0.47
Guatemala	intermediate access	1.25	1.63	0.38	0.77	1.92	2.49	0.56	0.77	2.11	2.64	0.53	0.80	2.40	2.90	0.51	0.83
India	intermediate access	1.08	2.83	1.75	0.38	1.40	3.25	1.84	0.43	2.09	3.90	1.81	0.54	2.88	4.63	1.75	0.62
Morocco	intermediate access																
Cameroon	high access	1.02	2.09	1.07	0.49	1.47	2.41	0.93	0.61	2.02	2.79	0.77	0.72	2.33	2.97	0.64	0.78
Dominican Republic	high access	2.68	2.81	0.13	0.95	2.69	2.96	0.26	0.91	2.99	3.04	0.05	0.98	3.21	3.23	0.02	0.99
Ecuador	high access	2.86	3.07	0.21	0.93	4.23	4.61	0.37	0.92	3.87	3.99	0.12	0.97	4.08	4.15	0.08	0.98
El Salvador	high access	1.85	2.61	0.77	0.71	2.61	2.96	0.35	0.88	3.44	3.62	0.19	0.95	4.23	4.36	0.13	0.97
Guyana	high access	3.86	3.94	0.07	0.98	4.22	4.21	0.00	1.00	4.39	4.30	-0.09	1.02	4.58	4.48	-0.11	1.02
Honduras	high access	1.90	2.05	0.15	0.93	2.30	2.44	0.14	0.94	2.73	3.83	1.11	0.71	3.15	4.10	0.95	0.77
Israel	high access	5.83	6.38	0.55	0.91	6.51	6.97	0.46	0.93	6.51	6.74	0.23	0.97	6.52	6.69	0.17	0.97
Malaysia	high access	2.05	3.95	1.90	0.52	2.81	4.64	1.83	0.61	3.65	4.69	1.05	0.78	4.14	4.93	0.79	0.84
Mauritius	high access	2.94	4.02	1.09	0.73	3.44	4.50	1.06	0.76	3.49	4.18	0.69	0.84	3.79	4.30	0.52	0.88

Country	Country Classification	Educational Attainment															
		1970				1980				1990				2000			
		girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy	girls	boys	gender gap	girl/boy
Mozambique	high access	0.15	0.91	0.77	0.16	0.32	1.08	0.76	0.30	0.56	1.10	0.53	0.51	0.75	1.22	0.47	0.62
Myanmar	high access	0.78	1.18	0.41	0.65	0.99	1.27	0.29	0.78	1.59	1.90	0.31	0.84	1.82	2.07	0.25	0.88
Nicaragua	high access	2.15	2.26	0.11	0.95	2.37	2.50	0.13	0.95	2.75	2.73	-0.01	1.00	3.26	2.61	-0.65	1.25
Panama	high access	3.64	3.42	-0.22	1.06	4.48	4.51	0.03	0.99	5.64	5.68	0.04	0.99	5.83	5.99	0.16	0.97
Portugal	high access	1.76	2.43	0.67	0.72	2.34	2.74	0.40	0.85	2.88	3.18	0.30	0.90	3.17	3.39	0.22	0.94
Sri Lanka	high access	3.16	3.32	0.16	0.95	3.39	3.87	0.48	0.88	3.49	3.91	0.43	0.89	3.91	4.24	0.33	0.92
Swaziland	high access	2.00	2.53	0.53	0.79	3.34	3.74	0.39	0.89	4.73	4.20	-0.54	1.13	5.21	4.80	-0.40	1.08
Thailand	high access	3.25	4.27	1.02	0.76	3.40	3.95	0.55	0.86	4.38	4.73	0.35	0.93	4.64	5.20	0.56	0.89
Tunisia	high access	0.76	1.64	0.88	0.46	1.52	2.76	1.24	0.55	2.17	3.30	1.13	0.66	2.90	3.80	0.90	0.76
Turkey	high access	1.44	2.83	1.39	0.51	1.79	3.42	1.63	0.52	2.71	3.27	0.56	0.83	3.27	4.27	1.01	0.76
Venezuela	high access	2.67	2.33	-0.34	1.15	3.77	3.97	0.20	0.95	3.55	3.64	0.09	0.98	4.38	4.39	0.01	1.00
Zambia	high access	1.80	3.48	1.68	0.52	2.61	4.30	1.69	0.61	2.99	4.38	1.39	0.68	4.00	4.61	0.62	0.87
Peru	high access	2.90	3.92	1.02	0.74	3.74	4.58	0.85	0.82	3.85	4.34	0.49	0.89	4.29	4.87	0.59	0.88
Argentina	complete access	5.09	5.22	0.14	0.97	5.60	5.50	-0.10	1.02	5.96	6.02	0.06	0.99	6.11	6.15	0.04	0.99
Belize	complete access																
Brazil	complete access	2.37	2.56	0.19	0.93	2.28	2.35	0.06	0.97	3.13	3.09	-0.04	1.01	3.62	4.21	0.59	0.86
Chile	complete access	4.05	4.20	0.15	0.96	4.55	4.69	0.15	0.97	5.01	5.13	0.13	0.98	5.35	5.44	0.09	0.98
Colombia	complete access	2.31	2.50	0.19	0.92	3.04	2.92	-0.12	1.04	3.24	2.79	-0.45	1.16	3.34	2.96	-0.38	1.13
Congo, Republic	complete access																
Costa Rica	complete access	3.34	3.33	-0.01	1.00	3.90	3.93	0.02	0.99	3.93	3.95	0.02	0.99	4.06	4.08	0.02	0.99
Cyprus	complete access	3.72	4.50	0.78	0.83	4.08	4.75	0.67	0.86	5.20	5.66	0.46	0.92	5.34	5.73	0.39	0.93
Greece	complete access	3.76	4.97	1.21	0.76	4.61	5.34	0.74	0.86	4.73	6.09	1.36	0.78	4.87	5.99	1.12	0.81
Hong Kong	complete access	3.30	4.82	1.52	0.68	4.11	5.14	1.02	0.80	4.54	5.18	0.63	0.88	4.68	5.23	0.54	0.90
Jamaica	complete access	2.74	2.52	-0.22	1.09	2.98	2.77	-0.20	1.07	3.13	2.87	-0.26	1.09	3.25	3.02	-0.23	1.08
Korea, Republic of	complete access	3.00	3.94	0.94	0.76	4.37	5.18	0.81	0.84	5.25	5.75	0.49	0.91	5.40	5.78	0.38	0.93
Lesotho	complete access	3.91	2.64	-1.27	1.48	4.11	2.93	-1.18	1.40	4.10	2.93	-1.17	1.40	4.17	3.06	-1.11	1.36
Mexico	complete access	2.47	3.57	1.10	0.69	3.38	3.64	0.26	0.93	4.33	4.64	0.32	0.93	4.44	4.92	0.48	0.90
Paraguay	complete access	3.26	3.62	0.37	0.90	3.83	4.08	0.26	0.94	4.31	4.52	0.21	0.95	4.32	4.47	0.15	0.97

Educational Attainment

Country	Country Classification	1970						1980						1990						2000							
		girls	boys	gender gap	girl/boy	girls/boys	gender gap	girl/boy	girls/boys	gender gap	girl/boy	girls/boys	gender gap	girl/boy	girls/boys	gender gap	girl/boy	girls/boys	gender gap	girl/boy	girls/boys	gender gap	girl/boy	girls/boys	gender gap	girl/boy	
Philippines	complete access	3.63	3.80	0.17	0.96	4.64	4.70	0.06	0.99	5.02	5.06	0.04	0.99	5.27	5.37	0.10	0.98										
Singapore	complete access	2.73	3.96	1.23	0.69	3.06	3.83	0.77	0.80	3.65	4.29	0.64	0.85	4.24	4.84	0.60	0.88										
South Africa	complete access	3.37	3.49	0.12	0.97	3.70	2.72	-0.98	1.36	4.21	4.47	0.25	0.94	4.95	4.22	-0.73	1.17										
Spain	complete access	3.92	4.33	0.41	0.91	3.72	4.22	0.50	0.88	4.26	4.13	-0.13	1.03	4.27	4.16	-0.11	1.03										
Uruguay	complete access	4.21	4.02	-0.19	1.05	4.38	4.34	-0.04	1.01	4.63	4.54	-0.08	1.02	4.73	4.60	-0.13	1.03										
Viet Nam	complete access																										

Pupil Teacher Ratio						
Country	Country Classification	GWE Countries	1970	1980	1990	latest 1990s
Afghanistan	low access	non-GWE	41.2	31.6		33.7
Burkina Faso	low access	non-GWE	44.5	54.5	56.7	50
Burundi	low access	non-GWE	36.7	36.6	66.9	61
Cambodia	low access	non-GWE	16.8	43.8		44.4
Chad	low access	non-GWE	64.9		65.8	68
Ethiopia	low access	non-GWE	48.5	63.9	36.1	37.9
Gambia	low access	non-GWE	27.5	24.4	31.5	33.3
Guinea-Bissau	low access	non-GWE		35.9	39.9	42
Liberia	low access	non-GWE	35.5	16.2		
Mauritania	low access	non-GWE	24.0	41.5	44.7	50.2
Nepal	low access	non-GWE		38.4	38.7	38
Niger	low access	non-GWE	38.9	41.5	41.7	41
Senegal	low access	non-GWE	45.2	45.7	52.9	49
Sierra Leone	low access	non-GWE	32.3			
Somalia	low access	non-GWE	33.2	33.5		
Sudan	low access	non-GWE	46.5	33.7	34.0	29
Tanzania	low access	non-GWE	46.8	41.4	34.9	38
Uganda	low access	non-GWE			29.4	61
Yemen	low access	non-GWE			36.0	22
Benin	low access	GWE	41.4	47.5	36.2	55
Guinea	low access	GWE		22.9	49.0	52
Malawi	low access	GWE	43.3	64.6	61.1	61
Mali	low access	GWE	40.1	42.4	41.8	72
Pakistan	low access	GWE	41.5	36.5	37.0	49
Algeria	intermediate access	non-GWE		35.2	27.7	28
Bangladesh	intermediate access	non-GWE	46.5	53.6	63.0	76.36
Bolivia	intermediate access	non-GWE	26.6	20.0	24.7	
Botswana	intermediate access	non-GWE	36.5	32.3	31.7	28
Central African Repu	intermediate access	non-GWE	63.7	59.6	77.0	
Congo, Democratic Re	intermediate access	non-GWE	42.6		40.0	44.8
Cote d'Ivoire	intermediate access	non-GWE	45.0	38.7	36.3	43
Haiti	intermediate access	non-GWE		44.1	21.2	33
Indonesia	intermediate access	non-GWE		32.4	23.2	22.1
Jordan	intermediate access	non-GWE	38.8	31.8	25.1	20.8
Kenya	intermediate access	non-GWE	34.4	38.3	31.3	30.5
Madagascar	intermediate access	non-GWE	65.0	38.1	40.3	51
Nigeria	intermediate access	non-GWE	34.1		41.0	34
Papua New Guinea	intermediate access	non-GWE	29.7		31.7	34.2
Rwanda	intermediate access	non-GWE	59.7	59.2	57.4	54.9
Togo	intermediate access	non-GWE	58.5	55.1	58.3	49
Zimbabwe	intermediate access	non-GWE		43.9	35.8	37
Egypt	intermediate access	GWE	38.0		25.2	23.4
Ghana	intermediate access	GWE	29.6	30.1	29.1	

Pupil Teacher Ratio						
Country	Country Classification	GWE Countries	1970	1980	1990	latest 1990s
Guatemala	intermediate access	GWE	36.0	33.8	34.0	36.4
India	intermediate access	GWE	41.5	54.9		48
Morocco	intermediate access	GWE	34.3	38.2	27.1	27.6
Cameroon	high access	non-GWE	47.7	51.5	51.1	55
Dominican Republic	high access	non-GWE	55.4		47.2	34.7
Ecuador	high access	non-GWE	37.0	36.2	24.3	20.1
El Salvador	high access	non-GWE	37.4	48.0	40.1	32.8
Guyana	high access	non-GWE	29.1	33.5	29.7	30
Honduras	high access	non-GWE	35.3	36.7	35.0	32
Israel	high access	non-GWE		15.0	17.9	
Malaysia	high access	non-GWE		27.3	20.4	18.75
Mauritius	high access	non-GWE	31.8	20.2	21.1	23.9
Mozambique	high access	non-GWE			54.5	62.2
Myanmar	high access	non-GWE	46.6			
Nicaragua	high access	non-GWE	37.3	35.5	33.3	38
Panama	high access	non-GWE	27.1	27.3	23.0	
Portugal	high access	non-GWE	33.6	18.0	14.1	11.3
Sri Lanka	high access	non-GWE			29.1	32.3
Swaziland	high access	non-GWE	40.5	34.2	32.7	33.9
Thailand	high access	non-GWE	34.7		22.1	21
Tunisia	high access	non-GWE	47.5	38.5	27.8	24.2
Turkey	high access	non-GWE	37.8	26.6	30.4	30
Venezuela	high access	non-GWE	34.8	34.1	22.9	
Zambia	high access	non-GWE	46.8	48.6	44.0	48
Peru	high access	GWE	35.5	37.5	30.5	25.72
Argentina	complete access	non-GWE	19.4			16.1
Belize	complete access	non-GWE	26.8	24.4	26.3	26
Brazil	complete access	non-GWE	28.0	25.6	23.0	24.9
Chile	complete access	non-GWE	50.0		29.4	29.8
Colombia	complete access	non-GWE	38.2	30.6	29.9	25.4
Congo, Republic	complete access	non-GWE	61.9	54.4	65.2	64
Costa Rica	complete access	non-GWE	29.8	27.7	31.9	30
Cyprus	complete access	non-GWE	30.3	22.2	20.5	17.5
Greece	complete access	non-GWE	31.4	24.1	18.7	15
Hong Kong	complete access	non-GWE	33.0	30.1	26.9	23.7
Jamaica	complete access	non-GWE		41.4	38.4	24.7
Korea, Republic of	complete access	non-GWE	56.9	47.5	35.6	27.87
Lesotho	complete access	non-GWE	46.3	48.0	54.5	44.6
Mexico	complete access	non-GWE	45.9	39.1	30.5	27.29
Paraguay	complete access	non-GWE	32.3	27.4	24.7	20.1
Philippines	complete access	non-GWE	28.6	32.2	33.4	35.11
Singapore	complete access	non-GWE	29.7	30.8	25.8	21.6
South Africa	complete access	non-GWE			26.7	36.3

Pupil Teacher Ratio						
Country	Country Classification	GWE Countries	1970	1980	1990	latest 1990s
Spain	complete access	non-GWE	34.0	28.3	22.0	17.3
Uruguay	complete access	non-GWE	24.0	18.8	21.9	20.5
Viet Nam	complete access	non-GWE		38.6	35.1	30.1

Appendix B: Crises Patterns by Access, GWE, Region and Country

Country Classification	GWE Countries	Geographical Region	INDICATORS	10% GNP/capita drop for two years	WAR	AIDS Prevalence
low access	non-GWE	Asia and Pacific	Afghanistan	under 10%	conflict + IDP	under 11%
			Cambodia			under 11%
		North Africa and Middle East	Yemen	under 10%	no conflict	under 11%
		Sub-Sahara Africa	Burkina Faso		no conflict	under 11%
			Burundi	over 10%	conflict + IDP	over 11%
			Chad	over 10%	no conflict	under 11%
			Ethiopia	over 10%	no conflict	over 11%
			Gambia	over 10%	no conflict	under 11%
			Guinea-Bissau	over 10%	conflict + IDP	under 11%
			Liberia		conflict + IDP	under 11%
			Mauritania	under 10%	no conflict	under 11%
			Niger		no conflict	under 11%
			Senegal	over 10%	no conflict	under 11%
			Sierra Leone	over 10%	conflict + IDP	under 11%
			Somalia		conflict + IDP	
			Sudan	under 10%	conflict + IDP	under 11%
		Tanzania		no conflict	under 11%	
		Uganda	under 10%	conflict + IDP	under 11%	
	GWE	Asia and Pacific	Nepal	under 10%	no conflict	under 11%
			Pakistan	under 10%	no conflict	under 11%
Sub-Sahara Africa		Benin	under 10%	no conflict	under 11%	
		Guinea		no conflict	under 11%	
		Malawi	under 10%	no conflict	over 11%	
		Mali	over 10%	no conflict	under 11%	
intermediate access	non-GWE	Asia and Pacific	Bangladesh	over 10%	no conflict	under 11%
			Indonesia		no conflict	under 11%
			Papua New Guinea	under 10%	no conflict	under 11%
		North Africa and Middle East	Algeria		no conflict	under 11%
			Jordan	over 10%	no conflict	under 11%
		Latin America	Bolivia		no conflict	under 11%
			Haiti	over 10%	no conflict	under 11%
		Sub-Sahara Africa	Botswana		no conflict	over 11%
			Central African Repu	under 10%	no conflict	over 11%
			Congo, Democratic Re	over 10%	conflict + IDP	under 11%
			Cote d'Ivoire	over 10%	no conflict	over 11%
			Kenya	under 10%	no conflict	over 11%

Country Classification	GWE Countries	Geographical Region	INDICATORS	10% GNP/capita drop for two years	WAR	AIDS Prevalence
			Madagascar	over 10%	no conflict	under 11%
			Nigeria	over 10%	no conflict	under 11%
			Rwanda	over 10%	conflict + IDP	over 11%
			Togo	over 10%	no conflict	under 11%
			Zimbabwe	over 10%	no conflict	over 11%
	GWE	Asia and Pacific	India	under 10%	no conflict	under 11%
		North Africa and Middle East	Egypt		no conflict	under 11%
			Morocco	under 10%	no conflict	under 11%
		Latin America	Guatemala	under 10%	conflict + IDP	under 11%
		Sub-Saharan Africa	Ghana	over 10%	no conflict	under 11%
high access	non-GWE	Asia and Pacific	Malaysia		no conflict	under 11%
			Myanmar		no conflict	under 11%
			Sri Lanka		conflict + IDP	under 11%
			Thailand		no conflict	under 11%
		North Africa and Middle East	Israel	under 10%	no conflict	under 11%
			Tunisia		no conflict	under 11%
		Latin America	Dominican Republic	under 10%	no conflict	under 11%
			Ecuador	under 10%	no conflict	under 11%
			El Salvador	over 10%	conflict + IDP	under 11%
			Guyana	over 10%	no conflict	under 11%
			Honduras	under 10%	no conflict	under 11%
			Nicaragua	over 10%	conflict + IDP	under 11%
			Panama	over 10%	no conflict	under 11%
			Venezuela	under 10%	no conflict	under 11%
		Sub-Saharan Africa	Cameroon	over 10%	no conflict	under 11%
		Mauritius		no conflict	under 11%	
		Mozambique	over 10%	conflict + IDP	over 11%	
		Swaziland	under 10%	no conflict	over 11%	
		Zambia	over 10%	no conflict	over 11%	
	Europe	Portugal	under 10%	no conflict	under 11%	
	Turkey	under 10%	conflict + IDP	under 11%		
	GWE	Latin America	Peru	over 10%	conflict + IDP	under 11%
complete access	non-GWE	Asia and Pacific	Hong Kong	under 10%	no conflict	under 11%
			Korea, Republic of		no conflict	under 11%
			Philippines	over 10%	no conflict	under 11%
			Singapore	under 10%	no conflict	under 11%
			Viet Nam		no conflict	under 11%
		North Africa and Middle East	Cyprus		conflict + IDP	under 11%
	Latin America	Argentina	over 10%	no conflict	under 11%	

Country Classification	GWE Countries	Geographical Region	INDICATORS	10% GNP/capita drop for two years	WAR	AIDS Prevalence
			Belize	under 10%	no conflict	under 11%
			Brazil	over 10%	no conflict	under 11%
			Chile	over 10%	no conflict	under 11%
			Colombia	under 10%	conflict + IDP	under 11%
			Costa Rica	over 10%	no conflict	under 11%
			Jamaica	over 10%	no conflict	under 11%
			Mexico	over 10%	no conflict	under 11%
			Paraguay	over 10%	no conflict	under 11%
			Uruguay	over 10%	no conflict	under 11%
		Sub-Sahara Africa	Congo	over 10%	conflict + IDP	under 11%
			Lesotho	under 10%	no conflict	over 11%
			South Africa	under 10%	no conflict	over 11%
		Europe	Greece	over 10%	no conflict	under 11%
			Spain		no conflict	under 11%



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