EQUITY, EDUCATIONAL ACCESS AND LEARNING OUTCOMES

IN THE MIDDLE EAST AND NORTH AFRICA

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PREFACE

The countries of the Middle East and North Africa (MENA) have made significant progress towards the Millennium Development Goals (MDGs) and Education for All Goals since 2000, with investments that have substantially improved educational access for girls and boys in the region. However, a deeper dive into educational access, attainment and learning outcomes reveals large inequalities at the primary and lower secondary levels, many of which are related to household wealth, gender, location and parents' education.

There are still very large gaps in education attainment in MENA, with a difference of up to 10 years of schooling between the top 20 per cent of the most educated and the bottom 20 per cent of the least educated. A large percentage of children in the region are still unable to complete primary education, even in middle-income countries. Girls face many barriers to access in primary and lower secondary school in a number of low middle income countries. Children who are girls, poor, from rural areas and with uneducated parents are more likely to be educationally deprived in all countries. This also has implications for economic growth and for the lives of young people as they leave school and enter the labour market.

Countries in MENA perform low in mathematics and science assessments compared to other regions and to international benchmarks. Moreover, poor students are consistently much less likely to reach the minimum standards in almost all countries. Using the Trends in International Mathematics and Science Study (TIMSS) data from 2011, coupled with household surveys and census data, this study provides updated and new insight into educational inequality in the region and reveals staggering inequalities in learning.

Reducing education inequalities in MENA will not be easy, but the evidence on the nature and extent of inequalities identified in this report can catalyse the way forward. With sustained political will, better resource allocation, robust data and policy dialogues, we can close the gaps in the hardest to reach areas. The proposed recommendations can be used for further country-specific research, policy development and action.

With the commitment of countries to take bold and transformative steps to achieve socioeconomic progress through the Sustainable Development Goals, this study documents the unfinished business of the education MDGs and sets the baseline for the education Sustainable Development Goal. Let us therefore renew our promise and work together to ensure that all children everywhere in the region have equitable opportunities to quality and relevant education.

Peter Salama

UNICEF MENA Regional Director

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ACRONYMS

ANER	adjusted net enrolment rate
CSO	civil society organization
DHS	Demographic and Health Survey
ECE	early childhood education
EGMA	Early Grade Mathematics Assessment
EGRA	Early Grade Reading Assessment
EMIS	education management information system
GDP	gross domestic product
GNI	gross national income
GPI	gender parity index
GER	gross enrolment ratio
HDI	Human Development Index
ICT	information and communication technology
ILO	International Labour Organization
IPUMS	Integrated Public Use Microdata Series
ISCED	International Standard Classification of Education
MENA	Middle East and North Africa
MICS	Multiple Indicator Cluster Survey
OOSCI	Out-of-School Children Initiative
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
TIMSS	Trends in International Mathematics and Science Study
UAE	United Arab Emirates
UIS	UNESCO Institute of Statistics
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WIDE	World Inequality Database on Education
UNPD	United Nations Population Division

SUMMARY

This study examines inequalities in access, attainment and learning outcomes in the Middle East and North Africa (MENA) region, focusing on the primary and lower secondary levels and addressing three main research questions:

1. **How do children flow through education systems in MENA from preschool to high school, and how many complete schooling at different levels?**
2. **What are the characteristics of the children in MENA countries who continue to different levels of the school system, and how do these children compare with those who drop out at different levels and become out of school?**
3. **Which children are learning less, and how do they differ from those with higher levels of achievement?**

Using the the 2011 Trends in International Mathematics and Science Study (TIMSS) data, household data from the UNICEF Multi-Indicator Cluster Surveys (MICS) Rounds 3 and 4, United States Agency for International Development (USAID) Demographic and Health Surveys (DHS) Rounds 5 and 6, and the standardized census data by the Integrated Public Use Microdata Series (IPUMS) project, the analyses and findings presented supersede that of other regional MENA analyses from previous years. Notably, the 2011 TIMSS data has not yet been utilized for a region-wide analysis. Thus, this equity study not only updates previous insights into MENA educational inequalities, but it also serves as an extension of such knowledge. When combined with administrative, household and learning achievement data, readers will hopefully find that the analysis is both integrated and unique.

To maintain comparability across countries, the learning achievement data analysis has been limited to TIMSS, as it has the widest coverage across the region. This coverage allows for consistent comparisons to be made, which is not possible with other learning achievement assessments, which are noticeably less comprehensive.

The indicators related to enrolment, attainment and learning are examined for each country and disaggregated by age, gender, wealth, location and, in some cases, mother's education. The narrative draws on secondary literature to point towards possible explanations of the patterns of inequalities that recur across countries in the region. Overall, the findings represent a first step towards a detailed analysis of barriers in education.

Results indicate that MENA countries have very varied profiles of initial enrolment, progression of children through the education system, and drop out from the education system, with implications for the types and levels of inequality found in each country. The study divides the countries of the region into an illustrative typology with four groups based on each country's gross national income (GNI) per capita and Human Development Index (HDI). Countries within each group tend to face similar types of challenges.

Group 1: Djibouti, Sudan and Yemen – A large percentage of children, even at the primary level, continue to be out of school in these low-middle income countries. Patterns of unequal access and completion at the primary level are highly relevant for this group of countries. Only around 60 per cent of children reach the last grade of primary school. Sizeable gender gaps are also apparent in all three countries (with the largest gender gap in Yemen), in primary completion and transition towards lower secondary.

Group 2: Egypt, Iraq, Morocco, Palestine and Syria – High percentages of children access primary education at some point, even if they do so late. However, marginalized groups remain out of school at the primary level. A much larger percentage of children are not accessing or completing lower secondary education. In some cases, there are enrolment peaks that disrupt an even flow of students. These are at the fifth grade of primary education in Iraq and at the third grade of secondary education in both Iraq and Morocco. These peaks are likely to reflect patterns of repeating grades and dropping out from school that surround high-stakes examinations. In Iraq, the peaks are visible for boys but not for girls. It is important to note that the data used for Syria refers to 2011, therefore reflecting the situation before the current conflict began.

Group 3: Algeria, Iran, Jordan, Lebanon, Libya and Tunisia – Primary enrolment is nearly universal. A large percentage of students enter lower secondary education. However, some minorities remain out of school at the lower secondary level, either because they never enrolled or because they dropped out before completing the primary level. It should be noted that Libya is not included in our in-depth chapters because of its dearth of education data.

Group 4: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE) – This group comprises high-income countries. Enrolment in both primary and lower secondary is nearly universal. This group of countries faces issues with overage enrolment, particularly in Saudi Arabia, where around 10 per cent of children are affected. Near-universal enrolment does not mean all students are completing lower secondary education successfully or achieving minimum learning outcomes.

Other challenges affect countries across different groups. In pre-primary and early childhood, education access is low in countries for which data is available and depends heavily on socioeconomic status. In several countries, including Algeria, Djibouti, Iran, Lebanon, Morocco, Oman and Tunisia, there are bottlenecks associated with high-stakes selection processes and examinations. Children repeat and retake examinations, inflating numbers in the examination year; in some cases, children repeat the year prior to the examination in order to increase their chances of passing. Patterns of this kind are almost certainly associated with inequalities in the chances of progression for children from different social groups.

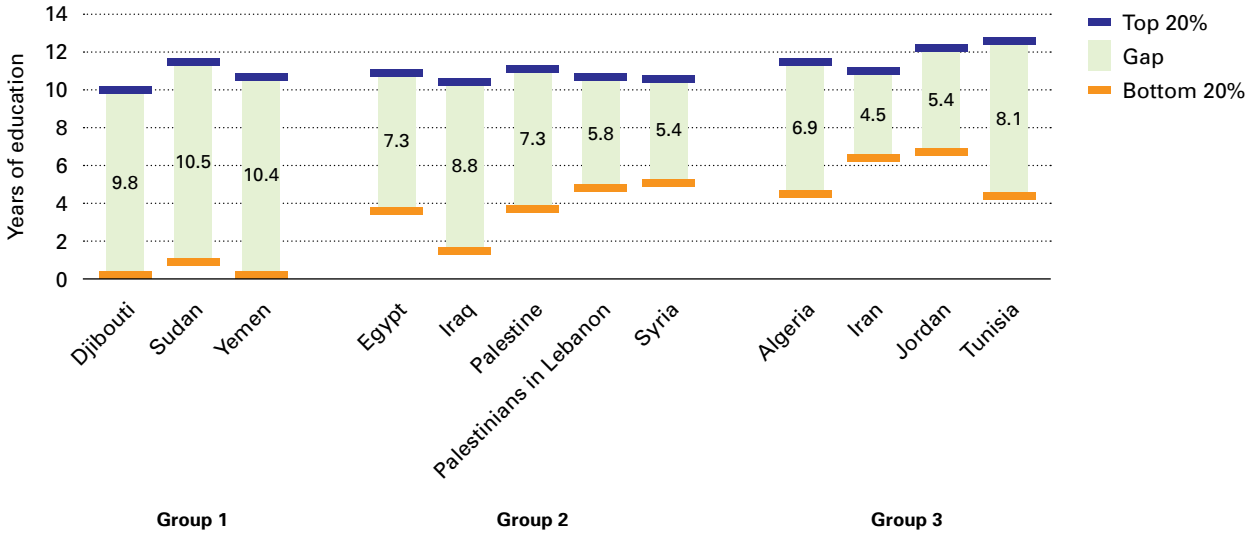
Key findings: Inequalities in enrolment, attainment and learning outcomes

This study reveals large inequalities in attendance and attainment that are related to household wealth, gender, location and parents' education in Algeria, Djibouti, Egypt, Iran, Iraq, Jordan, Palestine, Sudan, Syria, Tunisia, Yemen and for Palestinians residing in Lebanon. The analysis of household surveys and census data reveals very large gaps in education attainment between the top 20 per cent and bottom 20 per cent of 15 to 19-year-olds in several countries. The enrolment gap between the most disadvantaged group and the most advantaged is larger for countries with lower incomes and lower levels of net enrolment in the specific level of education (primary or secondary). Particularly in Djibouti, Sudan and Yemen, the bottom 20 per cent have, on average, close to zero years of education because most have never entered school, while the top 20 per cent have mostly completed secondary education, in line with other countries in the region.

In Djibouti, Egypt, Iraq, Palestine, Sudan and Yemen, more than 20 per cent of 15 to 19-year-olds have either left school with less than six years of education or have never entered school. Those who have left school are predominantly from poor rural backgrounds and have parents who also did not reach high levels of education. Children from poorer households have consistently worse access and attainment than richer children in the countries studied.

There are wide regional disparities in attainment by gender between countries. Although the region has progressed towards gender parity, girls continue to have much worse access to primary and lower secondary education than boys in Djibouti, Iraq, Morocco and Yemen. In Saudi Arabia, Sudan and Tunisia, there is near parity at the primary level, but girls' enrolment is substantially lower at the lower secondary level. It is also important to highlight that in a number of countries, girls do better in

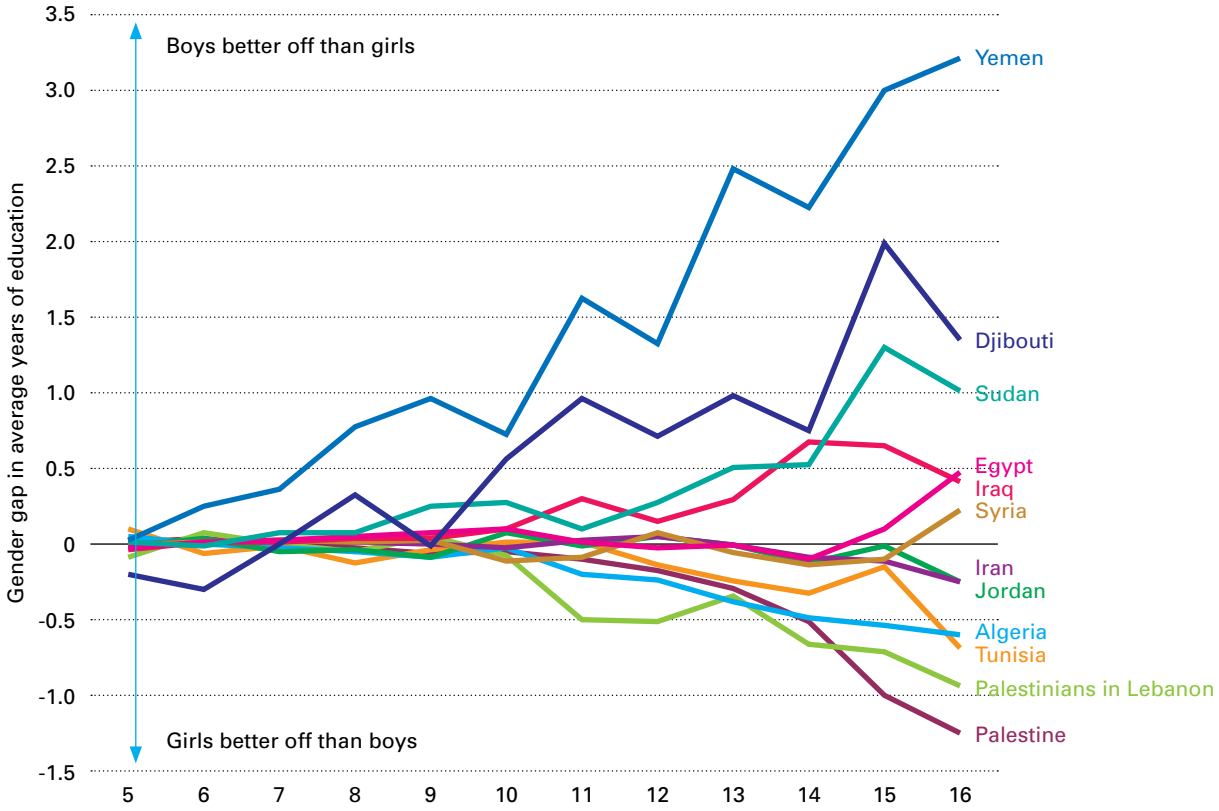
Gap between the top 20 per cent and bottom 20 per cent in terms of years of education, by country, 15-19-year-olds



Note: Cases are weighted in calculating the distribution so that 15-year-olds carry as much weight as 16-year-olds, 17-year-olds, etc., regardless of the population distribution.

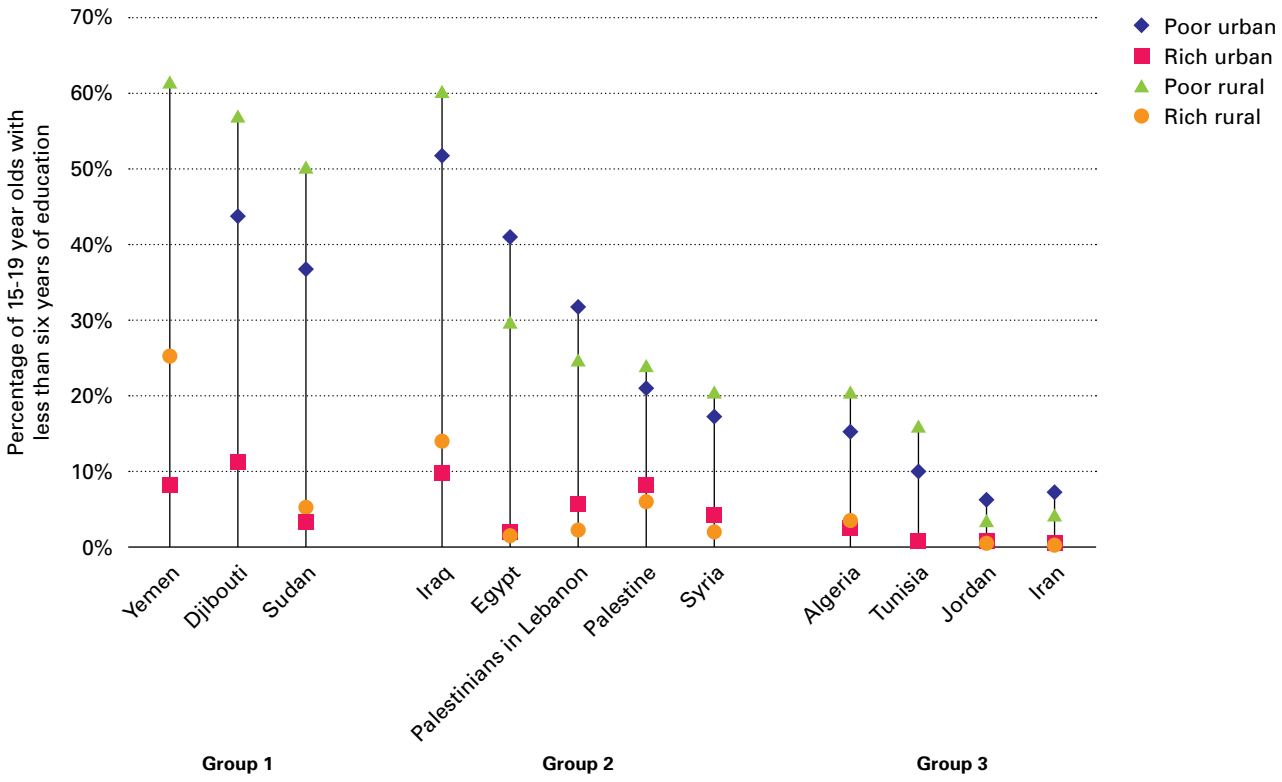
Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

Gender gap in average years of education, by age



Source: Algeria MICS 2012, Djibouti MICS 2006, Egypt DHS 2014, Iraq MICS 2011, Iran (census 2006) IPUMS database, Jordan DHS 2012, Palestinians in Lebanon MICS 2011, Palestine MICS 2010, Sudan Household Health Survey 2010, Syria MICS 2006, Tunisia MICS 2011-12, Yemen MICS 2006.

Proportion of 15-19-year-olds who are not in school and have completed less than six years of education, by wealth and location



Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran census 2006, IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

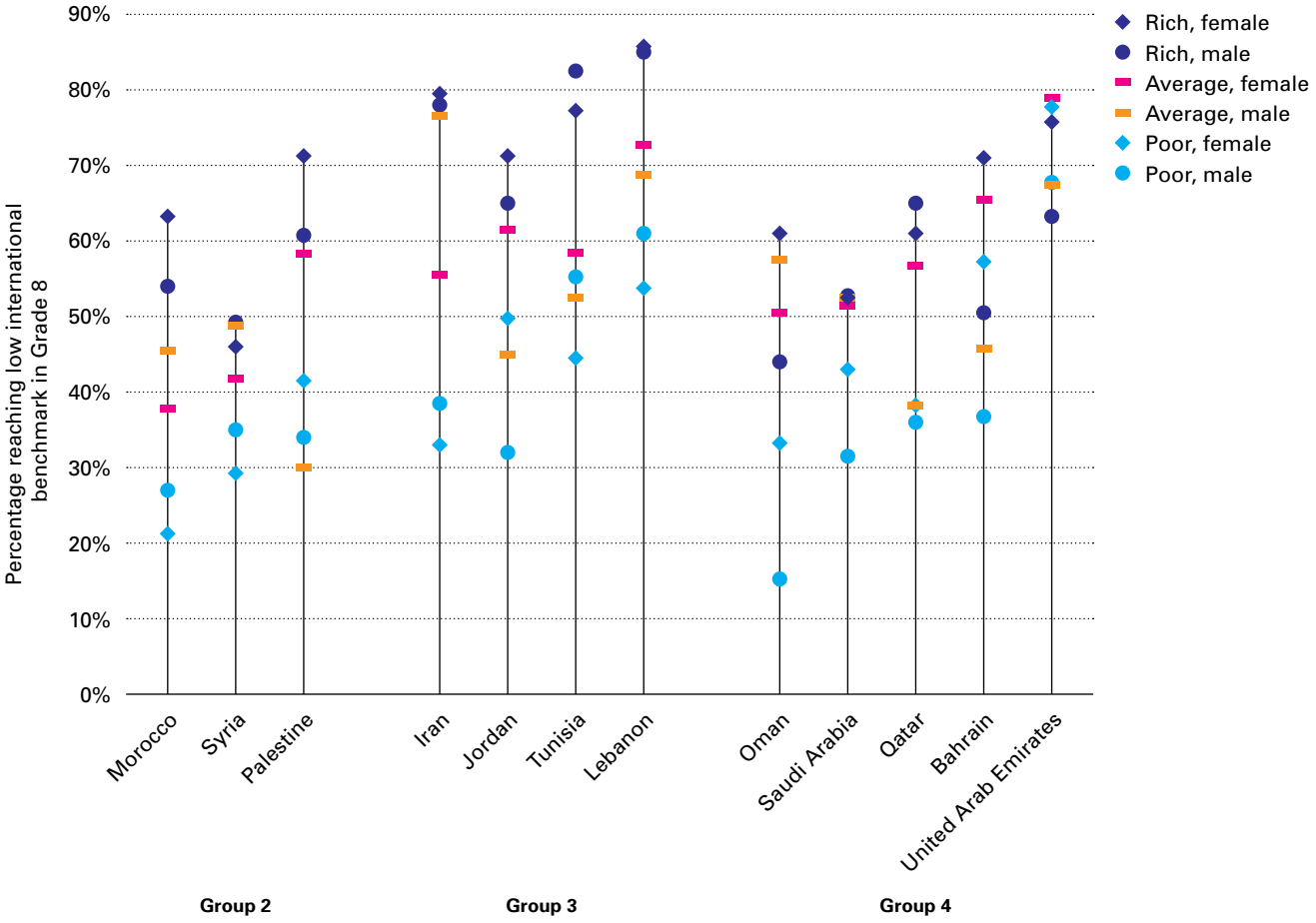
school than boys as they progress through the education system. Gender gaps are also narrower in the multivariate, cumulative analysis.

Overall, children from rural areas are more likely to be educationally deprived than those from urban areas. This difference is greater in countries in Group 1 and Group 2. The disadvantage in rural areas is sometimes related to poverty, although in a number of countries, young adults in rural areas have completed fewer years of schooling than their urban counterparts regardless of being rich (top 20 per cent of income) or poor (bottom 20 per cent of income). In Egypt, 40 per cent of young people from poor urban households leave school with less than six years of education. The general disadvantage of rural dwellers should not be confused with proportions of magnitude. In Egypt, Iran and Jordan, the students with lowest attainment are predominantly urban, in part because a large percentage of the population in these countries is urban. In Djibouti, Sudan and Yemen, the students with the lowest attainment are mainly rural.

Moreover, the analysis suggests that mother's education is a key predictor of children's school attendance, especially when the children are of lower secondary age. Among the factors associated with exclusion, mother's education is usually the single largest factor in the chances of children being out of school between the most disadvantaged group and the most advantaged group. The relevance of mother's education may be explained by its link to other non-observable variables, such as the importance given to education, social context and the capacity to access better schools. The large gap between students from different social backgrounds (as measured by mother's education) highlights the importance of social policy in overcoming existing background barriers. The findings also reveal the intergenerational role of education.

The TIMSS 2011 data for Bahrain, Iran, Jordan, Lebanon, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Syria, Tunisia and the United Arab Emirates confirm the findings of other reports in the literature: Regional performance in mathematics and science assessments are low

Per cent of children reaching low international benchmark (400) in mathematics in Grade 8, by gender and household wealth quintile



Note: The variable used is a wealth index based on household assets, constructed as an alternate measure of socioeconomic status
Source: TIMSS 2011

when MENA is compared to other regions and against international benchmarks.

The level of learning achievement does not relate closely to the level of access by country. In mathematics, high-enrolment countries such as Oman and Saudi Arabia (Group 4 countries) have particularly low test scores, while the United Arab Emirates (Group 4) and Lebanon (Group 3) have the highest scores. Because learning assessments exclude children who are not in school, the children who remain in school in low-enrolment countries are likely to be among the highest achievers. This partially explains why, within the region, there is little apparent relationship between national income levels and learning outcomes, with little variation across the groups in science achievement scores.

Moreover, each country exhibits large inequalities in learning outcomes, as evidenced by the differences in outcomes according to gender, school characteristics, income, location (rural/urban and by governorate) and household characteristics. In six of the 12 countries, there are 'reverse' gender gaps where girls have better learning outcomes than boys. Students from richer households are more likely to be above the international benchmark in every country. The top wealth quintile in several countries in the MENA region has students scoring close to the advanced international benchmarks for mathematics and science, while no country in the MENA region has students from the bottom 20 per cent of income reach even the low benchmark. Moreover, inequality in learning outcomes appears to have increased between 2007 and 2011, with the top 20 per cent improving slightly while the bottom 20 per cent stagnated or worsened.

Policy responses to education inequalities in the MENA region

Countries in MENA have a long way to go to reduce educational inequality, especially those in which metrics have shown an increase of inequality over the past few years. Overall, the region faces challenges in bridging wide gaps in both level of access to education and the level of learning. The recent emphasis in some international forums on educational quality and skills should not overshadow the fact that many children are still unable to complete a basic education, even in the middle-income countries in MENA.

Attention should also be paid to education and its relation to the labour market. Indeed, there are numerous concerns within MENA on this topic. Individuals with high education are unemployed and concerns have been raised about the mismatch of skills between job seekers and employment opportunities. Moreover, many children in the region leave school with too few years of schooling to qualify for anything but low-paying work in agriculture or the urban informal sector.

Specific insights into the nature of education inequalities across countries in the region are contained in the chapters, with additional intra-country insights where the data appear robust. Strategic conclusions are presented that frame recommendations for the way forward. These are complemented by a list of policy options that can be used in conjunction with national reviews of inequalities, prioritization of goals and targets, and realistic appraisals of political commitments to design interventions and allocate resources to reduce inequalities in education. The diversity of the region means that different countries face different challenges in terms of equity. Again, the analyses presented should be interpreted as a first step in understanding the nature of these challenges. Country-specific research, policy and actions should follow.

1 INTRODUCTION

Educational inequality disadvantages young people's prospects in life, signifies an unfair and inefficient distribution of resources, reproduces societal inequities, jeopardizes economic development, and is a potential source of political instability. Inequality is not compatible with national and international development goals, as these are committed to the fundamental right to education and equal opportunities.

A number of countries in the Middle East and North Africa (MENA) region[1] have not yet achieved universal primary education, though all have committed themselves to reach this target by 2015 as part of the Millennium Development Goals and Education for All Goals.

There has been significant progress towards these goals since 2000, especially in the middle-income countries in MENA. However, universal access and completion of a full cycle of nine years of basic education will not be a reality across MENA until inequalities in access and participation are substantially reduced. Commitments to education for all should mean that differences in participation between children from households with different levels of wealth should be reduced. Goals for gender equality, defined in terms of parity in educational access for boys and girls, will not be met in countries where girls continue to enrol at a lower rate than boys, or where girls drop out while

[1] The MENA region, as defined by UNICEF, consists of 20 countries: Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Palestine, Sudan, Syria, Tunisia, the United Arab Emirates and Yemen.

boys are still enrolled. Across the region, some communities remain socially excluded due to language, wealth or location, and thus have much lower numbers of years of completed schooling than other communities.

The case for equity in the access and quality of education is not only an ethical issue; equity in education is also linked to economic growth. The role of education on economic growth has been well studied and well accepted. Recent estimates analysing global datasets place the economic return of increasing the average years of education between 13 to 18 per cent increase in gross domestic product (GDP) per capita for every additional year (Crespo, Cuaresma, Lutz and Sanderson, 2012; Thomas and Burnett, 2013). Countries with different levels of income can benefit most from focusing on increasing the enrolment rate at different stages of the education attainment. According to UNICEF (2015), in low-income countries, GDP growth is associated with increased enrolment in primary education. For middle-income countries, enrolment in secondary education is found to have the strongest association with GDP growth. However, it is important to emphasize that the benefits of schooling ultimately come from the learning that takes place in the classroom, and low-quality schooling might do little to improve economic growth, as shown by Hanushek and Woessmann (2008).

While overall increases in the level of education are associated with higher rates of GDP growth, the consequences are not neutral to the distribution of education in the society. Castello and Domenech (2002) consider educational inequality directly using data across 108 countries between 1960 and 2000 to show that inequality in education, as measured by the Gini coefficient in the years of schooling, has a negative relationship with economic growth. Increasing equity in education is further associated with an increase in economic competiveness and productivity and higher levels of social cohesion (OECD, 2012). Inequality also has consequences at the micro-level, as it prevents vulnerable individuals from fulfilling their potential in education, and, consequently, in the labour market, depressing their income and leading to lower social mobility and higher rates of intergenerational poverty (UNICEF, 2015).

Educational attainment plays a central role in structuring the opportunities available to young people to enter employment and establish viable livelihoods (UNESCO, 2012). The combination of economic and educational inequalities, coupled with high youth unemployment, is potentially socially divisive. It may become the trigger for instability and protest, and lead to political upheaval (ILO, 2012a; Braun and Jones, 2013; UNESCO, 2011). A number of studies support a link between low average access to education and a higher likelihood of experiencing conflict (UNICEF, 2015), and between social and economic inequalities and greater probability of conflict (Stewart, 2010). While the evidence linking educational inequality and conflict is scarce (UNICEF, 2015), mainly due to the lack of data, where there is an increasing supply of school leavers and stagnating economic productivity, competition for jobs will favour the more educated. If quality and participation are skewed in favour of children from wealthy households, urban residents and members of socially privileged groups, an uneven distribution of the quality and quantity of educational attainment will be mirrored in the inter-generational transmission of poverty and other forms of exclusion.

Understanding which groups are disadvantaged, and locating the correlates of educational disadvantage and exclusion, is an essential first step in overcoming inequalities. This analysis can inform the design and development of policies and targeted interventions that address the needs of these groups. Few studies have systematically examined educational inequalities across the countries of the MENA region. Thomas et al. (2000) examined changes in educational inequality over time across 85 countries, using international schooling distribution data sets, including those of Barro and Lee (1997). Their descriptive analysis found that inequality fell in most of the countries for which data were available between 1960 and 1990. Gender inequality, as measured by the gender parity index (GPI) of enrolments using administrative data, is recorded by the UNESCO Institute for Statistics and widely reported (e.g., UNESCO, 2012). Howerer, other forms of inequality – such as by location or wealth – are not recorded in international compilations of administrative data.

Household survey data can also be used to measure inequalities invisible in administrative data. Among individual country studies, Assaad and Saleh (2013) examine the interaction between inequalities in parents' education, the supply of basic schools and children's educational disadvantage in Jordan, finding that, in fact, local availability of schools does increase intergenerational mobility in schooling. Online applications, such as UNESCO's World Inequality Database on Education (WIDE),[2] have also been developed using similar sets of household survey and census data to allow users to interactively explore inequalities.

However, "access to education", narrowly understood only in terms of enrolment, is no guarantee of worthwhile learning outcomes. (Lewin, 2007; UNICEF and UNESCO, 2013). Many students in the region fail to acquire the minimum secondary education qualifications moving away from subsistence sectors in middle-income countries, and in some countries, significant numbers do not graduate successfully from a full primary cycle of education.

More attention is being focused on the inequality of learning outcomes as enrolment rates increase. Altinok (2009) examines sources of marginalization in terms of learning outcomes using data from the TIMSS 2007, finding that there are strong determinants of performance, such as the number of books at home, parents' education, gender, language spoken at home and school location. Using TIMSS 2007 data, Bouhlila (2013) finds that school resources had an important effect on students' performance in pre-conflict Syria. In several other countries in MENA, the household's socioeconomic status and school resources contributed roughly equally to students' differences in performance. Across a number of countries, Altinok (2012) estimates the proportion of students who both survive to the end of primary education and attain a minimal level of learning shows that attainment of learning goals is uneven and inequitable.

Thus, to provide a more complete understanding of educational inequalities in MENA, the recent 2011 TIMSS data have been selected to supersede other achievement analyses of the region. These data have not yet been widely analysed across the MENA region. Household data from UNICEF MICS Rounds 3 and 4, USAID DHS Rounds 5 and 5, and standardized census data from the IPUMS project supplement the TIMSS analysis.

This study, therefore, updates and extends previous insights into educational inequality in the MENA region, and, at the same, time looks across administrative, household survey and learning achievement data in an integrated and unique way. To maintain comparability across countries, the data analysis of learning achievement is limited in scope to TIMSS, since it has the widest coverage across the region and allows for consistent comparisons to be made, which are not possible with other less comprehensive achievement data.

Three main research questions on inequalities in educational access and learning in MENA were explored:

Research Question 1

How do children flow through education systems in MENA from preschool to high school, and how many complete schooling at different levels? It is also important to know if the flows of school leavers are likely to exceed growth in new employment.

Research Question 2

What are the characteristics of the children in MENA countries who continue to different levels of the school system, and how do they compare with those who drop out at different levels and become out of school? This raises the issues of equity and educational equality within and between countries. "Inequality" and "inequity" will both be mentioned frequently in this report. Inequality refers to the differences in educational access and learning among individuals/countries, while inequity refers to the social outcome of unfair educational inequity, with the ethical presumption that more resources should be given to the disadvantaged to equalize their future opportunities.

Research Question 3

Which children are learning less, and how do they differ from those with higher levels of achievement? This will indicate the extent to which education systems in MENA are providing equality of opportunity.

[2] *World Inequality Database on Education*. EFA GMR. Available: http://www.education-inequalities.org/ [Accessed 6 March 2014]

Chapter 2 explains in more detail the data sources and analyses used in this study. Chapters 3, 4 and 5 address the study's three research questions in turn. These linked chapters build on the sequential logic of establishing flows and participation, identifying characteristics of those who progress and those who exit the school system, and exploring patterns of achievement and attainment.

Chapter 3 presents administrative data from UIS on enrolment rates, enrolment by grade, overage enrolment, repetition, completion and transition, by country and gender, to give an overview of inequalities between countries in terms of access to basic education.

Chapter 4 uses household survey and census data to analyse inequalities in educational access and grade attainment within each country. This chapter examines attendance, years of education, and completion of lower secondary school, disaggregated by child and household characteristics (such as gender, wealth, rural/urban location and parents' education). It also shows that as the disadvantages for children accumulate, the risk of being out of school increases.

Chapter 5 uses TIMSS data from 2007 and 2011 to explore inequalities in learning outcomes, disaggregating by gender, home resources for learning, mothers' education, whether children attended pre-primary school and whether the school is in a rural or urban location. The analysis finds that though there are inequalities in access in many MENA countries, the inequalities in learning outcomes are often greater.

Chapter 6 presents the key findings of the study. It elaborates on how inequalities in education are likely to be transformed into inequalities in the labour market and presents a detailed list of policy options to tackle the issue of education inequality.

2
DATA SOURCES AND ANALYSIS

The analyses draws from a variety of sources: administrative data, household surveys and censuses, and international assessment data. Within this chapter, we explain the nature of these data sets and explain the methodologies deployed.

2.1 ADMINISTRATIVE DATA

The administrative data used originate from UNESCO UIS, which derives data from a combination of education management information system (EMIS) data from each country and population estimates from the country or from the United Nations Department of Economic and Social Affairs (UNDESA) Population Division. In addition, in some cases, the study makes a direct comparison of the enrolment numbers with the UN population projections (UN, 2013).

Recent EMIS data (usually 2011)[3] are available from most countries. However, a number of limitations should be noted. Libya and Sudan generally lack data. For Sudan, enrolment data not yet published by UIS, but released directly by the Ministry of Education, have been used. At the lower secondary level, net enrolment rates are often not available, so gross enrolment rates have been presented instead; however, these do not always give an accurate representation of how many children in the relevant age groups are enrolled.

[3] The most recent data available at the time of writing have been used with attention to the need for using data from similar years whenever possible.

In Bahrain, Iraq, Morocco and the United Arab Emirates at the primary level, and in Bahrain, Iraq, Libya and the United Arab Emirates at the lower secondary level, net or gross enrolment rate data are more than five years old and, therefore, may not be an accurate reflection of the current situation. However, more recent data are often available on absolute enrolment numbers by grade, which can be compared to the population of the relevant ages *(see Chapter 3)*. For lower secondary education, the study relies on gross enrolment ratios (GERs) in the absence of net enrolment rate data; this is an imperfect indicator because it can be artificially boosted by large numbers of overage children. Net enrolment rates may also be distorted by overage children enrolled within the primary cycle age range.

Administrative data are used for the first level analysis of enrolments and trends over time, flows through the school system, and analysis of disparities by gender and age, relating to Research Question 1. The data available from UIS do not generally permit other forms of disaggregation, such as by location or wealth. For these types of analyses, the study turns to household survey, census and international assessment data (TIMSS).

2.2 HOUSEHOLD SURVEYS AND CENSUSES

In Chapter 4, to address Research Question 2 on the characteristics of children who continue to different levels of the school system, it is necessary to use data sets with more detailed individual-level indicators. This requires data from household surveys and censuses. The study uses the following data sets for more detailed analysis of different education indicators by wealth, location and region:

- Algeria MICS 2012
- Djibouti MICS 2006
- Egypt DHS 2014
- Iraq MICS 2011
- Iran census 2006, from the Integrated Public Use Microdata Series (IPUMS) database[4]
- Jordan DHS 2012
- Palestinians in Lebanon MICS 2011
- Palestine MICS 2010
- Sudan Household Health Survey 2010 (based on the MICS methodology)
- Syria MICS 2006
- Tunisia MICS 2011-12
- Yemen MICS 2006

The data sets listed above were chosen in lieu of other ones, as they are provided through official channels. Consequently, they have an ethical and legal soundness that makes them more reliable for reconciliation with information from MICS, DHS and IPUMS than other options. Some of the data sets are older than is desirable, but these are the latest that are available and readily comparable. Household surveys and censuses often touch on politically sensitive issues such as migration, refugees and populations of disputed territories, and this is one reason why there are often long delays before publication.

Access to primary data tends to be particularly limited in the MENA region (Bibi and El-Lahga, 2010), and variables such as ethnicity, religion and language that are available in many other countries are not recorded in most MENA countries. Even within the standardized data sets, there are often challenges in calculating comparable education indicators across countries. For instance, in MICS, educational levels are coded slightly differently from country to country, depending partly on the education system in each country. This diversity has been simplified by cross-referencing the coding of educational variables in the household survey data with UIS data on education system variables – age of entry to primary (International Standard Classification of Education (ISCED) level 1), length of primary, age of entry to lower secondary (ISCED level 2), length of lower secondary, and so on. In some cases, there is ambiguity about children's ages at the start of the relevant school year because surveys are conducted partway through the school year and the exact dates of birth are not recorded. Appendix C gives a brief explanation of how this is treated in the analysis.

[4] Minnesota Population Centre (2013). See https://international.ipums.org/international

2.3 LEARNING ASSESSMENTS

In order to understand inequalities in learning outcomes (Research Question 3), Chapter 5 draws on international learning assessment data. A number of international learning assessment exercises include data for the MENA region. These include TIMSS on mathematics and science; Early Grade Reading and Mathematics Assessments (EGRA and EGMA); Progress in International Reading Literacy Study (PIRLS);[5] and the Programme for International Student Assessment (PISA).[6] This study focuses on TIMSS data, which are more widely available in the MENA region than other learning evaluation studies *(see Appendix B)*. It mainly uses data from 2011, but also uses some of the data from 2007 to examine change over time.

Although TIMSS tests students at Grade 4 and Grade 8, this report focuses largely on the Grade 8 data, as these are available for more countries, and outcomes at Grade 8 provide the best indication of what learning outcomes can be expected for children finishing basic (primary plus lower secondary) education and is closer to the labour market than Grade 4. Data for Grade 8 are available from 2011 for Bahrain, Iran, Jordan, Lebanon, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Syria, Tunisia and the United Arab Emirates. For 2007, data for Grade 8 are available for Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Syria and Tunisia.

Some limitations of the data sets need to be noted when interpreting findings from analysis of the TIMSS data. The TIMSS data only cover children who are in school. The performance of out-of-school children on learning tasks is generally unknown, and the results of those who are enrolled should be considered alongside the proportion of the age group who take the tests to get an overall picture of education system performance. If children who face the greatest difficulty in school tend to drop out before Grade 8, then this will bias the average TIMSS results upwards, as the students who may have had lower scores are out of school by the time of this test. As the typology in Chapter 3 shows, several countries in the region continue to have problems with access to lower secondary education, and as Chapter 4 will argue, these problems are strongly structured by inequalities in wealth and location. This aspect of the TIMSS sampling has to be kept in mind when interpreting the results.

For all countries, in both 2007 and 2011, and both Grades 4 and 8, data are available in TIMSS on school and student background. In some cases, a questionnaire on home background also permits an analysis of student characteristics, such as the education resources they can draw on at home and whether they attended pre-primary before starting primary school.

2.4 ANALYSIS

The data are analysed using descriptive statistics and modes of visual presentation that allow indicators to be disaggregated for different groups (e.g., rural vs. urban or poor vs. rich) in a detailed but accessible way, drawing on the styles used for visualization in UNESCO's Education for All Global Monitoring Report and related online tools (UNESCO, 2010; 2012). The main indicators are:

- school attendance rates at age 6 to 10 and 11 to 15;
- number of years of education completed among 15 to 19 and 20 to 24-year-olds;
- proportion of 15 to 19-year-olds who have completed at least six years of education;
- proportion of 15 to 19 and 20 to 24-year-olds who have completed at least lower secondary education;
- average mathematics and science scores of Grade 8 students; and
- proportion of Grade 8 students who reach the low international benchmark in mathematics and science.

These are examined for each country and disaggregated by age, gender, wealth, location and, in some cases, mother's education. It is beyond the scope and extent of this study to provide detailed information about the general and specific educational context of all 20 countries in MENA. The narrative draws on secondary literature to point towards possible explanations of the patterns of inequalities that recur across countries in the region. However, these findings should not be interpreted as causal links, but as a first step to a detailed analysis of barriers in the education process. More insights can be found in the MENA Regional Report from the Out-of-School Children Initiative (OOSCI) and in the available country-level OOSCI reports.

[5] IEA (2011). See http://timss.bc.edu/index.html

[6] OECD (n.d.). See www.oecd.org/pisa

3

THE FLOW OF PUPILS THROUGH EDUCATION IN MENA COUNTRIES

The MENA region has made significant progress in education since the 1970s, despite the very low initial levels of enrolment. However, it has been argued that countries in the region have not experienced the full benefits of investments made (World Bank, 2008). Countries in the MENA region (UNESCO definition) have invested more in education than other countries at similar income levels – on average, around five per cent of GDP and 20 per cent of government budgets over the past 40 years. As a result, most countries were able to improve physical access to education rapidly. Most children now enrol over a full cycle of compulsory basic education, and substantial numbers continue beyond lower secondary in much of MENA.

Education spending relative to GDP continues to be higher than in Latin American and East Asian countries at comparable levels of income, and this is true at all levels of education. There has been rapid progress in participation at secondary level since the 1970s, when only around one in four children of secondary age were enrolled in secondary school in Egypt, Qatar and Syria, and in Algeria, it was only one in 10. Despite this progress and the relatively high spending in the region, the average level of educational attainment in the population is still lower in MENA than in comparable countries in East Asia or Latin America. This reflects the region's lower starting point in the 1960s and 1970s, as well as slower progress in the more recent past (World Bank, 2008).

There are large differences among countries in the region. Yemen, for example, has among the highest proportion of out-of-school children in the world (UNESCO, 2013). Overage enrolment is widespread; less than two-thirds of children in the Arab States[7] start school at the expected age, resulting in many students being overage at Grade 1 (UNESCO, 2011). Additionally, in many countries, educational achievement is compromised by high drop-out rates and pinch points at the transitions between (1) primary and lower secondary and (2) lower secondary and upper secondary levels of the education systems.

There is evidence that in some countries, high-stakes selection examinations have caused bottlenecks in the flow of students. Several MENA countries "continue to retain exit exams in basic education, permit very limited transferability of students between fields of knowledge, and offer very limited choices in post-compulsory education." (World Bank, 2008, p.189). This has been changing. For example, Djibouti, Morocco and Yemen have abolished exit examinations. However, it seems this has yet to have a substantial impact on increasing the transition to secondary education. The numbers flowing into lower secondary school are determined by a range of factors that include: the completion rate and success rates of promotion examinations, the age profile of those completing primary school successfully, and the willingness to finance secondary schools with public resources, allowing them to be fee free and accessible to lower-income households. These factors are also relevant to transitioning into upper secondary school, which is influenced by the opportunity costs and labour market conditions to a greater extent than the transition from primary to lower secondary. At both lower and upper secondary levels, inequalities can easily emerge among children from different socioeconomic backgrounds. This is exacerbated by the widespread use of paid private tutoring to help children pass high-stakes examinations.

A number of the countries in the region have reached, or are approaching, a peak in the size of the primary-age cohort of children. These include Algeria, Kuwait and Lebanon. If low growths in primary-age children is sustained, then there will be opportunities to increase educational expenditure per child in these countries within the same total budget commitment. In contrast, countries such as Djibouti, Iraq and the United Arab Emirates are projected to continue with secondary school-age population growth over the next 30 years. In these parts of MENA, there will be a substantial challenge to increase capacity in the school system to match the growth in the school-age population (World Bank, 2008).[8]

It is ideal to group the countries in the MENA region into four categories using a typology based on enrolment rates and the average level of learning outcomes, as measured by TIMSS. This can profile the diverse patterns of educational enrolment in MENA countries and signal some of the implications for educational inequality. However, due to data unavailability, it is challenging to develop an accurate education-specific typology. Instead, it is easier to follow the Human Development Index (HDI) that is based on economy, education and health. The first section of this chapter presents this typology. Sections 3.2 to 3.5 then explore the flow of children through the education system within each group of countries in order to map the inequalities that appear at different levels. In some countries, the key point of divergence is at the point where children enter primary school for the first time. In others, it occurs with repeating grades and dropping out, particularly in response to high-stakes examinations and insufficient spots available at higher levels of the public school system. There are also countries where physical access appears to be high all the way through to the secondary grades. In these cases, inequalities are more likely manifest in very different levels of learning outcomes, rather than enrolments. Chapter 4 then builds on this contextual orientation and provides a detailed analysis of inequalities within the MENA countries.

[7] As defined by UNESCO, the Arab States region comprises Malta, Mauritania, and all of the MENA countries except Iran. Iran has relatively strong educational indicators and accounts for roughly 20 per cent of the MENA population. Consequently, the population-weighted regional averages for the Arab States would tend to be somewhat worse than for MENA. Malta and Mauritania have smaller populations and so have little effect on regional averages. While the report focuses on the MENA countries, it also uses secondary sources only when containing information specific to the Arab States.

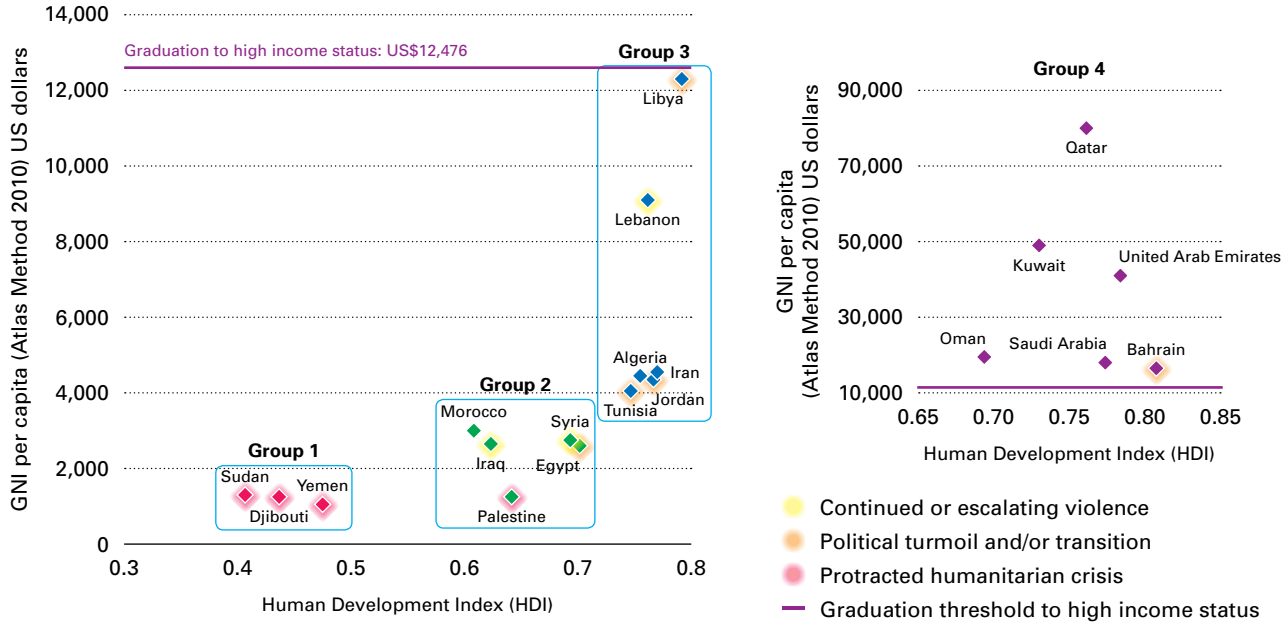
[8] It will also be necessary to manage the fluctuating demand for schooling from non-nationals in States where a large proportion of the population is expatriate.

3.1 A TYPOLOGY OF MENA COUNTRIES

Educational inequalities appear in different forms, including: different patterns of access to preschool and the first grade, uneven progress through primary and secondary school related to household characteristics, gender and location, and varying levels of achievement and attainment linked to social groups. The MENA region is very diverse in terms of income levels, patterns of economic activity, demography, geography and culture. In 2011, primary enrolment rates (measured as the adjusted net enrolment ratio) varied from 52 per cent in Djibouti to nearly 100 per cent in Iran and Tunisia.

Figure 3.1 presents a typology of the countries in the region according to their HDI. MENA countries can be grouped into four groups, and Table 3.1 offers corresponding indexes on education access and learning outcome.

Figure 3.1 Typology of MENA countries by gross national income and Human Development Index



Note: Non-income HDI value is used[9] (Value of the HDI computed from the life expectancy and education indicators only)

Djibouti, Sudan and Yemen belong to the first group. They are low-income countries suffering from protracted humanitarian crises. Their universal primary education remains a far-off goal, and lower secondary enrolments are lower still. The analysis for this group of countries focuses on access to school and attainment of at least six grades – widely regarded as a bare minimum for achieving worthwhile learning outcomes.

The second group consists of Egypt, Iraq, Morocco, Palestine and pre-conflict Syria, where the levels of economy, education and health are better than for the first group but remain relatively low. This group has relatively high education access, but a substantial minority remain excluded. It should be noted that the data used by this report do not reflect the ongoing humanitarian crises caused by armed conflicts in Iraq and Syria.

[9] Rodriguez, 2009 and Zavaleta, 2010, have highlighted that using the non-income component of the HDI might be useful for analysing progress in education and health, independently of, for example, falling income.

Algeria, Iran, Jordan, Lebanon, Libya and Tunisia belong to the third group. This group has better education access and learning outcomes, but efforts are needed to reach universal access. In addition, the extremely high lower-secondary GERs in Algeria and Tunisia implies serious repetition, which serves as sign of low learning quality.

Finally, the fourth group consists of the six Gulf Cooperation Council countries with near universal primary and lower secondary enrolment. For these countries, the main locus of inequality is uneven learning outcomes, since almost all children are in school. Only about half of the students in Grade 8 are reaching the low international benchmark in mathematics, which is set at a level of basic knowledge, very limited ability to apply knowledge and very limited ability to use thinking skills. It is, therefore, important to examine what inequalities in learning lie behind these low levels of achievement and understand the social, economic and political factors that are associated with underperformance, which itself is linked to subsequent dropping out of school.

Table 3.1 Educational status of MENA countries by group

Group	Country	Primary ANER (%)[10]	Lower secondary GER (%)[11]	Learning outcomes – % who achieve low mathematics benchmark[12]
1	Djibouti	52	44	n/a
	Sudan	60	54	n/a
	Yemen	76	56	n/a
2	Egypt	99	94	n/a
	Iraq	89	65	n/a
	Morocco	88	82	36
	Palestine	90	87	52
	Syria	100	92	43
3	Algeria	98	133	n/a
	Iran	100	102	55
	Jordan	91	94	n/a
	Lebanon	97	90	73
	Libya	n/a	n/a	n/a
	Tunisia	99	117	61
4	Bahrain	99	103	53
	Kuwait	98	110	n/a
	Oman	98	107	39
	Qatar	95	99	54
	Saudi Arabia	97	104	47
	United Arab Emirates	96	96	73

Source: Enrolment data from UIS; learning outcomes from TIMSS 2011; income group data from World Bank (2013); n/a = not available. Insufficient data were available for Libya.

[10] Primary ANER data are from 2011, except: Bahrain (2006), Egypt (2010), Iraq (2007), Jordan (2010), Kuwait (2008), Morocco (2005) and the United Arab Emirates (2006).

[11] Gross enrolment ratios are used because net enrolment rates were not available for every country. Note that due to overage enrolment, the GER can exceed 100 per cent without necessarily entailing that the country has reached full enrolment among the appropriate age group. Data are from 2011, except: Algeria (2009), Bahrain (2006), Egypt (2010), Iraq (2007), Jordan (2010), Kuwait (2008), Saudi Arabia (2009), Sudan (2009) and the United Arab Emirates (2006).

[12] Learning outcomes are measured by the percentage of Grade 8 students who achieve the low international benchmark in mathematics (see Chapter 5 for more information) in TIMSS 2011.

There are recognized uncertainties in the administrative data used for describing education development in these counties. Schools may have incentives to overstate enrolment, and children may enrol but fail to attend regularly. Table 3.2 presents comparable statistics using household survey and census data (instead of administrative data for enrolment rates). There are some discrepancies which may be partly explained by

i. differences in the year of the data;

ii. the difference between attendance and enrolment (usually more children are enrolled than regularly attending); and

iii. imprecision about children's ages in both types of data source.

For Djibouti, MICS results suggest much higher attendance in primary school than would be suggested by the administrative data because irregular attendance was still treated as attendance. By contrast, in Iran, the census data suggest there may be a problem with out-of-school children at both primary and lower secondary levels that is not visible at all in the administrative data.[13]

The following sections provide a more detailed picture of the flow of children through school systems in each of the four groups in this typology. In each case, enrolments by grade are compared to the United Nations' projections of the population of boys and girls at the corresponding grade *(see Figures 3.2 to 3.6)*. Although, there is likely to be some inaccuracy in population estimates for countries that have not had censuses for some time; this nevertheless provides an approximate reference point for understanding what proportion of boys and girls in the population are enrolled.

Table 3.2 Attendance rates based on household survey and census data

Country	Year	Primary ANER (%)			Lower secondary gross attendance rate (%)		
		Male	Female	Total	Male	Female	Total
Algeria	2012	97.8	97.8	97.8	124.8	117.9	121.4
Djibouti	2006	82.5	79.9	81.2	77.6	62.8	70.0
Egypt	2008	96.2	94.8	95.5	96.5	93.4	95.0
Iran	2006	88.9	87.9	88.4	67.5	62.0	64.8
Iraq	2011	93.2	87.2	90.3	91.5	69.4	80.9
Jordan	2012	98.0	98.1	98.0	93.0	94.5	93.7
Palestinians in Lebanon	2011	95.6	97.3	96.4	80.4	93.1	86.5
Palestine	2010	93.5	92.7	93.1	98.4	101.5	99.9
Sudan	2010	75.6	70.4	73.1	80.3	65.2	72.4
Syria	2006	96.6	96.4	96.5	86.4	83.0	84.7
Tunisia	2011	98.5	98.1	98.3	109.1	107.7	108.4
Yemen	2006	76.3	64.8	70.6	76.4	39.6	58.0

Source: Algeria MICS 2012, Djibouti MICS 2006, Egypt DHS 2014, Iraq MICS 2011, Iran (census 2006) IPUMS database, Jordan DHS 2012, Palestinians in Lebanon MICS 2011, Palestine MICS 2010, Sudan Household Health Survey 2010, Syria MICS 2006, Tunisia MICS 2011-12, Yemen MICS 2006.

[13] This cannot be explained by the age of the census data, which come from 2006; even in 2006, administrative data were showing close to full enrolment at primary and lower secondary levels. It is possible that there was confusion in how attendance of six-year-olds was recorded, which would affect primary attendance but cannot explain the low lower secondary attendance in the census data.

3.2 GROUP 1: DJIBOUTI, SUDAN AND YEMEN

In Djibouti and Sudan *(see Figure 3.2)*, enrolments, even in the Grade 1 of primary education, are well below the total numbers of children who are of the official primary school entrance age. Yemen appears to have high enrolment in Grade 1, but many of the children enrolled are overage; for primary education as a whole, 14 per cent of students are overage *(see Appendix A, Table A.4)*. In all three countries, there are high rates of dropping out over the course of the grades, compounded in Djibouti by peaks which are characterized by high percentages of repetition (as children try to pass high-stakes examinations). As will be seen in the following sections, these bottlenecks in the education system – grades where access becomes much more constrained than in earlier grades – are key points at which inequalities emerge and are exacerbated. The number of children in lower secondary school is only half of the size of the relevant population group. It is also important to note that in Sudan and Yemen, the population is growing with many more six-year-olds than eight-year-olds or 10-year-olds. This means that school systems will have to expand rapidly to keep up with population growth, and employment may not grow fast enough to absorb all the new school leavers.

Inequalities can be seen in primary completion rates for this group: Only around 60 per cent of children reach the last grade of primary school *(see Appendix A, Table A.1)*. Of the girls in Djibouti who do reach the end of primary school, some 20 per cent drop out before making the transition to lower secondary *(see Appendix A, Table A.3)*. Sizeable gender gaps are apparent in all three countries, but most of all in Yemen. In the first grade of primary school in Yemen, 70,000 more boys than girls are enrolled; by Grade 1 of lower secondary, the gender gap grows to 85,000, and 60 per cent of pupils are boys. Although there are also slightly more boys than girls in the population in Yemen, this difference is dwarfed by the gender gap in numbers of children enrolled in school.

3.3 GROUP 2: EGYPT, IRAQ, MOROCCO, PALESTINE AND SYRIA

Group 2 has two sub-groups that are revealed by data on age and grade:

i. Iraq and Morocco; and

ii. Egypt, Palestine and Syria.

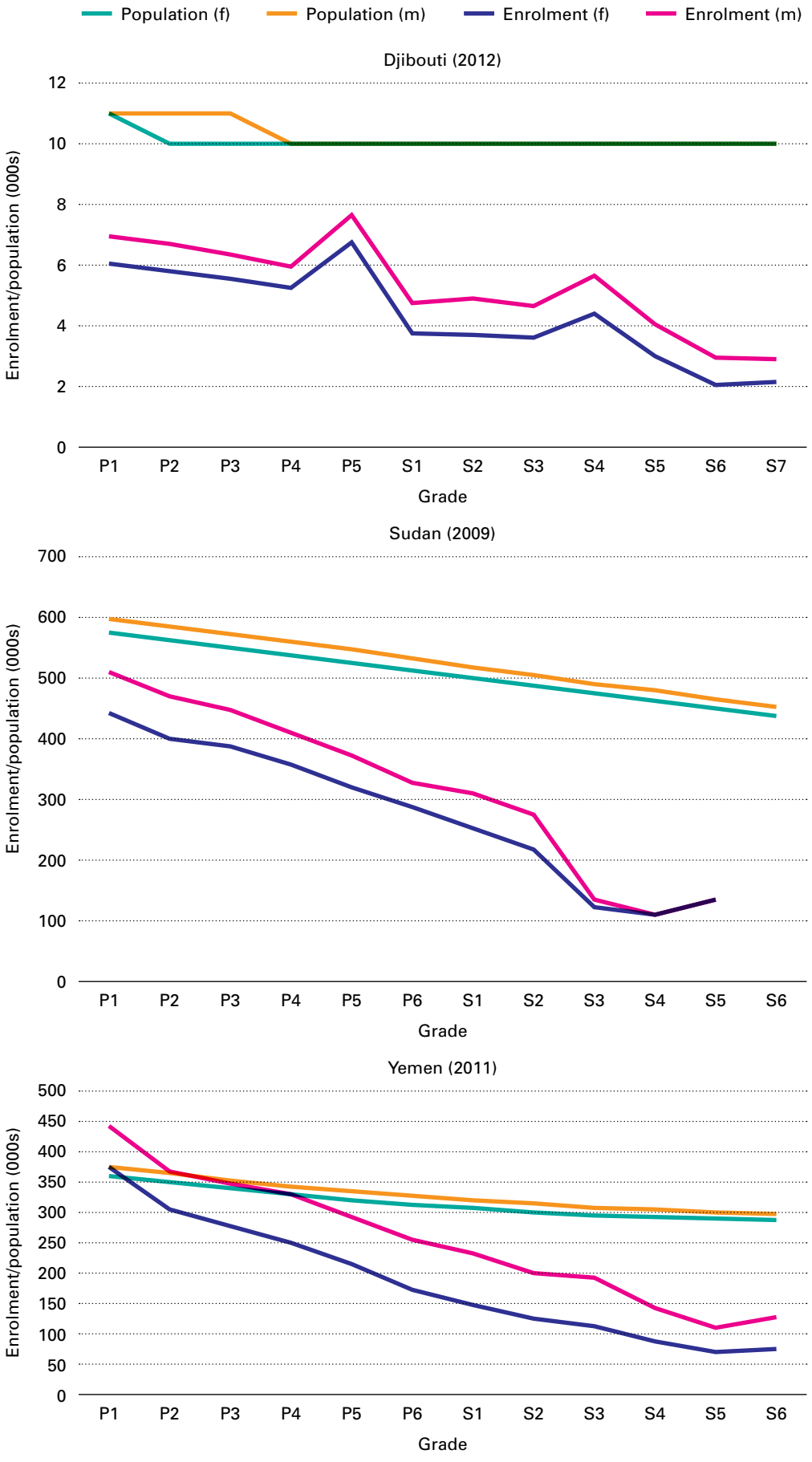
In Iraq and Morocco, the charts suggest that high primary enrolment rates are hiding problems with students dropping out, large gender gaps and overage enrolment *(see Figure 3.3)*. Almost one in five primary students in Morocco and almost one in seven in Iraq are overage *(see Appendix A, Table A4)*. In Iraq, primary enrolment rates appear quite high, but only around 65 per cent of students are completing primary grades *(see Appendix A, Table A.2)*. The net enrolment ratios for secondary education as a whole (lower and upper secondary) were only 44 per cent in Iraq and 35 per cent in Morocco in the last years for which data are available (2007 and 2003, respectively).

In this sub-group of Iraq and Morocco, there are two distinct forms of inequalities: (1) there is a marginalized minority who never go to school and (2) there are much larger numbers who enter school but whose education is curtailed before they reach the higher grades. In some cases, there are enrolment peaks that disrupt an even flow of students. This peak is Grade 5 in primary in Iraq and at Grade 9 in secondary in both Iraq and Morocco. These peaks are likely to reflect patterns of repeating grades and dropping out that surround high-stakes examinations.

Typically in such cases, children either repeat the grade before the high-stakes examination in order to increase their chances of passing, or they are forced to repeat when they fail. Patterns of this kind are often associated with inequalities in the chances of progression for children from different social groups. Poorer households, for example, may not be able to offer the same level of parental support or private tuition as richer ones. As a result, poorer children are likely to take much longer to complete the same level of education or fail to complete at all.

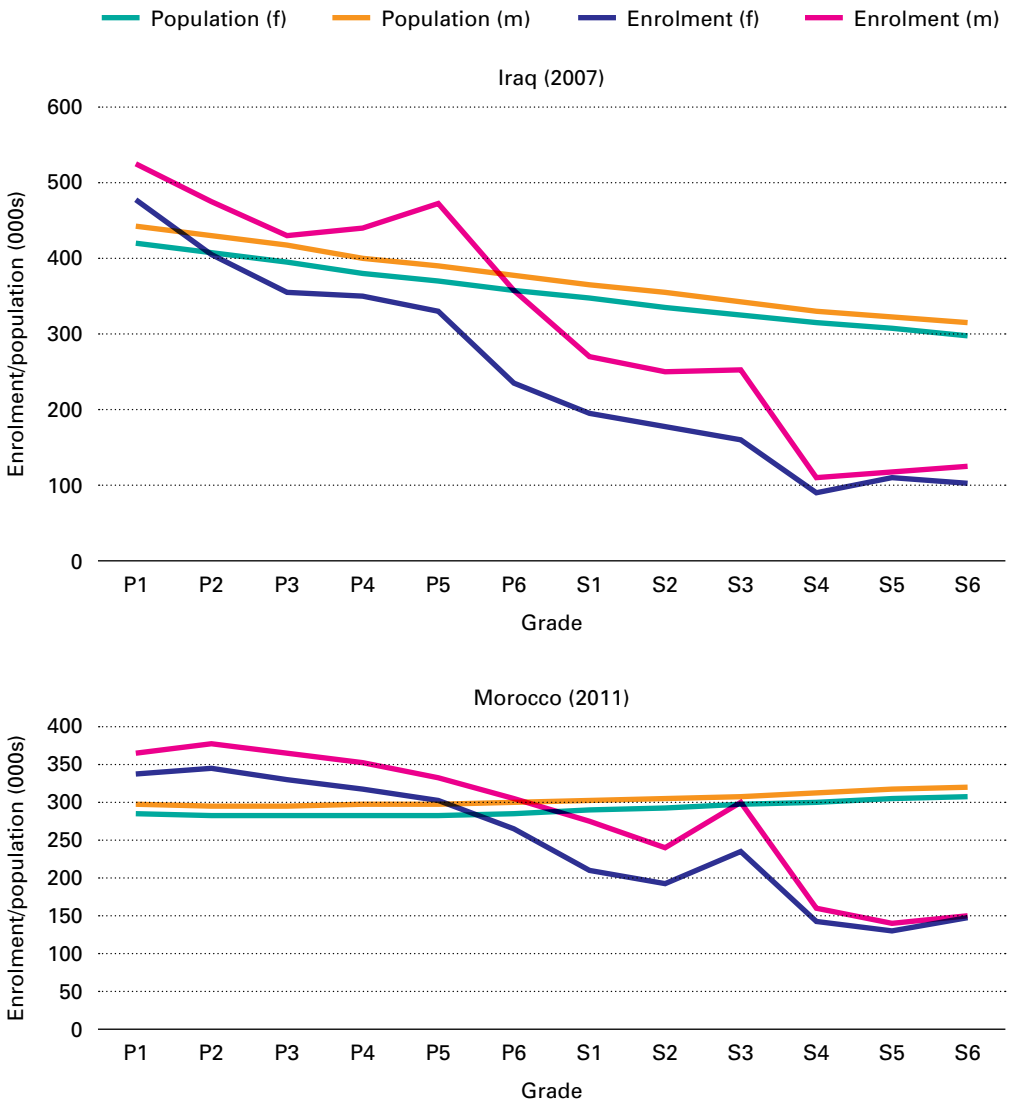
In Iraq, the peaks are visible for boys but not for girls. There appears to be a stronger tendency for girls to drop out at higher grades, which is slowed, but not offset, completely by the tendency to repeat years at the end of the primary and lower secondary cycles.

Figure 3.2 Population and enrolment by grade, Group 1 countries



Source: UIS (n.d.); UN-DESA (2011)

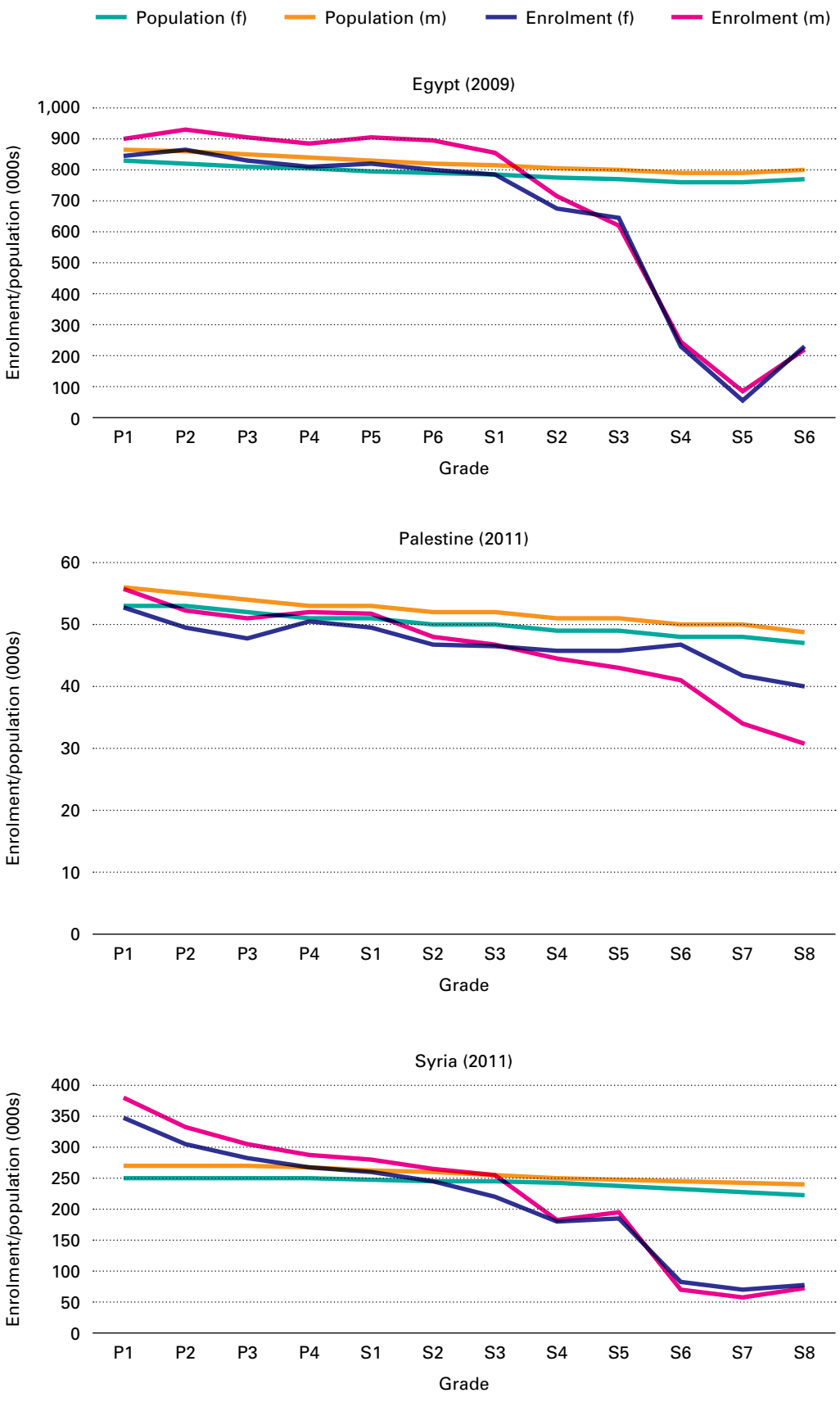
Figure 3.3 Population and enrolment by grade for Group 2 countries: Iraq and Morocco



Source: UIS (n.d.); UN-DESA (2011)

The Group 2 sub-group of Egypt, Palestine and Syria has smaller gender gaps and larger enrolment rates at the primary level, but a significant minority remains out of school at the secondary level *(see Figure 3.4)*. The enrolment charts reveal a large number of children dropping out in Egypt and in pre-conflict Syria around the final grades of lower secondary. Additional children drop out at the upper secondary grades. Syria has a large proportion of overage students at eight per cent *(see Appendix A, Table A.4)*. This situation has deteriorated severely since the outbreak of civil war. Overage enrolment is generally associated with lower levels of achievement and higher probabilities of dropping out than on-age progression through the grades. Education systems with high rates of access and completion do not, in general, have a wide age range in each grade. It is important to note that for Iraq and Syria, the survey and assessment data used in this study are pre-2012. Therefore, the analysis examines their situations before the ongoing conflicts. This is particularly relevant in Syria, where often, this study highlights the findings as pre-conflict Syria.

Figure 3.4 Population and enrolment by grade for Group 2 countries: Egypt, Palestine and Syria



Source: UIS (n.d.); UN-DESA (2011)

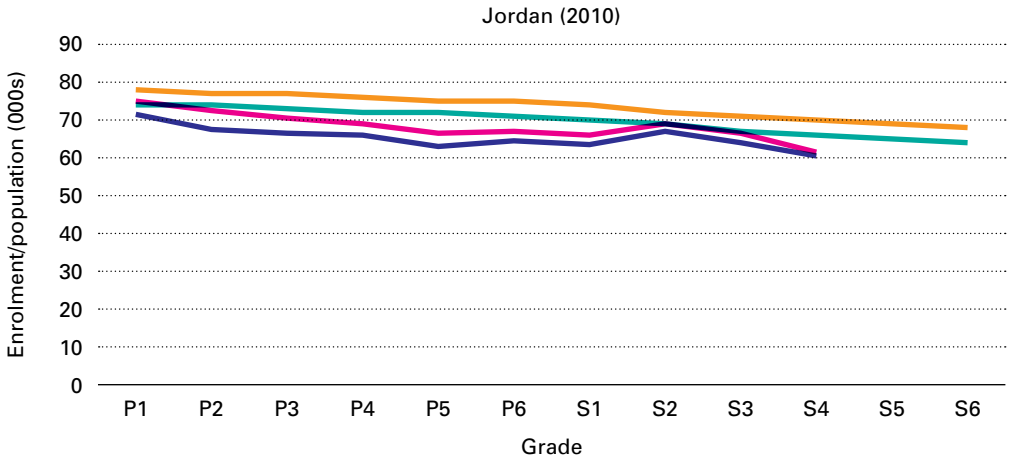
3.4 GROUP 3: ALGERIA, IRAN, JORDAN, LEBANON AND TUNISIA[14]

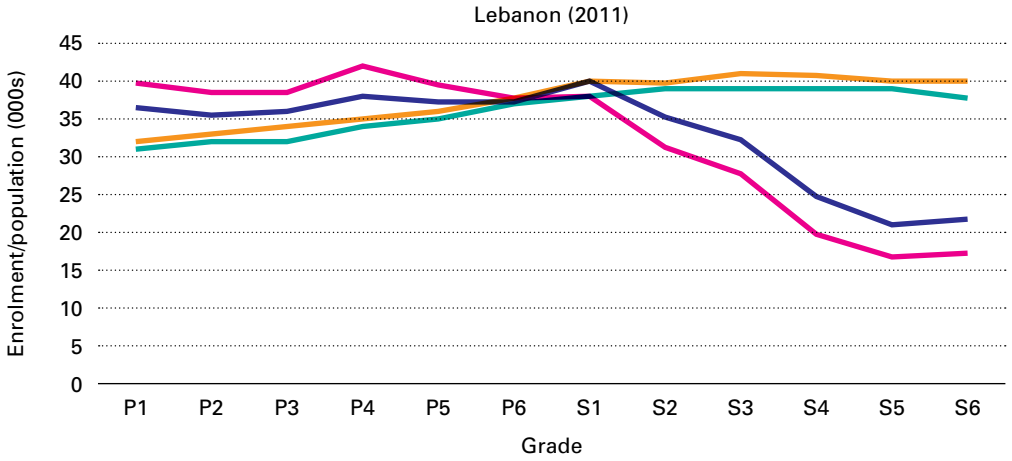
Group 3 countries have near universal enrolment at the primary level *(see Figure 3.5)*. Jordan's enrolment falls roughly in line with the population for the respective age groups, but a small number clearly remain out of school at each age. For Lebanon, the enrolment chart reveals a large number of children dropping out at lower secondary and additional children dropping out at the upper secondary grades, especially boys. Dropping out of education could be a result of students' entry into the labour market as well as the diversification of schooling tracks.

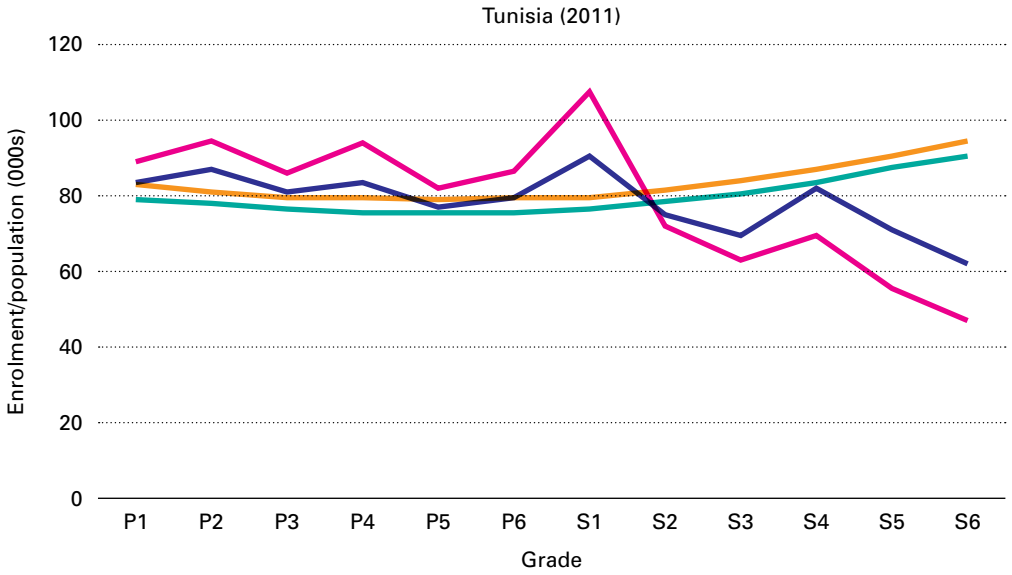
In Algeria, Iran and Tunisia, the charts suggest 'bottlenecks' towards the end of lower secondary education, when children appear to be repeating grades to increase their chances of passing examinations. Characteristically, enrolments in grades where there are high-stakes public examinations are greater than in the preceding grade. High-stakes examinations, in turn, often function to ration access to a limited number of places in upper secondary schools. This level of the education system continues to be funded and organized in ways that make it inaccessible to many.

Figure 3.5 Population and enrolment by grade for Group 3 countries

[14] Libya also belongs to Group 3, but it is excluded from data-driven sections of this report due to the dearth of education data. There was a Nationwide School Assessment, published by the Libyan MOE in 2012, highlighting the damage caused by the revolution. This is the most reliable statistical source during the writing of this study, though it is not focused on equity.







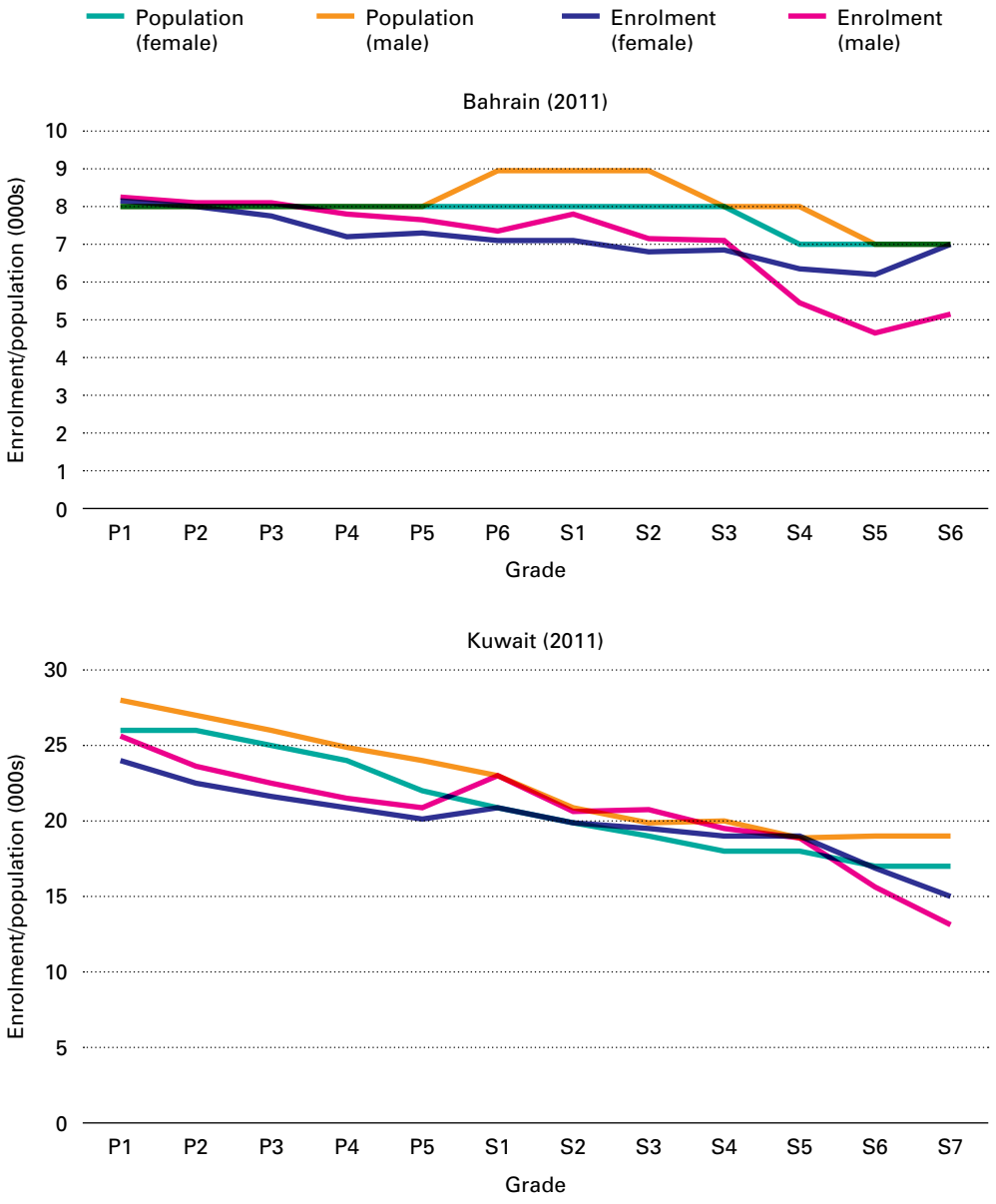
Source: UIS (n.d.); UN-DESA (2011)

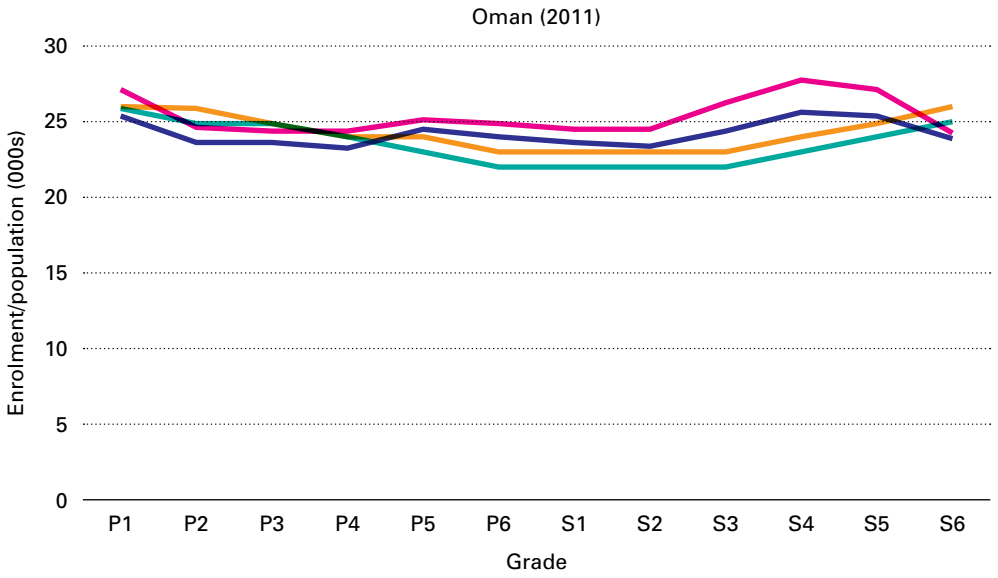
3.5 GROUP 4: BAHRAIN, KUWAIT, OMAN, QATAR, SAUDI ARABIA AND THE UNITED ARAB EMIRATES

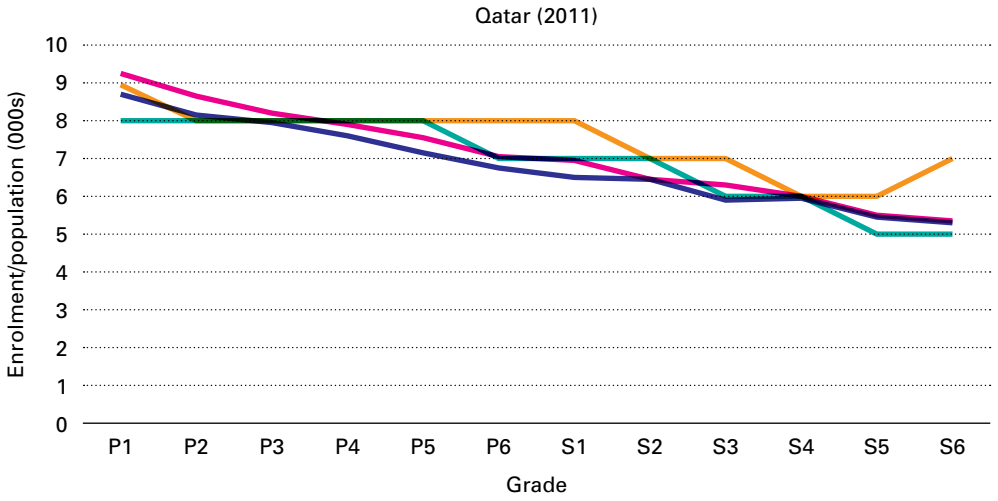
In this final group *(see Figure 3.3)*, with the exception of the United Arab Emirates, nearly 100 per cent of students both enrol in and complete primary school, and all but a small percentage enrol in lower secondary school. Inequalities in these countries remain in the quality of education received and levels of achievement realized. In Group 4, there remain small, but consistent, gender gaps in enrolment in both primary and lower secondary school. There are also issues with overage enrolment, particularly in Saudi Arabia, where around 10 per cent of children are affected *(see Appendix A, Table A.4)*.

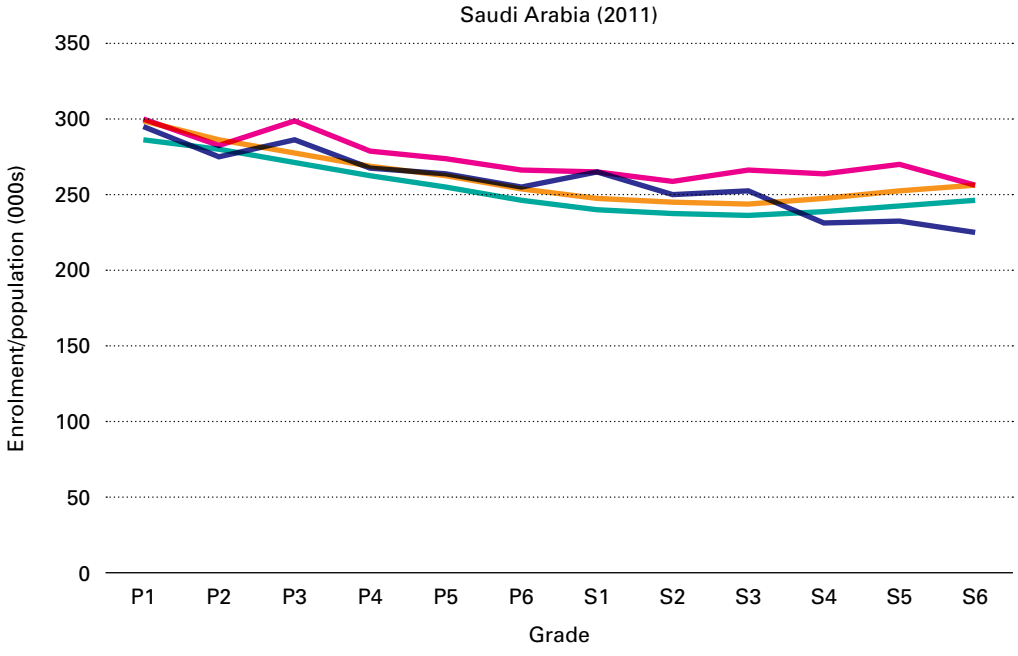
In the United Arab Emirates, there appears to be larger numbers of children dropping out, but they do so at a consistent rate across the primary and secondary grades. The population trends shown for the United Arab Emirates are unusual and probably inaccurate. The very large proportion of male adult migrant workers living there may prevent the standard population projection techniques from producing accurate results.

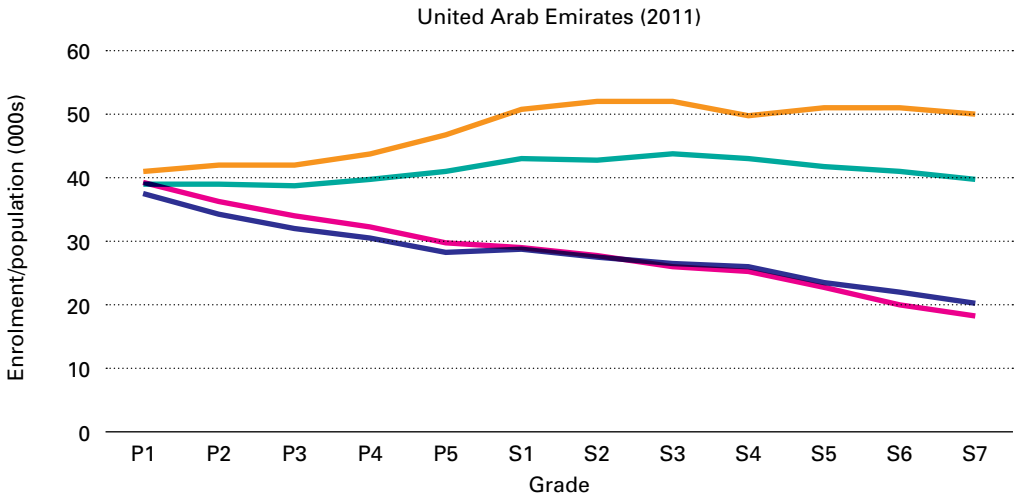
Figure 3.6 Population and enrolment by grade for Group 4 countries




Oman (2011)
Enrolment/population (000s)
30
25
20
15
10
5
0
P1
P2
P3
P4
P5
P6
S1
S2
S3
S4
S5
S6
Grade


Qatar (2011)
Enrolment/population (000s)
10
9
8
7
6
5
4
3
2
1
0
P1
P2
P3
P4
P5
P6
S1
S2
S3
S4
S5
S6
Grade


Saudi Arabia (2011)
Enrolment/population (000s)
350
300
250
200
150
100
50
0
P1
P2
P3
P4
P5
P6
S1
S2
S3
S4
S5
S6
Grade



Source: UIS (n.d.); UN-DESA (2011). Population trend for the United Arab Emirates is unusual due to the large number of migrant workers.

3.6 SUMMARY

The countries within MENA have very varied profiles of initial enrolment, progress through the education system, and of children dropping out, with implications on the forms of inequality that are found in each. The most fundamental educational inequalities are not having access to school or as a result of dropping out. However, even in countries that verge on universal enrolment at primary level, a detailed examination of enrolment by grade reveals children dropping out at the lower secondary and upper secondary levels, overage enrolment, and gender inequality. In summary:

- Djibouti, Sudan and Yemen (Group 1) remain far from achieving universal enrolment, even in primary school. Large numbers of children never enter primary school, and, of those who do, many drop out.
- Egypt, Iraq, Morocco, Palestine and pre-conflict Syria (Group 2) are close to universal primary enrolment, but this does not mean that all children are successfully completing primary school and making the transition to secondary school. Substantial minorities remain out of school at the primary level.
- Algeria, Iran, Jordan, Lebanon and Tunisia (Group 3) have near universal enrolment at the primary level. However, overage enrolment and students dropping out are problems at the secondary level. In most of these countries, there are gender gaps in favour of boys in the primary and lower secondary grades, which narrow or reverse towards the end of lower secondary.
- Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (Group 4) have high and stable enrolment at both primary and lower secondary grades. There remain small, but persistent, gender gaps in several countries and problems with overage enrolment.
- There are characteristic differences across many countries resulting in inequalities in enrolment between boys and girls. In Jordan, Kuwait, Qatar, Saudi Arabia, Syria and the United Arab Emirates, differences between boys' and girls' enrolment rates are small or non-existent. In Djibouti, Egypt, Iraq, Morocco, Sudan and Yemen, there are more boys enrolled than girls at every grade level. In Algeria, Bahrain, Iran, Lebanon, Palestine and Tunisia, the characteristic pattern is one in which there are more boys enrolled than girls up to lower secondary, but at some point in the secondary cycle, the gender gap reverses and there are more girls than boys.
- In several countries, including Algeria, Djibouti, Iran, Lebanon, Morocco, Oman and Tunisia, there are bottlenecks associated with high-stakes selection and examinations. Children repeat and retake examinations, inflating numbers in the examination year; in some cases, they repeat the year prior to the examination in order to increase their chances of passing. Patterns of this kind are almost certainly associated with inequalities in the chances of progression for children from different social groups.

The next chapter explores the characteristics of children who progress through the school systems in MENA and those who leave prematurely.

4

CHARACTERISTICS OF CHILDREN IN AND OUT OF SCHOOL

Increased access to education has been assured by policies across MENA to provide fee-free primary education. These commitments date from the 1950s and 1960s in most MENA countries (World Bank, 2008). As the previous chapter shows, however, access is far from universal. Earlier studies have revealed that inequalities in education rose rapidly in the region during the 1980s and 1990s, with sharp disparities in attendance and completion related to wealth, location and gender (UNESCO, 2011).

There are several reasons to identify and analyse inequalities in educational access and attainment in MENA. First, public spending per student in the region is highest at the tertiary level and lowest at the primary level. In some parts of MENA, secondary schooling has been expanding rapidly before every child successfully completes primary schooling. The pattern of educational financing is generally regressive, with children from richer households progressing further through the system and occupying a disproportionate number of places in higher education, much of which is publicly financed (World Bank, 2008). Increased participation is likely to have been greatest among children from middle- and high-income households, as has been the case in some other regions (Lewin and Sabates, 2011).

Second, there are concerns that private expenditure on tuition is growing and that it is likely to have an increasing impact on who is selected for progression to higher levels and to the best performing schools. Households spend large amounts on education in the form of private school fees and private tuition. In 2003, 19 per cent of primary school enrolment was in private schools across the MENA region, with much higher proportions in countries such as Lebanon (65 per cent), Qatar (42 per cent) and the United Arab Emirates (58 per cent) (World Bank, 2008). Private tuition payments are substantial, and children in poorer households that are unable to cover the costs may experience disadvantages with progressing through the education system (UNESCO, 2013). In other regions, such as East Asia, privatization has been more common at the higher levels of education, where it mostly affects the relatively privileged students able to advance to this level. By contrast, in the MENA region, it has predominantly affected primary schools, where the impacts on the most disadvantaged groups are greatest (World Bank, 2008).

A third set of concerns is the impact of armed conflict on regional disparities within countries. Armed conflict has posed problems for several countries in the region, and the most conflict-affected areas often have the worst education indicators. For example, internally displaced children may have to complement family income by begging, smuggling or collecting refuse, as is the case in Yemen. In UNHCR-run refugee camps in the Arab States, the average primary GER is only 42 per cent (UNESCO, 2011). The major sources used in this study do not adequately capture data for children who are excluded from basic education as a result of internal or cross-border migration. More work is required to estimate the magnitude of the inequalities that internally displaced persons experience and how this will affect the future trajectory of the educational exclusion of the most marginalized populations.

Fourth, there is a longstanding concern about gender disparities in MENA countries. The MENA region as a whole has progressed towards gender equality in educational access over the last decade. Some sources argue that most countries have closed their gender gaps at least at the primary level (World Bank, 2008), while others suggest that they still have some way to go (UNESCO, 2011). The detailed analysis by education grade in the preceding section suggests that there are substantial gender gaps in enrolments in Djibouti, Iraq, Morocco, Sudan and Yemen, with smaller gaps that are consistently in favour of boys during the primary grades in most of the other countries. In some cases, the gap diminishes or reverses in favour of girls in later grades.

This chapter focuses on who is being excluded from school, and it disaggregates the characteristics of children in order to profile those who fall into different zones of exclusion (Lewin 2007). Using household survey and census data, the study focuses on:

- **Inequalities in enrolment and attendance** – using estimates from household surveys of the proportion of children attending early childhood education, the proportion attending school by age group (children aged 6 to 10 years and 11 to 15 years), and administrative statistics on enrolment rates for boys and girls.
- **Inequalities in attainment** – using the years of school completed by children aged 15 to 19 years, the gap between the bottom 20 per cent and top 20 per cent by years of education completed, and the composition of the bottom 20 per cent.[15]
- **Inequalities in completing basic education** – using the proportion of children aged 15 to 19 years who have completed lower secondary education or higher; and the proportion who have left school (or never entered school) with fewer than six years of education.
- **Cumulative out-of-school risk related to combined characteristics** – using a multivariate logistic regression on the different factors of vulnerability, such as gender, living in a rural area, income and mother's education.

In each case, indicators are disaggregated by household wealth quintiles, gender, location, parents' educational level and region to see if distributions are more or less equitable.

[15] The bottom 20 per cent is calculated as the average of schooling years equal to or smaller than the 20 percentile cut-off, and the top 20 per cent is calculated as the average of schooling years equal to or larger than the eightieth percentile cut-off. For some countries, the eightieth percentile cut-off happens to be the same number of years of schooling as for the fourth quintile (the sixtieth percentile cut-off), which means the top 20 per cent actually covers almost 40 per cent of the sample. Applying this rule does bring about a bottom 20 per cent that covers around 20 per cent of the sample, which is particularly relevant since the bottom 20 per cent is the focus of this report.

4.1 INEQUALITIES IN ENROLMENT AND ATTENDANCE

Early childhood education and pre-primary schooling are predictors of subsequent achievement and attainment, and early gains in learning are often magnified by later gaps in achievement between groups. It is therefore important to establish how equitable access to early levels of education is in MENA. Enrolments in pre-primary school, which refers to the year of education immediately preceding primary Grade 1, are low across MENA, with a GER of only 22 per cent in 2010. Service providers are predominantly private and fee charging (UNESCO, 2012). The Arab States (UNESCO definition) is the only region that, according to the most recent data available, has yet to achieve gender parity in pre-primary education. Children living in poverty, who are the most in need of early childhood education, are the least likely to receive education (UNESCO, 2011). In Syria, before the recent conflict, attendance in preschool programmes for five-year-olds varied from less than four per cent of children in the poorest quintile of households to over 18 per cent of children in the wealthiest households.

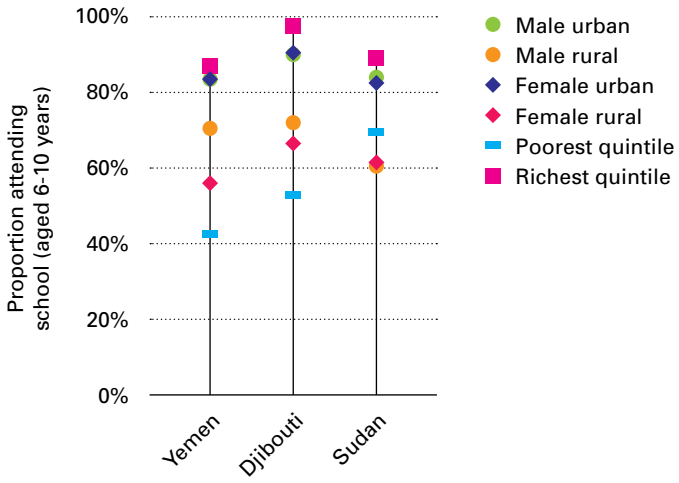
Early childhood education programmes targeting three- and four-year-olds are also accessed by very few children in the countries for which data are available *(see Table 4.1)*. An exception is among Palestinians in Lebanon, for whom United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) is providing early childhood education. In general, children from the richest quintile of households are much more likely to be in some form of early childhood education than those from the poorest quintile. In Yemen, even among the richest quintile, only 10 per cent of children are in early childhood education; among the poorest, less than one per cent is attending early childhood education. In Djibouti and pre-conflict Syria, early childhood education is more widespread, but the rich are still around six times more likely than the poor to take part. Pre-conflict Syria had comparable levels of early childhood education to Djibouti, despite being a richer country with much better access to education at primary and secondary levels. Low participation in early childhood education and preschool is associated with lower rates of enrolment in Grade 1 at the appropriate age and lower subsequent learning achievement. Despite having similar levels of income, the rate of participation in Algeria and Tunisia differ substantially. The overall rate of participation in Algeria is similar to Sudan or Palestine, despite Algeria being a richer country, while Tunisia has the highest rate of participation among the selected countries (excluding the subgroup of Palestinians in Lebanon). When analysing participation by level of income, it becomes apparent that a strong driver in Tunisia is the high rate of participation of higher income quintiles, reaching 90 per cent in the fifth quintile.

Table 4.1 Percentage of four-year-olds who attend early childhood education programmes, by wealth, by country groups

	Group 1 (%)			Group 2 (%)				Group 3 (%)	
Wealth	**Djibouti (2006)**	**Sudan (2010)**	**Yemen (2006)**	**Iraq (2011)**	**Palestine (2010)**	**Palestinians in Lebanon (2011)**	**Syria (2006)**	**Algeria (2012)**	**Tunisia (2011)**
Average	18.4	27.7	3.2	5.9	25.1	75.2	11.1	24.4	60.7
Poorest quintile	6.1	13.9	0.0	1.8	14.6	63.1	4.5	12.9	18.9
Richest quintile	36.7	65.1	10.2	14.5	39.4	83.6	26.5	42.2	90.1

Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran census 2006, IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

Figure 4.1 Disparities in attendance for children aged 6 to 10 years, by wealth, location (urban/rural) and gender, Group 1 countries



Source: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006.

There are large inequalities in the participation of primary-school-age children[16] by wealth, location and gender in Group 1 countries: Djibouti, Sudan and Yemen *(see Figure 4.1)*. In Sudan and Yemen, only around half of the children from the poorest wealth quintile are in school, while nearly all of the children from the richest quintile in Sudan, and 87 per cent of the children from the richest quintile in Yemen, attend school. There are additional large rural-urban disparities, closely associated with the wealth quintiles in Sudan and Yemen, with low female attendance in rural areas. Strikingly, gender disparity is almost absent among this age group in urban areas of all three Group 1 countries. In contrast, in rural Yemen, boys are about 25 per cent more likely to be enrolled in school than girls.

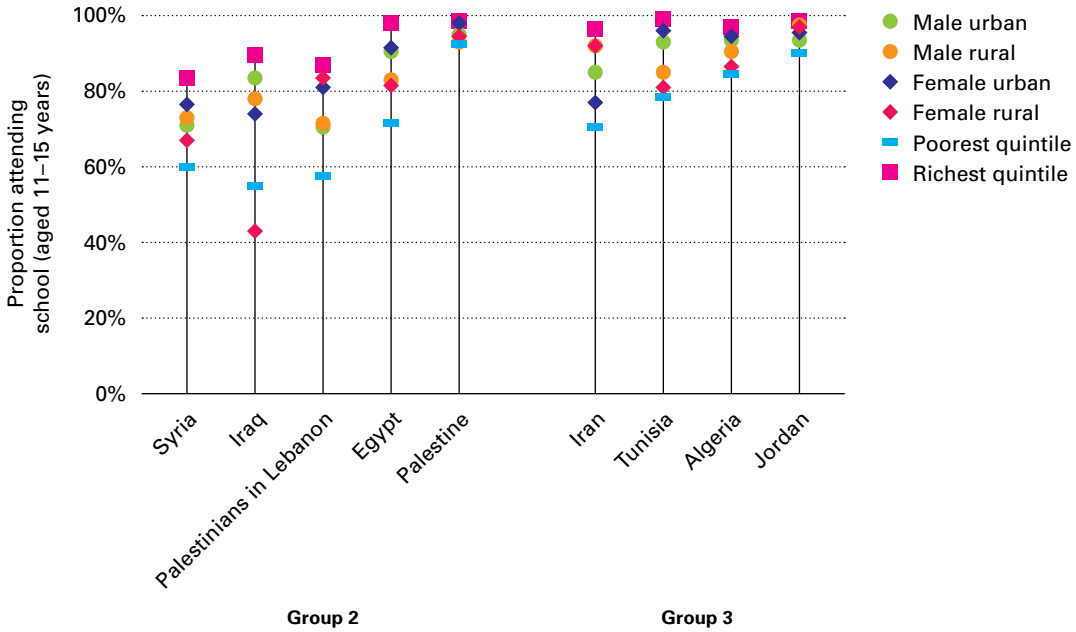
The other three groups of countries are approaching universal primary education, so there are not large disparities in participation among children of primary age. An exception is Iraq, where the 2011 MICS data suggests that only 80 per cent of rural girls are in school at ages 6 to 10 years, compared to 90 per cent of rural boys, and 93 per cent of urban girls and 95 per cent of urban boys.

For Group 2 countries, Egypt, Iraq, Morocco, Palestine and Syria, larger disparities can be found for children aged 11–15 years, when children are expected, in most cases, to be in lower secondary education *(see Figure 4.2)*. At a smaller scale, these disparities are also found for countries in Group 3. The disparity between rural girls and other groups in Iraq is stark in this age group; barely 40 per cent of rural girls attend school, and there are also large disparities by wealth. Jordan and Palestine have nearly 100 per cent school attendance among this age group.[17] The wealth gap exceeds the rural-urban gap in all countries. The wealth gap is particularly large in Egypt, Iran, Syria and Palestinians in Lebanon. The richest children in Egypt and Syria are one third more likely than the poorest children to attend school. On the other end of the spectrum, the students in the fifth (the richest) quintile are only 10–15 per cent more likely to attend school in Algeria and Jordan. The rural-urban gap is smaller than the rich-poor gap, but still substantial in Egypt and among Iraqi females. In Egypt, urban children aged 11–15 years are around 10 per cent more likely to attend school than rural children in that age group. Iran presents an interesting phenomenon: rural enrolment is higher than urban enrolment. The difference is particularly relevant for females. Rural females are 19 per cent more likely to attend school than their urban counterparts.

[16] Countries in the region have varying ages of enrolment in primary and lower secondary school. For better comparability across countries, this report focuses on children aged 6–10 years and 11–15 years.

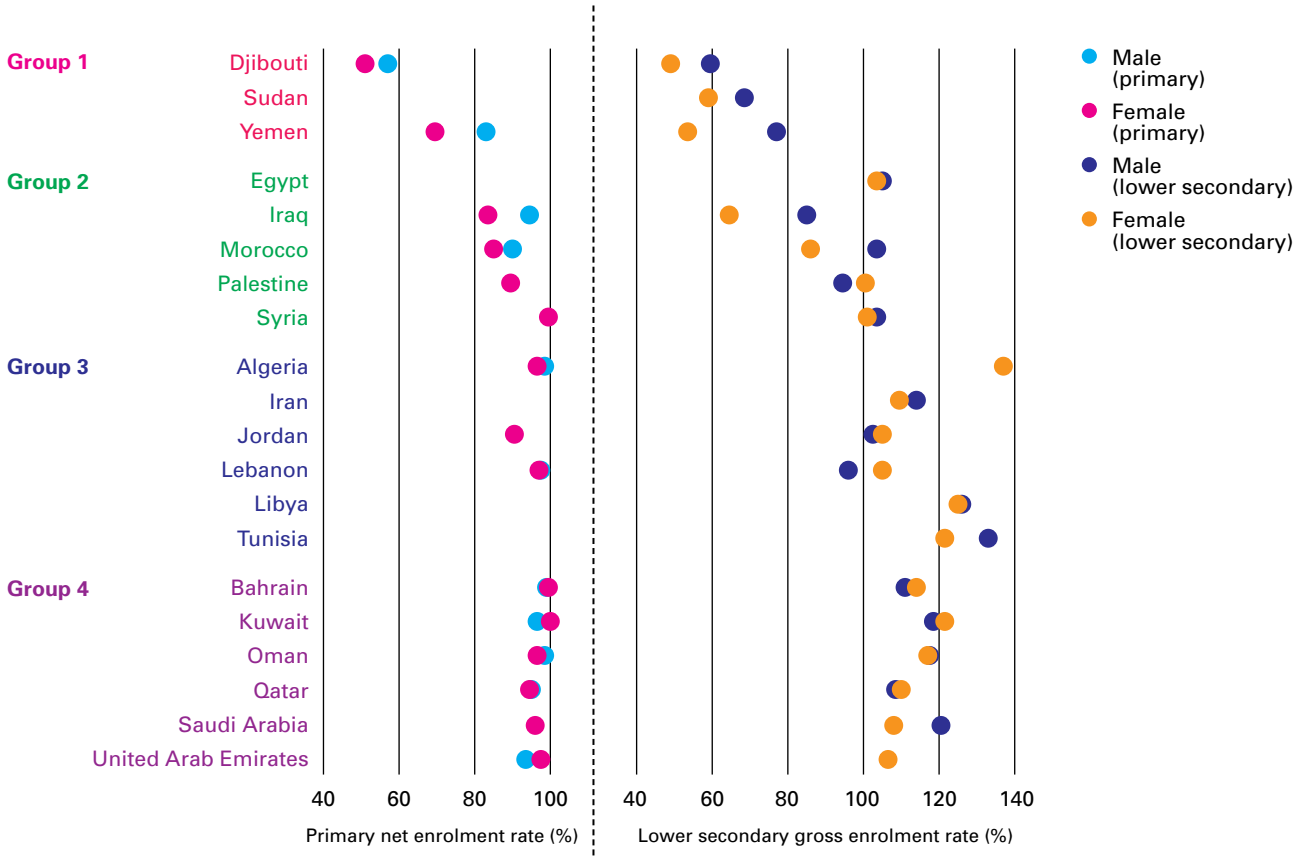
[17] The administrative data showing nearly 100 per cent is somewhat at odds with the household survey data in Chapter 3 *(see Table 3.2)*.

Figure 4.2 Disparities in attendance for children aged 11–15 years, by wealth, location (urban/rural) and gender, Group 2 and Group 3 countries



Source: Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran census 2006, IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

Figure 4.3 Primary and lower secondary enrolment, by gender, by country groups



Source: UIS, most recent data available *(see Appendix A, Table A.1)*

Gender parity in MENA has historically been skewed strongly in favour of boys. It has improved in recent years, with the gender parity index (GPI)[18] in the primary net enrolment rate in the Arab States rising from 0.77 in 1999 to 0.94 in 2010 (UNESCO, 2012). Recent enrolment data confirm that gender gaps are still large at both primary and lower secondary levels *(see Figure 4.3)*. In particular, some countries in Groups 1 and 2 – Djibouti, Iraq, Morocco and Yemen – continue to have substantial gender gaps at the primary level. The same countries tend to have even larger gaps at the lower secondary education level. There are roughly 50 per cent more boys than girls in lower secondary school in Yemen. Tunisia and Saudi Arabia (in Group 3 and 4, respectively) appear to have large gender gaps in favour of boys at the lower secondary level, although given that the GERs for both boys and girls is well over 100 per cent, these may represent greater overage enrolment among boys rather than any genuine advantage. Lebanon and Palestine have smaller gender gaps in favour of girls. Moreover, as the analysis in Chapter 3 reveals, patterns of gender disparity vary by age and grade. Egypt, for example, has a substantial gap in both primary and lower secondary grades in favour of boys when enrolment is plotted by grade *(see Figure 3.4)*. However, this is not apparent from inspecting the overall primary and lower secondary enrolment rates.

4.2 INEQUALITIES IN ATTAINMENT

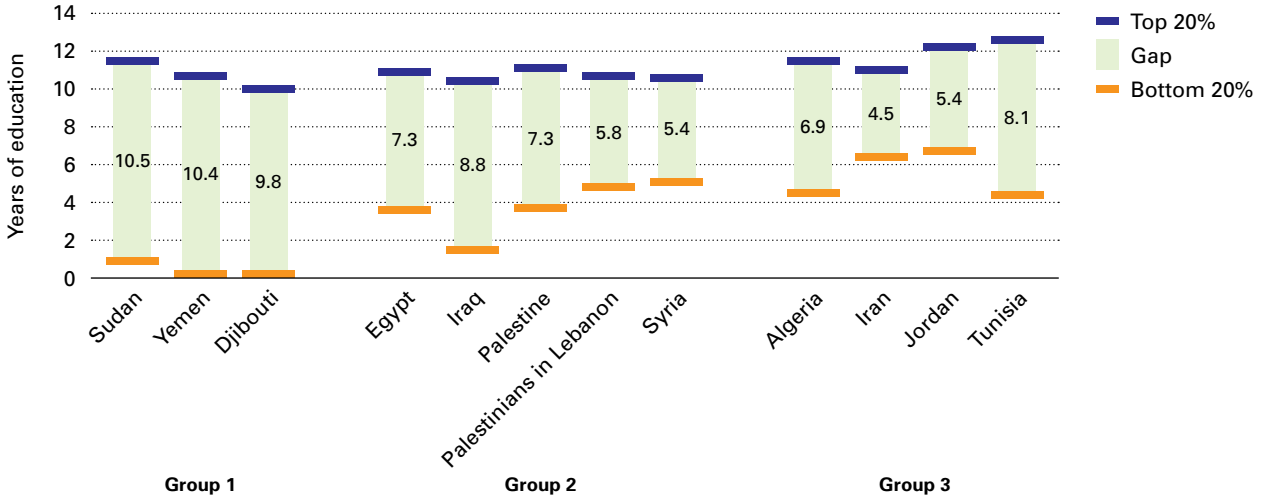
How do these inequalities of access translate into differences in grade attainment? This can be examined by taking the number of years of schooling completed by 15 to 19-year-olds, and comparing the 20 per cent with the lowest attainment to the 20 per cent with the highest attainment. By this measure, inequality in the low-enrolment countries is especially striking *(see Figure 4.4)*. In each of the countries in Group 1 – Djibouti, Sudan and Yemen – the bottom 20 per cent have, on average, less than one year of education. Most of this group have simply never enrolled. Even among some higher-enrolment countries like Egypt and Iraq, the average 15 to 19-year-old in the bottom 20 per cent only spent two years (Iraq) or four years (Egypt) in education. Only in Jordan has the average young person in the bottom attainment quintile completed eight years of basic education. By contrast, the attainment of the top quintile is roughly on par throughout the MENA countries for which data were available. In each case, the highest-attaining 15 to 19-year-olds have completed secondary education and attained 10 or 11 years of education.

Wide gaps in attainment between the top and bottom 20 per cent are not rare in lower middle and middle-income countries. Among these countries, large gaps come from high numbers of students dropping out during the early stages of education despite initial high enrolment rates. The gaps observed in Algeria and Tunisia are comparable to the gaps in Egypt and Palestine, despite higher initial rates of enrolment and higher average income.

Large gaps are possible among low-income countries because, among the poorest countries with substantial out-of-school populations, there are many children who do not go to school at all or who drop out after only one or two years. The size of these gaps is a very clear indication that growth in participation has been unequal and favours some groups over others, as well as the magnitude of the challenges presented by high levels of inequality. These large gaps suggest that despite the emphasis on universal access, policy dialogue has yet to result in actions that prioritize equity in attainment. This would mean achieving greater parity in the ability of students not just to enter school on schedule, but also to stay in school and complete at least a full cycle of basic education. The MENA countries have educational elites with similar levels of attainment, but they vary greatly to the extent in which they successfully educate the lowest quintile of the population. This is an indication of varying levels of political will and uneven commitments of strategies to promote equity.

[18] The ratio of female to male values of a given indicator.

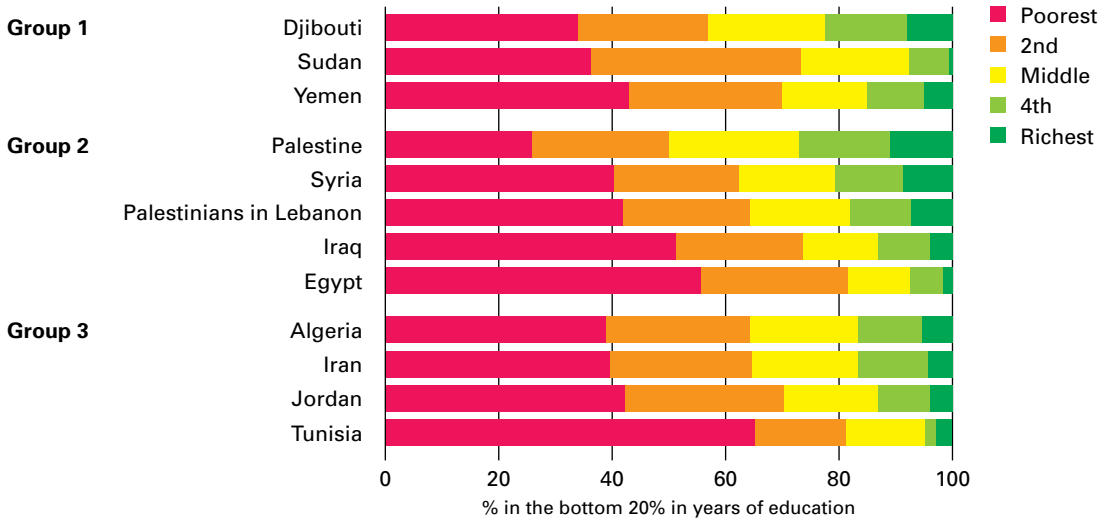
Figure 4.4 Gap between the top 20 per cent and bottom 20 per cent in years of education for 15 to 19-year-olds, by country groups



Note. Cases are weighted in calculating the distribution so that 15-year-olds carry as much weight as 16-year-olds, 17-year-olds, etc., regardless of the population distribution.

Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

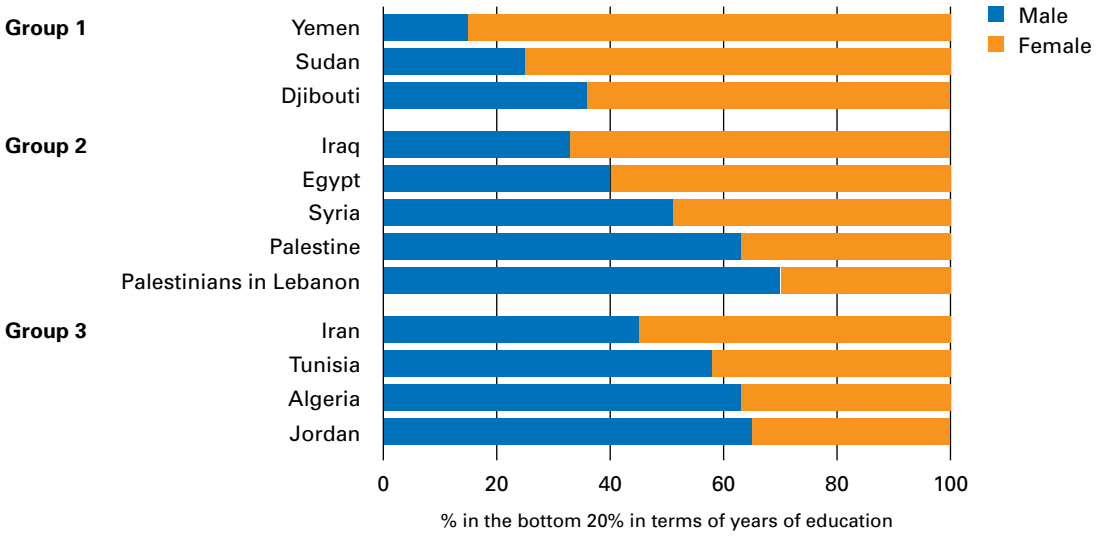
Figure 4.5 Composition of the bottom 20 per cent in years of education, by wealth quintile, by country groups



Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

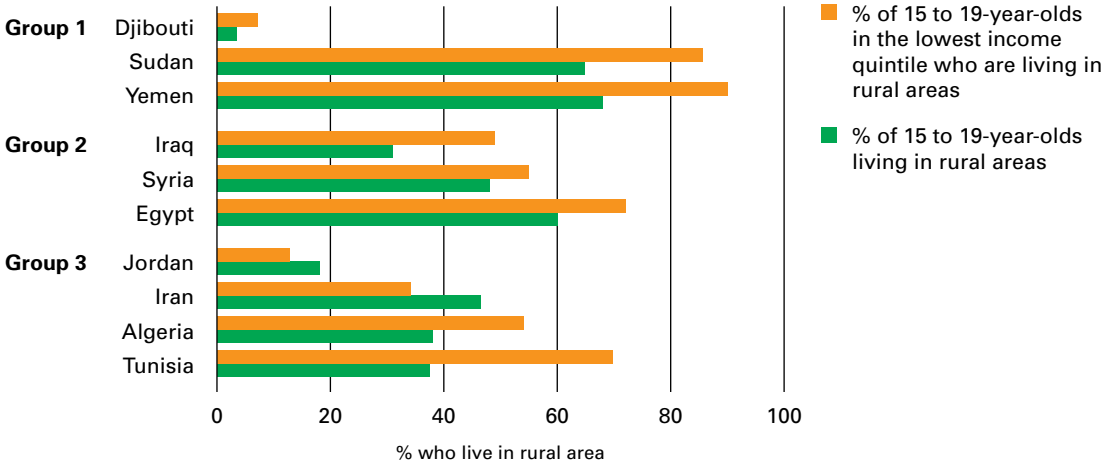
In several MENA countries, the 20 per cent of students at the bottom of the educational attainment distribution leave school with less than primary education. It is important to explore the composition of this group. In each country with data available, the poorest wealth quintile is over-represented among those whose attainment is lowest *(see Figure 4.5)*. The wealth-attainment relationship appears to be strongest in Egypt, Iraq, Tunisia and Yemen, where the poorest and second poorest wealth quintiles make up the vast majority of the lowest attainment quintile. In other countries, the link is less prominent. Algeria, Djibouti and Palestine have large attainment gaps that can only partly be explained by differences in wealth, indicating that other forms of exclusion are significant.

Figure 4.6 Composition of the bottom 20 per cent in years of education, by gender in years of education, by country groups



Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

Figure 4.7 Percentage of 15 to 19-year-olds in the lowest income quintile who are living in rural areas and the overall percentage of 15 tom 19-year-olds living in rural areas



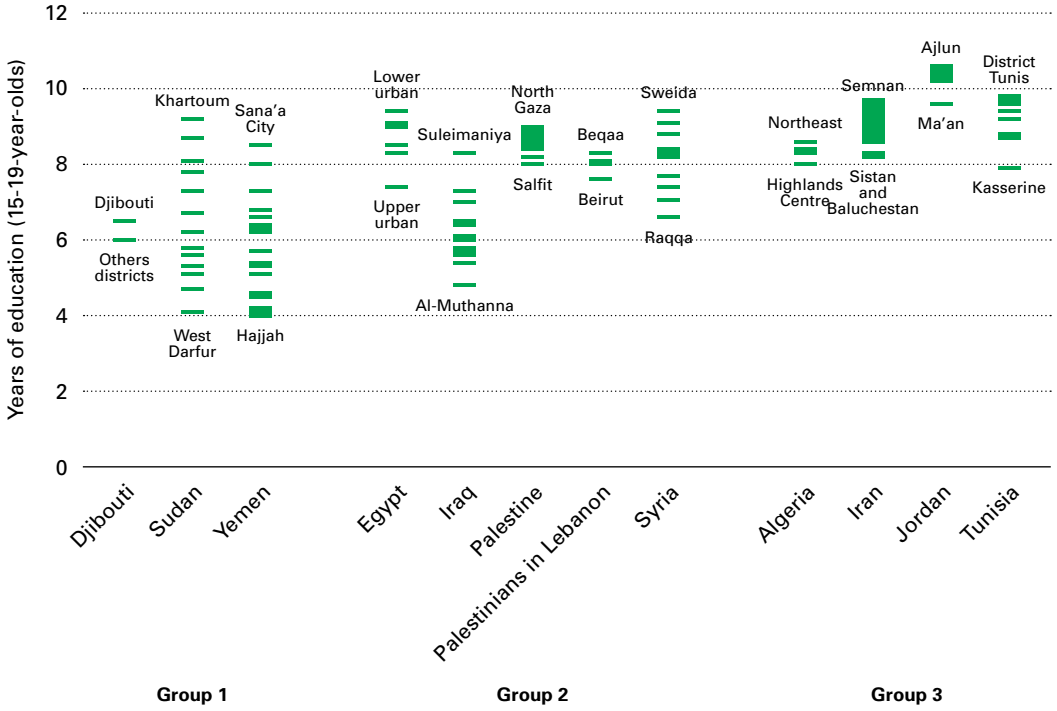
Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

In all of the Group 1 countries, as well as Egypt and Iraq, young women dominate the bottom 20 per cent in years of education *(see Figure 4.6)*. There is a majority of young men in the bottom 20 per cent in Algeria, Jordan and Palestine, and among Palestinians in Lebanon.

In Djibouti, Egypt, Iraq, Sudan, Tunisia, Yemen and pre-conflict Syria, the bottom 20 per cent in wealth are more likely to live in rural areas *(see Figure 4.7)*. In Jordan, the bottom 20 per cent are about as likely to live in a rural area as other young people. In Iran, the bottom 20 per cent in wealth is more likely to live in urban areas than the general population.

Thus, young people from the richest households are consistently spending more years in school than the poorest, and in most cases, young women and children in rural areas are over-represented among those who complete the fewest years of schooling.

Figure 4.8 Average years of education of 15 to 19-year-olds, by sub-national regions, by country groups



Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12 (see Appendix A, Table A.6 for more data).

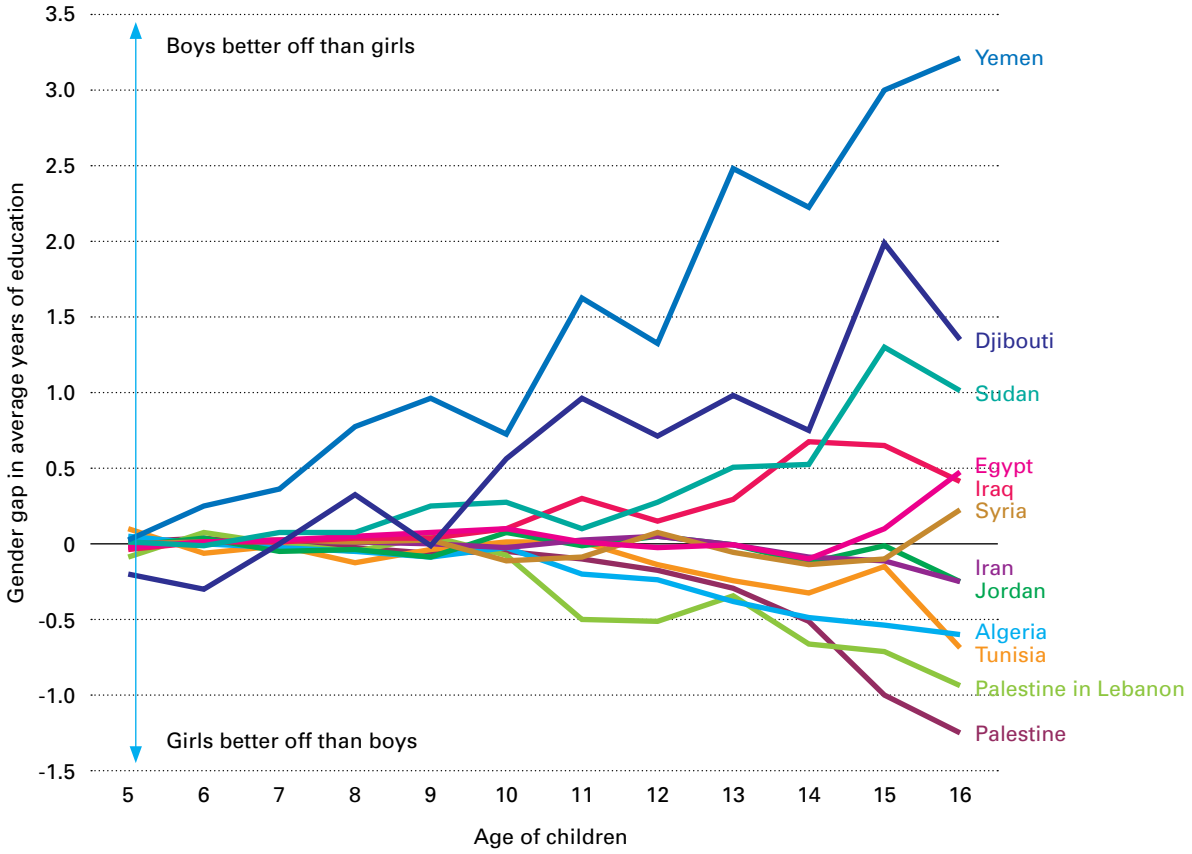
In addition, there are extremely large inequalities between sub-national regions in some countries *(see Figure 4.8)*. In the most educationally disadvantaged parts of Sudan and Yemen, young people have, on average, only completed four years of education by the age of 15-19 years, while in the regions with highest attainment, young people aged 15-19 years have completed on average eight or nine years in education, putting them on par with many of the young people in countries like Algeria, Iran and Palestine.

Conversely, in deprived parts of Egypt such as the upper urban region, and Syria such as Raqqa, young people have typically only stayed in school for around seven years, leaving them at a severe disadvantage compared to their peers in other regions with, on average, above nine years of education. This implies that residence has a strong impact on the opportunity to enrol, progress through the education system and subsequently compete in modern sector labour markets that value educational qualifications. It is an inequality that advantages some and disadvantages others for reasons unrelated to capability. The lowest performing regions are, in most cases, the remote and rural parts of large countries such as Iraq, Sudan, Syria and Yemen. Regional inequalities are less evident in smaller countries such as Djibouti, Jordan and Palestine, but also in Iran. In Sudan, conflict-affected areas, such as West Darfur, are conspicuously marginalized.

Even within these regions, there are substantial inequalities. In Al Mahweet, Yemen, a sub-national region in MENA with the lowest educational attainment, over 40 per cent of people aged 15-19 years are in the bottom 20 per cent for Yemen as a whole and have close to zero years of education on average. But 16 per cent of people aged 15-19 years in Al Mahweet are in the top 20 per cent for Yemen as a whole, typically attaining around 10 years of education.

Another way of looking at inequalities by attainment is to trace gaps between better-off and worse-off population groups in years of schooling attained by age. This allows insight into how inequalities may increase or decrease as children flow through the school system. The gender gap in favour of boys, for example, increases steadily as children get older in Group

Figure 4.9 Gender gap in average years of education for children aged 5-16 years, by country



Source: Algeria MICS 2012, Djibouti MICS 2006, Egypt DHS 2014, Iraq MICS 2011, Iran (census 2006) IPUMS database, Jordan DHS 2012, Palestinians in Lebanon MICS 2011, Palestine MICS 2010, Sudan Household Health Survey 2010, Syria MICS 2006, Tunisia MICS 2011-12, Yemen MICS 2006.

1 countries Djibouti, Sudan and Yemen *(see Figure 4.9)*. The gap is particularly striking in Yemen, where by the age of 11 years, boys have spent over 1.5 years more in school than girls, and by the age of 15 years, this gap has doubled to three years. This can be accounted for by very large disparities in access to education for girls, especially in rural areas, where the same data indicate that fewer than half of girls aged 11-15 years attend school and barely one in eight girls aged 16-19 years attend school.

A smaller gender gap can be seen in Iraq, mainly at ages 12 years and above. In other countries, there is either no consistent gap, or, as in Palestine and for Palestinians in Lebanon, there is a gap in favour of girls that gets larger with age. A gap in favour of girls can be observed in all Group 3 countries where data is available (Algeria, Iran, Jordan and Tunisia).

Thus, although there might be gender gaps in favour of boys in enrolment and attendance, these do not translate into boys achieving more years of education on average in countries with near-universal primary and high lower secondary enrolment (Algeria, Egypt, Iran, Syria and Tunisia). Boys in these countries seem to be repeating or enrolling overaged, to the extent that their greater presence in classrooms does not give them much advantage in attainment over girls. The data, therefore, make important distinctions between the patterns that exist in different countries, providing a clear indication that no single set of interventions or policy reforms will be appropriate in all cases, while countries in the same group are likely to face similar challenges. It is also a reminder that the likely cause of differences between boys and girls are almost certainly sensitive to age and grade.

4.3 INEQUALITIES IN COMPLETING BASIC EDUCATION

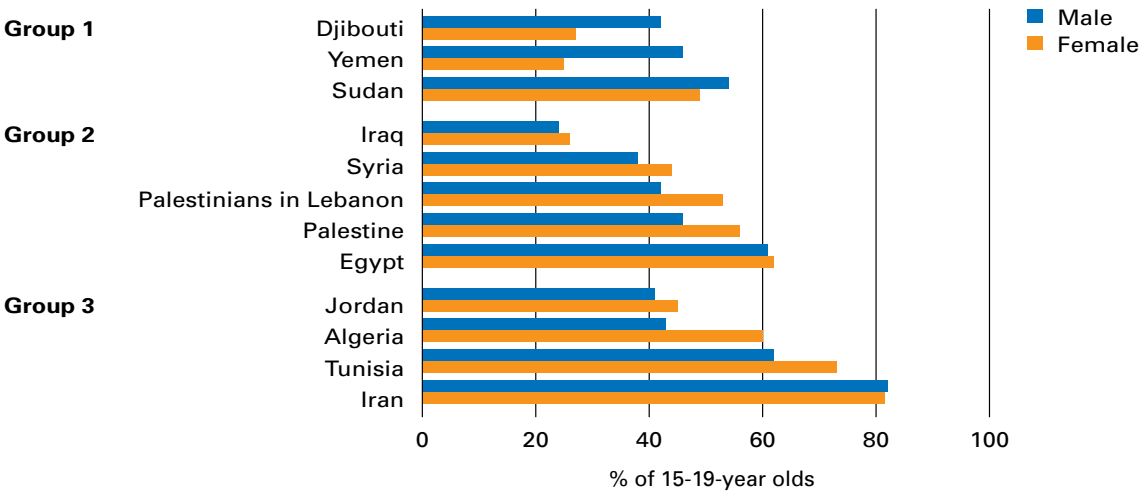
Half or less than half of young people in Djibouti, Iraq, Palestine, Palestinians in Lebanon Sudan, Syria, Tunisia and Yemen have completed lower secondary education *(see Figure 4.10)*. Young people who have been excluded from school are unlikely to have acquired robust basic learning competencies and abstract thinking skills. Without these skills, they are unlikely to be considered for modern sector jobs that are knowledge based and require the higher level cognitive skills associated with problem solving.

Surprisingly, the data highlight the fact that even countries with relatively high enrolment rates such as Iraq (Group 2), Syria (Group 2), Algeria (Group 3) and Jordan (Group 3) have large numbers of 15 to 19-year-olds who have not completed lower secondary. Some of this may be explained by overage enrolment since some 15 to 19-year-olds are still completing their lower secondary education. But even among the population aged 20-24 years, only 38 per cent in Iraq and 42 per cent in Syria have completed lower secondary *(see Appendix A, Table A.8)*. Iraq and Syria may be ahead of Djibouti, Sudan or Yemen in terms of primary school access; however, when it comes to completion of a full cycle of basic (primary plus lower secondary) education, they are equally as challenged.

In Djibouti and Yemen, there are severe gender disparities. Over 40 per cent of boys complete basic education and only around a quarter for girls. The gender gap in Sudan is more modest; boys' higher primary school enrolment rates do not necessarily translate into much higher completion rates of basic education. In pre-conflict Syria, Palestine, and for Palestinians in Lebanon, boys are less likely than girls to complete basic education, although the gender gap is smaller. In Algeria, a large gender gap can be observed in favour of females, with close to a 20 per cent point difference in the proportion of 15 to 19-year-olds who have completed at least lower secondary.

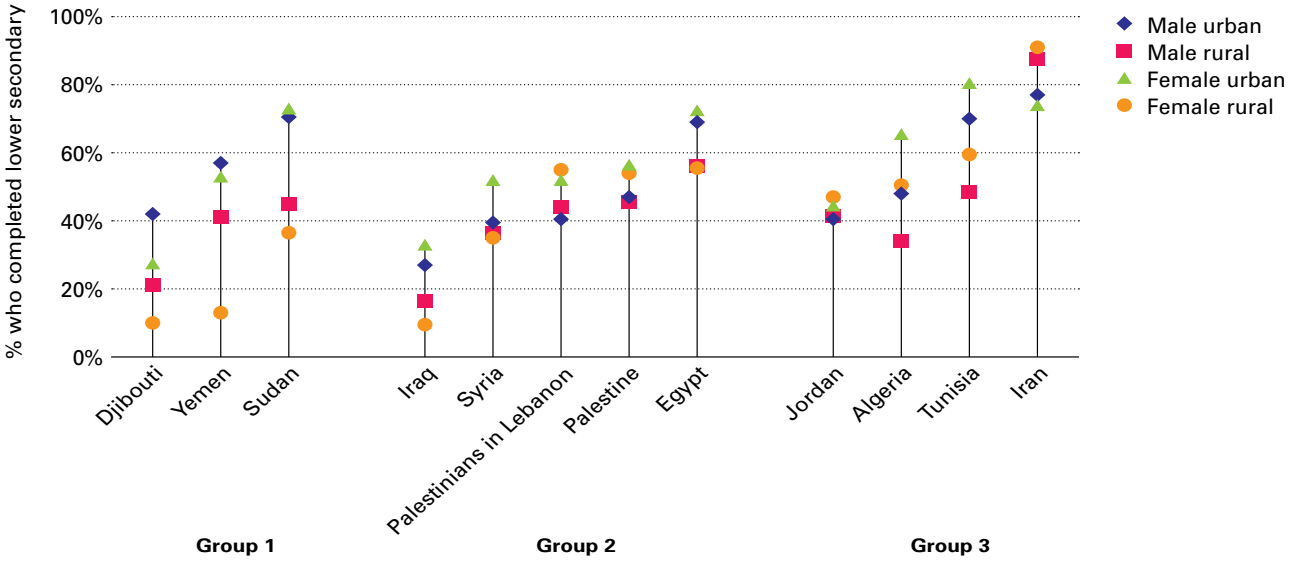
Larger disparities can be seen when the proportion of 15 to 19-year-olds who have completed basic education is broken down by both gender and rural-urban location *(see Figure 4.11)*. Less than 10 per cent of rural girls in Djibouti and Iraq have completed lower secondary education, compared to around 30 per cent of young people living in urban areas. In Djibouti, a gender gap in favour of males can be found in both rural and urban areas, whereas in other countries in the region, gender gaps are usually smaller or reversed (i.e., in favour of girls) in urban areas. This is the case for Algeria and Tunisia (Group 3), where females have higher completion rates than their male counterparts, with urban females having the highest completion rate. In Egypt and Palestine, the main division is between urban and rural areas, and the gender gaps within each area are small. In Iran, there is a 'reversed' rural-urban divide: Around 90 per cent of rural young people have completed basic education, compared to only 75 per cent of their urban peers.

Figure 4.10 Percentage of 15 to 19-year-olds who have completed at least lower secondary education, by gender, by country groups



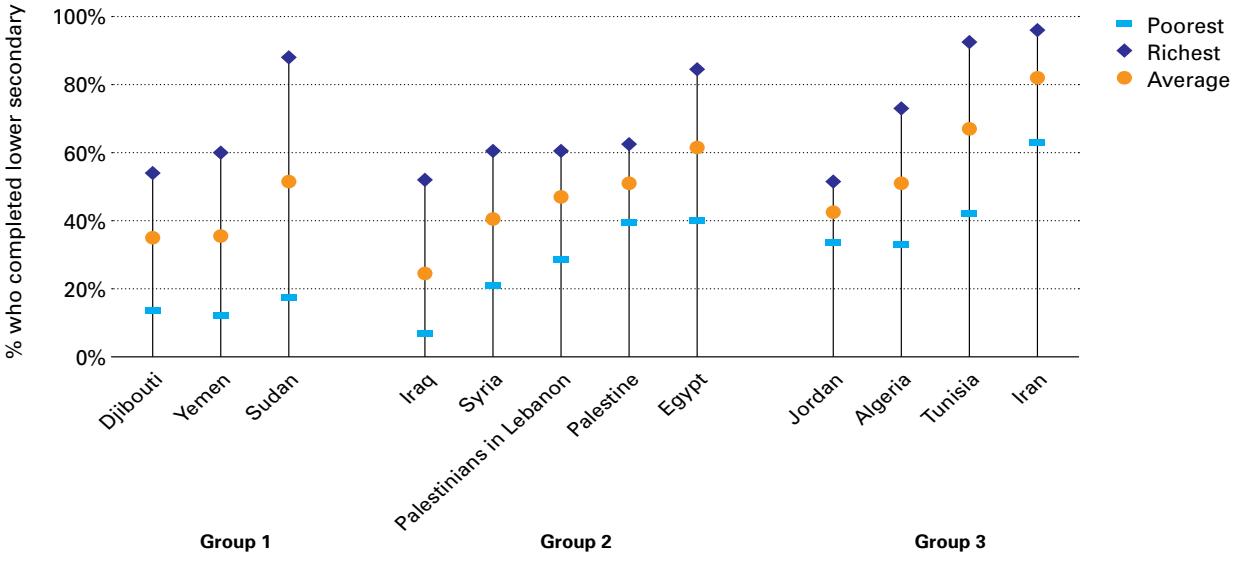
Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

Figure 4.11 Percentage of 15 to 19-year-olds who have completed at least lower secondary education, by gender and location (urban/rural), by country groups



Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

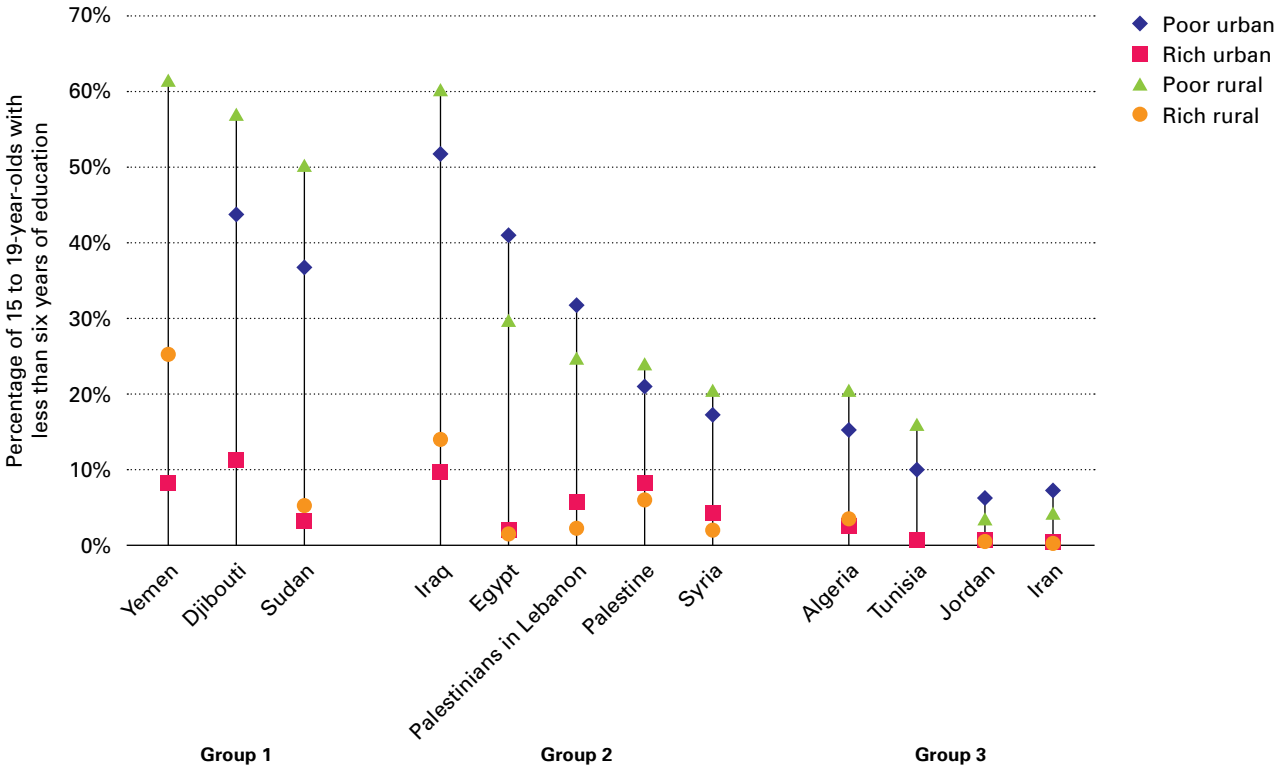
Figure 4.12 Percentage of 15 to 19-year-olds who have completed at least lower secondary education, by wealth, by country groups



Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

Disparities by wealth resonate with rural-urban disparities (except for Iran), partly reflecting the tendency for urban households to be wealthier than rural ones. Wealth gaps are more consistent than rural-urban gaps across the countries of the region and, compared to the poorest 20 per cent to the richest 20 per cent, are often more extreme *(see Figure 4.12)*. The poorest households in Iraq face more severe educational deprivation than those in any other country; only seven per cent complete lower secondary education. This partly reflects poor completion of basic education overall in Iraq: Even among the richest households, only half of young people are achieving this outcome. Sudan has the largest disparity by wealth in the region; 88 per cent

Figure 4.13 Percentage of 15 to 19-year-olds who are not in school and have completed less than six years of education, by wealth and location (urban/rural), by country groups



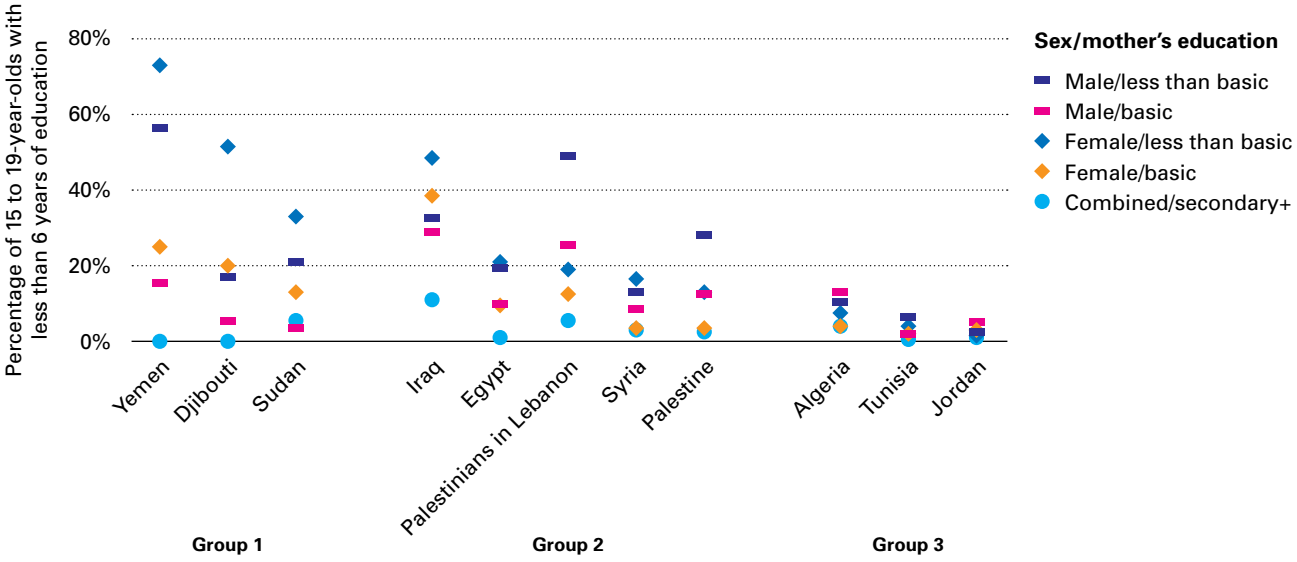
Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

of young people from the richest households complete basic education, compared to only 17 per cent from the poorest households. However, higher average income does not imply a low gap; Tunisia has the second highest gap (50 per cent) where only 42 per cent of the poorest quintile completed basic education. The gap is smallest in Jordan, but even there, the richest are about 25 per cent more likely than the poorest to complete basic education.

The large proportion of 15 to 19-year-olds not completing lower secondary education is partly a reflection of overage enrolment. Many 15 to 19-year-olds have not yet completed lower secondary school, even though the official entry age to upper secondary is 14, 15 or 16 years depending on the country. Among 20 to 24-year-olds from the poorest households, it is only in Jordan and Iran that more than half have completed lower secondary school *(see Appendix A, Table A.8)*. In Djibouti, Iraq, Sudan, Syria and Yemen, only around 20 per cent of young people in the poorest quintile have completed lower secondary school. Children who fail to complete the educational cycle within a year or two of the correct age are almost certain to be disadvantaged in the labour market and are unlikely to be high-scoring students who can gain access to higher levels of education and training.

Thus, despite high official enrolment rates across the cycle in many countries, household survey analysis indicates that large numbers of young people from all kinds of backgrounds are not completing basic education, and the numbers are much greater for the poorest quintile. Furthermore, in many countries there is a group of young people who are still worse off. A useful measure of extreme disadvantage is to look at the number of 15 to 19-year-olds who are neither currently enrolled in education nor have completed less than six years of education, which is the equivalent of primary education in most countries *(see Figure 4.13)*. There are substantial numbers of young people falling into this category in all of the countries for which there are survey data, except for Iran and Jordan, where they comprise under three per cent of the total population. The likelihood of falling into this group appears to be driven primarily by wealth.

Figure 4.14 Percentage of 15 to 19-year-olds who are not in school and have completed less than six years of education, by gender and mother's education, by country groups



Source: Group 1: Djibouti MICS 2006, Sudan Household Health Survey 2010, Yemen MICS 2006; Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006; Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

The worst off are young people from poor rural backgrounds in Djibouti, Iraq, Sudan and Yemen; over half of these people have either never entered school, or entered but left with less than six years of education.

However, levels of educational deprivation among the urban poor are also high in several countries. For Egypt and for Palestinians in Lebanon, levels of deprivation are higher among the urban poor than among the rural poor. This is despite the fact that household surveys often tend to under-sample people living in informal urban settlements, who are likely to be among those with the greatest difficulty accessing schools (Sabry, 2009). Many countries in MENA are latecomers to urbanization but are now catching up rapidly (World Bank, 2010). As poverty is increasingly urbanized and urban economic inequalities increase (Bibi and Nabli, 2010), without an appropriate response to ensure that marginalized urban groups have access to school and the means to stay in school, educational inequalities within urban areas are also likely to rise.

The vast majority of people coming from the wealthiest households have completed at least six years of education, regardless of urban or rural location. A partial exception is Yemen, where even among the richest rural households, one quarter of young people leave school after less than six years. This group of educationally disadvantaged people from wealthy households is overwhelmingly female, reflecting severe gender inequality in rural areas.

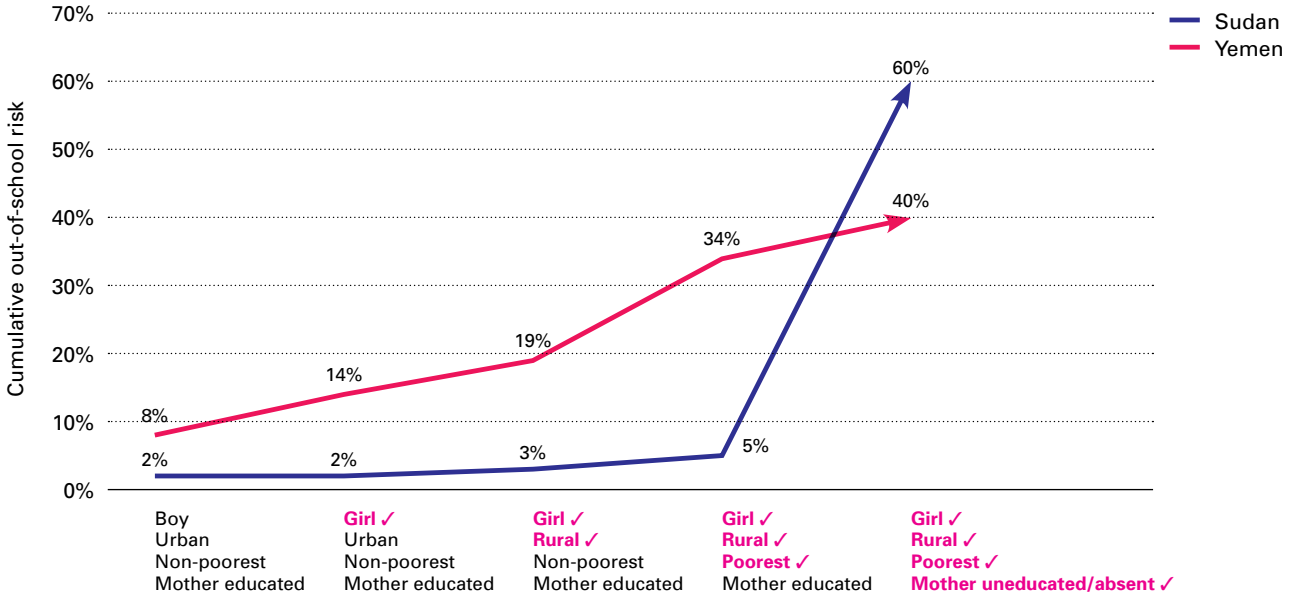
Mother's education is another dimension associated with inequalities in attainment and achievement, and it often has effects that differ by gender *(see Figure 4.14)*. Among 15 to 19-year-olds whose mothers completed less than basic education, there are large gender gaps in attainment in Djibouti, Iraq, Sudan and Yemen. In Sudan, around three-quarters of female adolescents completed less than six years of education in cases where their mothers did not complete basic education. For this group, there has been little upward educational movement over the two generations. In Yemen, the proportions leaving school with less than six years of education are lower, but the gender gap is very wide; over half of young women do not complete six years of education, compared to 17 per cent of young men. As noted earlier, there is a reverse gender gap in Palestine and among Palestinians in Lebanon, and this can be found among the children of both educated and non-educated mothers. In Group 3 countries (Algeria, Jordan and Tunisia) inequalities in attainment by mother's education are relatively small, although existing research in Jordan finds parents' education to be an important determinant of children's educational attainment in specific parts of the country, namely those areas that have the fewest primary and lower secondary schools (Assaad and Saleh, 2013).

A lot of work remains to be done to reduce the large disparities that exist across the region to increase the chances of completing basic education. It is evident that those who have completed less than six years of schooling have a handicap in their insertion and development in the labour market. Their capacity to contribute as citizens to national development will also be compromised. It is, therefore, a matter of priority to ensure that not only average levels of attainment increase in most MENA countries, but that the dispersion from the mean is reduced. This would be both fairer and more efficient.

4.4 CUMULATIVE OUT-OF-SCHOOL RISK RELATED TO COMBINED CHARACTERISTICS

This section provides an analysis of the cumulative inequalities regarding school participation observed in individuals with different characteristics. This section provides a clearer picture of how the out-of-school risk increases for children when they experience multiple forms of disadvantage. For this purpose, we conduct multivariable logistic regression to predict the possibility of out of school using the indicators of disadvantage as explanatory variables. This exercise is intended to be a methodological expansion of the analysis of Section 4.3. The previous section analysed inequalities in completing basic education by comparing children one characteristic at a time (gender, location, mother's education, etc.). However, differences observed based on these classifications could be a reflection of an underlying variable not presented in the two-way tabulation. For example, if children in rural households are more likely to be out of school due solely to differences in income, we would find no differences in school participation between urban and rural children if we adjusted our estimates by income. The multivariable logistic regression methodology seeks to do this adjustment for a series of observable characteristics associated to school exclusion. The analysis is presented by country group (Groups 1, 2 and 3) and by level of education (primary and lower secondary). The results are reported in line graphs *(see Figures 4.15 through 4.20)* where increasing values represent higher risks of being out of school as the individual accumulates characteristics of exclusion.[19]

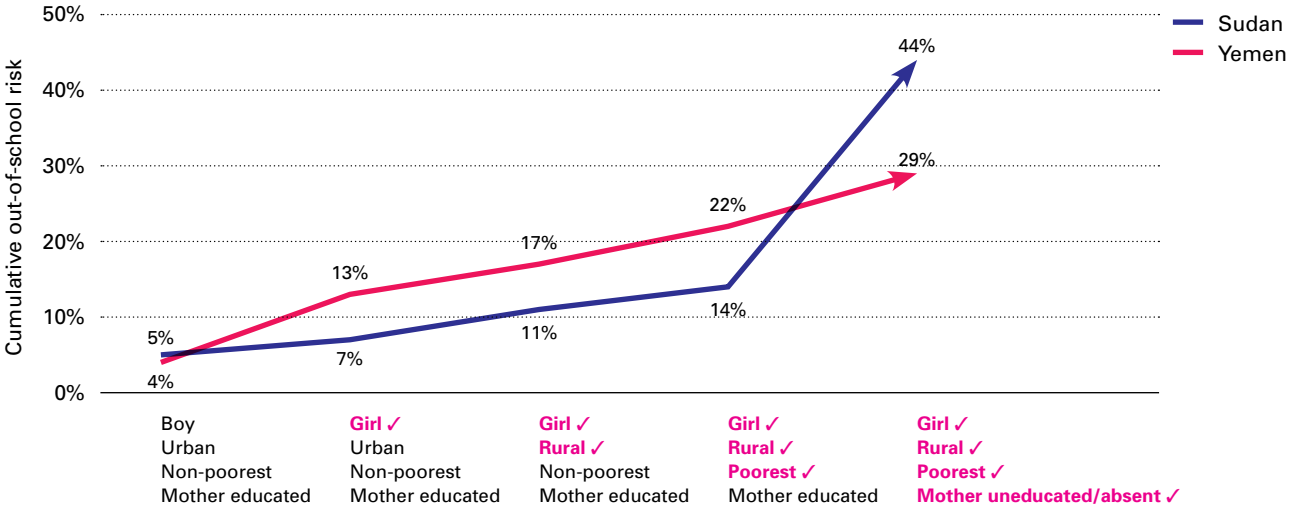
Figure 4.15 Cumulative out-of-school risk related to combined characteristics, primary-school-age children, Group 1 countries



Source: Sudan Household Health Survey 2010, Yemen MICS 2006.

[19] Similar analyses can be found in the MENA OOSCI documents. There could be small differences in figures due to the nuance in sampling process and age adjustment. Djibouti, Iran and Morocco are not included for this analysis because these countries have outdated data and their wealth indexes are manually created by the author, which make the results incomparable to other countries' indexes.

Figure 4.16 Cumulative out-of-school risk related to combined characteristics, lower-secondary-school-age children, Group 1 countries



Source: Sudan Household Health Survey 2010, Yemen MICS 2006.

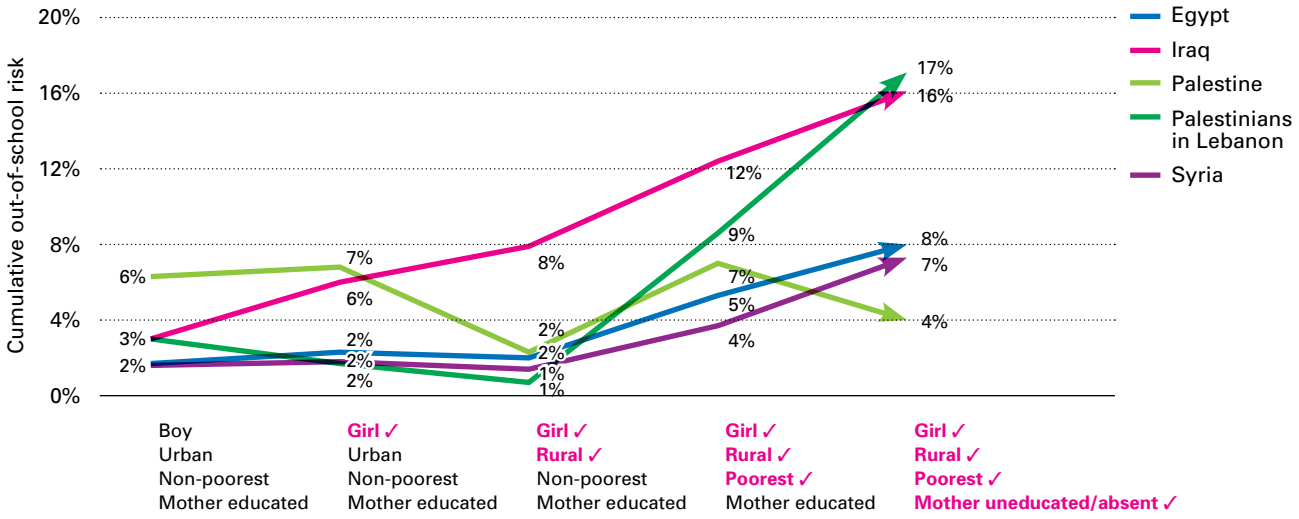
Sudan and Yemen both have high rates of out-of-school children. However, when we analyse the cumulative probability of the characteristics associated to primary school exclusion *(see Figure 4.15)*, we find meaningfully different profiles. In Yemen, every additional characteristic adds to the cumulative chance of being out of primary school. Girls are more likely to be out of school than boys by about six per cent (from eight to 14 per cent comparing the first and second points). Rural girls are more likely to be out of school than girls in urban areas by another five per cent (from 14 to about 19 per cent comparing the second and third points). Girls living in rural areas in poverty (measured as children in the first quintile) are, in turn, about 15 per cent more likely to be out of school (from 19 to 34 per cent comparing the third and fourth points). Girls living in rural areas, in poverty and with mothers that did not complete primary education are an additional six per cent more likely (from 34 to 40 per cent comparing the fourth and fifth points). From this analysis we find that in Yemen, there is a 32 per cent difference (from eight to 40 per cent) as the disadvantages accumulate from the most advantaged group[20] to the most disadvantaged group.

In Sudan, the cumulate risk gap of being out of primary school between the most advantaged and the most disadvantaged group is close to 58 per cent in Sudan. By comparing the two countries, we observe differences in both the magnitude and trajectory of the cumulate differences in the change of being out of school. The total gap is about 25 per cent points higher in Yemen than in Sudan. Furthermore, in Sudan, most of the variation is attributed to differences in mothers' schooling. The chances of being out of school at primary school age increases by 55 per cent between the daughters of uneducated mothers and the previous group of exclusion. This can be observed in the graph as the sharp increase between the fourth and fifth data point for Sudan.

The equivalent analysis for these two countries for children in lower secondary school age *(see Figure 4.16)* shows that the chances of being out of school in Yemen is similar to the dynamic observed among primary school age children. Every additional characteristic of exclusion adds to the cumulative value in a similar proportion. On the other hand, in Sudan, the mother's education is still the strongest driver of the observed differences between the most advantaged and the most disadvantaged group, representing 35 per cent of the 40 per cent gap. Mother's education has been shown by previous research to be an important driver in school participation and completion. However, the magnitude of this effect in Sudan might be linked to the coding mechanism in the survey that does not allow the separation of the mother's condition between uneducated and absent.

[20] The most advantaged group for the analysis is non-poor boys in urban areas with mothers who have completed at least primary school, as presented in the first value of the "x" axis.

Figure 4.17 Cumulative out-of-school risk related to combined characteristics, primary-school-age children, Group 2 countries



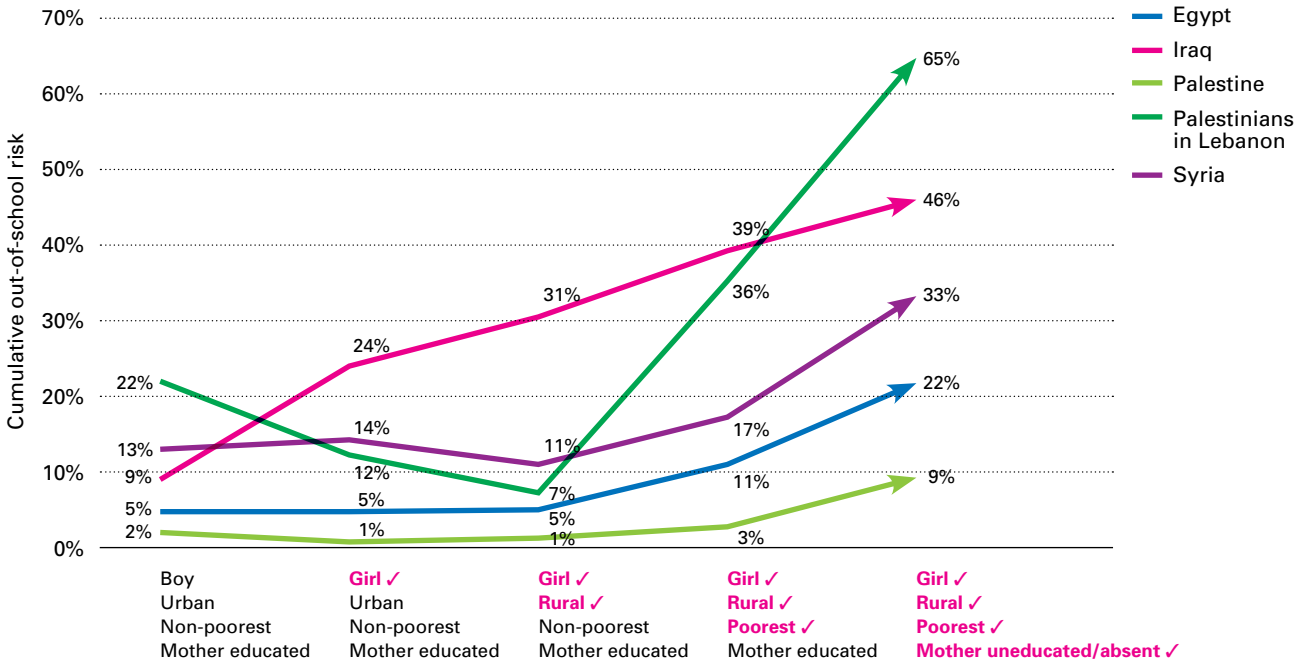
Source: Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006

Among primary-school-age children in Group 2 countries, we observe a smaller exclusion gap in the case of being out of school than in Group 1 countries. This can be attributed to the differences in income and to higher overall enrolment and school participation. The trends in the cumulative risk of being out of school in Group 2 show very different patterns. In Iraq, we observe that gender, living in rural areas, poverty and mother's education all contribute significantly towards the cumulate risk, while in Egypt, poverty and mother's education are the main characteristics increasing the cumulative chances of being out of school.

Girls are usually associated with higher levels of school exclusion. However, in a number of countries, females have higher rates of school completion than males *(see Figures 4.9 and 4.10)*. In some cases, being a girl implies no increase or a decrease in the chances of being out of school for both primary and lower secondary school age. This is the case in Palestine, pre-conflict Syria and for Palestinians in Lebanon *(see Figures 4.17 and 4.18)*. It is important to highlight that the patterns observed in Palestine and for Palestinians in Lebanon are highly influenced by the provision of education by the United Nations. A clear example of this is the negative effect of living in a rural area (camps are also considered as rural in our coding) with the cumulative chances of being out of school for both levels of education. This effect could be guided by the strong provision of education by the United Nations in rural areas/camps relative to urban areas. It is worth noting that mother's education is, in general, the main driver of the gap between the most advantaged and the most disadvantaged group. This could be due to not only the causal relevance of mother's schooling, but due to its association with other relevant unobserved characteristics, such as the value assigned to schooling and family wealth.

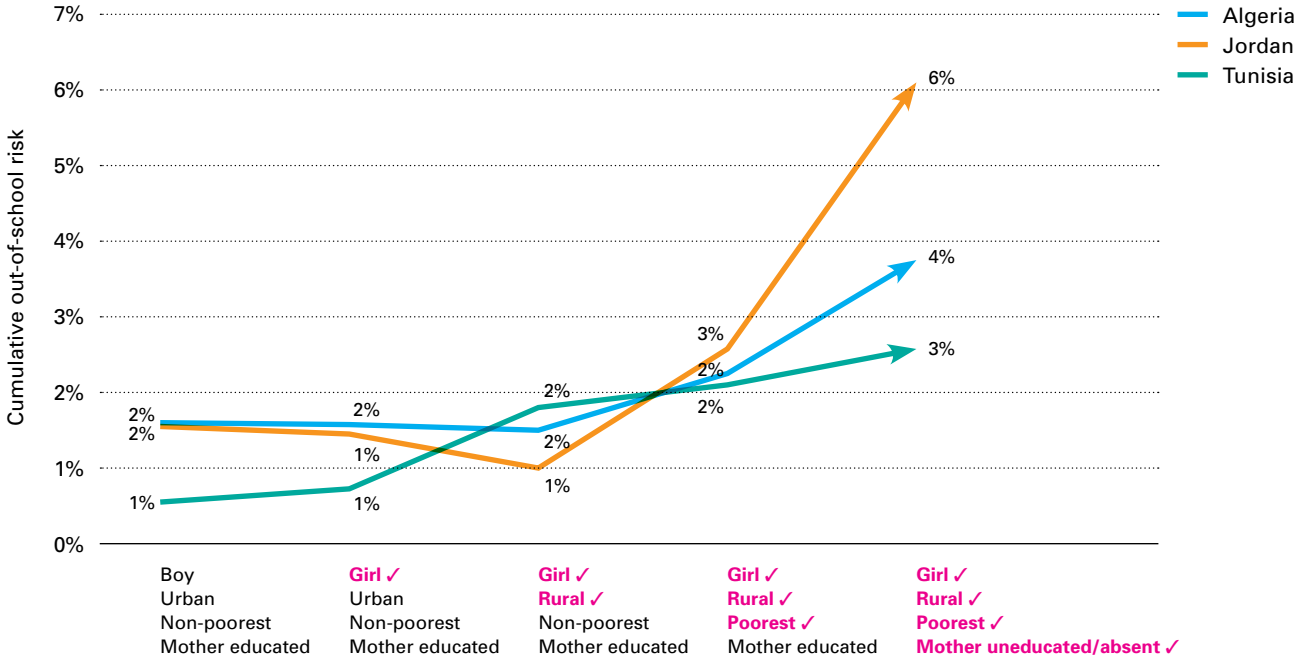
Figures 4.19 and 4.20 present the cumulative change in risk of being out of school for countries in Group 3. These countries have made more progress than Groups 1 and 2 towards universal access to primary education. This is reflected by the relatively low gap between the most advantaged group and the most disadvantaged group at the primary level *(see Figure 4.19)*. As countries progress towards universal enrolment, being out of school becomes less likely despite the potential disadvantages faced by the student, such as poverty. Gender does not play a meaningful role in the cumulative probability of being out of school at primary age in Algeria and Jordan *(see Figures 4.9 and 4.10)*. However, gender does increase the chances of being out of school in urban, non-poor settings in Tunisia. The gaps are larger at the lower secondary level *(see Figure 4.20)*, reflecting the progress still to be made to attain universal lower secondary schooling. In Jordan, the rural indicative implies a decrease in the chances of being out of school, likely due to an urban concentration of poverty. In Tunisia, being in a rural area is one of the main disadvantages for lower secondary schooling, as the supply for schools may be insufficient as students progress to higher grades.

Figure 4.18 Cumulative out-of-school risk related to combined characteristics, lower-secondary-school age children, Group 2 countries



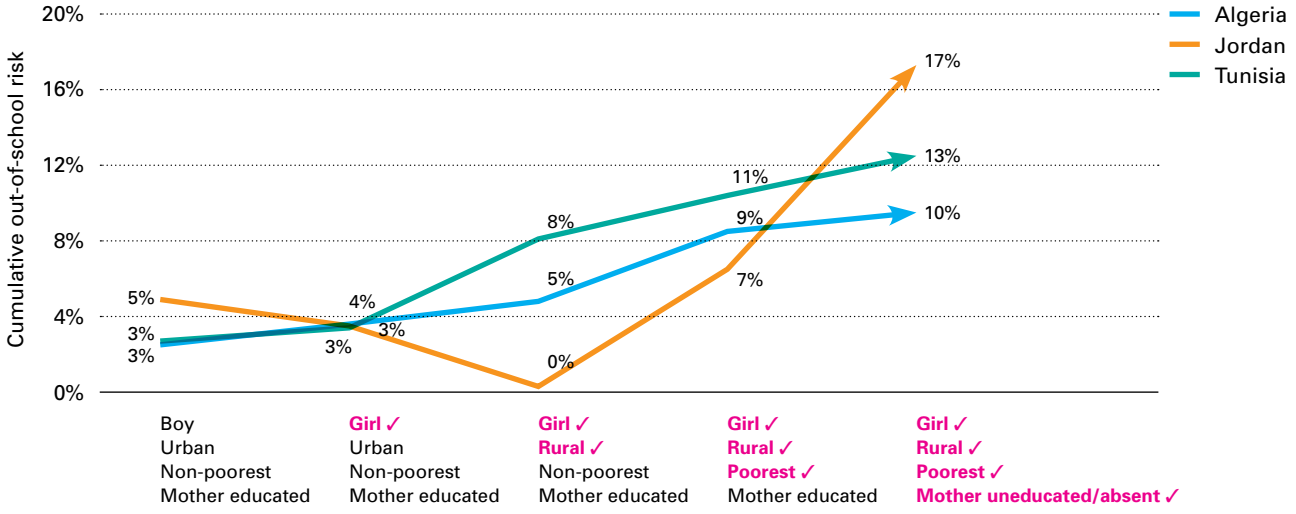
Source: Group 2: Egypt DHS 2014, Iraq MICS 2011, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Syria MICS 2006

Figure 4.19 Cumulative out-of-school risk related to combined characteristics, primary-school-age children, Group 3 countries



Source: Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

Figure 4.20 Cumulative out-of-school risk related to combined characteristics, lower-secondary-school-age children, Group 3 countries



Source: Group 3: Algeria MICS 2012, Iran (census 2006) IPUMS database, Jordan DHS 2012, Tunisia MICS 2011-12.

Describing the chances of being out of school based on the cumulate of characteristics associated with exclusion is a first approach towards a detailed parsing of the complicated barriers behind being out of school. While more research is needed, we found that among the cumulate factors associated with exclusion, mother's education is usually the single largest factor affecting the chances of being out of school between the most advantaged and disadvantaged group, especially for those of lower secondary age.

4.5 SUMMARY

This chapter explored different types of inequality in access and attainment across and within countries in the MENA region. It focuses on the countries for which comparable household survey or census data were available for Groups 1, 2 and 3 in the MENA country typology. This chapter shows that:

- There are very wide gaps indicative of inequalities related to household wealth, gender, location, and age in participation and completion of different educational cycles. These gaps are observed in the descriptive statistics and in the bivariate analysis. Gender gaps are narrower in the multivariate, cumulative analysis.
- In pre-primary and early childhood education, access is low in countries for which data is available and depends heavily on socioeconomic status.
- There are very large gaps in education attainment between the top and bottom 20 per cent of 15 to 19-year-olds in several countries. In Djibouti, Sudan and Yemen, the bottom 20 per cent have, on average, close to zero years of education, arising from the fact that most have never entered school, while the top 20 per cent have mostly completed secondary education (in line with other countries in the region).
- Children from poorer households consistently have worse access and attainment than richer ones in the countries studied here.
- Overall, children from rural areas are more likely to be educationally deprived than those from urban areas, although the effect of location varies across countries. In Egypt, Iran and Jordan, students with the lowest attainment are predominantly urban; in Djibouti, Sudan and Yemen, they are mainly rural. In Egypt, 40 per cent of young people from poor urban households leave school with less than six years of education.
- There are wide regional attainment disparities within countries. In Sudan and Yemen, the number of years in education in the district with the lowest attainment averages four years for 15 to 19-year-olds; in the highest attainment districts it is around nine years.

Most of the other eight countries, where data are available, have strong differences between administrative districts. This implies that location of birth and residence has a strong impact on the opportunity to enrol and progress through the education system. It is a source of inequality that advantages some and disadvantages others for reasons unrelated to capability.

- Although the region has made progress on gender parity, girls continue to have much worse access to primary and lower secondary school than boys in Djibouti, Iraq, Morocco and Yemen. In Saudi Arabia, Sudan and Tunisia, there is near parity at the primary level but girls' enrolment is substantially lower at the lower secondary level.

- In Djibouti, Egypt, Iraq, Palestine, Sudan and Yemen, more than 20 per cent of 15 to 19-year-olds have either left school with less than six years of education or never entered school. Those belonging to this group are predominantly from poor rural backgrounds and have parents who also did not reach high levels of education.

- The enrolment gap between the most disadvantaged group and the most advantaged is larger for countries with lower income and lower levels of net enrolment in both primary and secondary.

- Among the cumulate factors associated with exclusion, mother's education is usually the single largest factor affecting the chances of being out of school between the most disadvantaged group and the most advantaged, especially for those of lower secondary age. In Iraq and Yemen, gender still plays a crucial role for school attendance.

Chapter 5 extends the detailed analysis of inequality to consider inequalities in achievement based on standardized test scores.

5

CHARACTERISTICS OF CHILDREN WHO ARE LEARNING LESS AND LEARNING MORE

Unequal patterns of access to education are reflected in attainment and achievement. Increasingly, achievement is included to define meaningful access, since otherwise false signals are sent that enrolment results in worthwhile learning outcomes when too often it does not (Lewin, 2011). MENA countries in Groups 3 and 4 have near universal primary education and those in Group 4 have near universal lower secondary education *(see Section 3.1)*. However, this does not mean that all children are learning to an acceptable standard. Many children in Algeria, Iran, Kuwait, Morocco, Qatar, Tunisia, and Yemen are not achieving even the low international benchmark in mathematics (UNESCO, 2010). Wealthy countries, such as Kuwait and Qatar, score far below the levels in international assessments that would be predicted on the basis of their income (UNESCO, 2011). Early grade reading and mathematics assessments in a number of countries have found poor and unequal results. In Yemen, 27 per cent of Grade 3 students could not read a single word.

Several MENA countries adopted pedagogical reforms in the 1990s, aiming to move towards student-centred learning and competency-based curricula, with a focus on critical thinking. However, there seems to be little evidence at the system level of a shift away from traditional pedagogy, with the teacher standing at the front delivering didactic presentations involving little interaction or group

work and little consideration of differences among individual students. In the early grade assessments, teachers in Jordan and Morocco were observed pressing ahead with lessons in order to keep pace with the timetabled curriculum, rather than paying attention to students' individual needs. Basic skills that students had not yet mastered were neglected in favour of attempting to teach more advanced skills demanded by the curriculum (Messaoud-Galusi et al., 2012; Brombacher et al., 2012b).

In some cases, shortfalls in materials and infrastructure impede effective learning. One recent assessment in Iraq found that three quarters of the classrooms visited were in need of repair (Brombacher et al., 2012a). School resources had an important effect on students' performance in TIMSS 2007, although they were often less significant than the inequalities associated with poverty, employment and poor health (Bouhlila, 2013). Similarly, in early grade assessments in Morocco, both students' socioeconomic status and aspects of school life, such as school closure and head teacher absence, were strongly correlated with student test results (Messaoud-Galusi et al., 2012). In Yemen, students who reported missing school or arriving late during the previous week, who had fewer opportunities to practice reading, and who did not receive corrective feedback from teachers, had worse reading performance than students who were not in these categories (Collins and Messaoud-Galusi, 2012). A survey and test results from students in five major cities (Abu Dhabi, Amman, Dubai, Rabat and Sana'a) in the region (UNDP, 2012) suggest that there have been shortfalls in catching up students for lost time on tasks due to absent teachers and in providing support to teachers to help students overcome difficulties.

Unsatisfactory learning outcomes can also be seen in terms of persistent low adult literacy rates. In 2003, one fifth of adults in the region were still illiterate. More recent data (UNESCO, 2012) reveal adult illiteracy rates of 44 per cent in Morocco and 36 per cent in Yemen. There were large gender gaps in literacy; for example, the illiteracy rate in Algeria was 20 per cent for men but almost 40 per cent for women. Overall, 15 per cent of men and 30 per cent of women in the region were illiterate (based on data for every country except Djibouti and Lebanon). The gender gap has been closing but full convergence remains a long way off (World Bank, 2008). Although literacy rates are improving, population growth has meant that the absolute number of illiterate adults has continued to grow since the 1980s (UNESCO, 2011).

This chapter examines inequalities in learning outcomes between and within countries in the MENA region by analysing differences in outcomes by gender, age, school characteristics and home background, before developing and applying an indicator of the total inequality within each country. This indicator is the range in test results between the top and bottom 20 per cent of scores, as these are easily understood and cross national data are readily available. This chapter uses data from TIMSS, an international assessment of mathematics and science at Grades 4 and 8, that have been conducted by the International Association for the Evaluation of Educational Achievement (IEA) every four years since 1995. TIMSS has covered a steadily growing number of countries in different regions, including an increasing number of MENA countries.

This chapter focuses on the 12 countries for which Grade 8 data are available from TIMSS 2011 (Bahrain, Iran, Jordan, Lebanon, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Syria, Tunisia and the United Arab Emirates). Unfortunately, the Group 1 countries – Yemen, Djibouti and Sudan – which have the lowest enrolment rates – lack TIMSS data for Grade 8. TIMSS 2007 data are also used to measure change over time, and Grade 4 data are used to examine the relationship between pre-primary attendance and learning outcomes at Grade 4. For ease of analysis, the report focuses mostly on mathematics scores. In most cases, similar patterns can be obtained using science scores, although the scores for science are on average somewhat higher.

TIMSS results are designed to be interpreted in relation to international benchmarks. A score of 400 is the 'low' benchmark, 475 is 'intermediate', 550 is 'high' and 625 is 'advanced' *(see Table 5.1)*. The average student is below the intermediate benchmark in maths and science in all 12 MENA countries. In four countries (Morocco, Oman, Saudi Arabia and Syria), the average student does not reach the low benchmark in maths, and in one country (Morocco), the average score is below the low benchmark in science. In other words, by Grade 8, most students in the region have some basic knowledge of mathematics and science, but are mostly unable to apply this in straightforward practical situations. Most students fail to exhibit higher-level cognitive thinking skills.

Table 5.1 Meaning of international benchmarks in TIMSS 2011

Benchmark	Brief description	
	Mathematics	Science
Low (400)	Students have some basic mathematical knowledge.	Students show some elementary knowledge of life, physical and earth sciences.
Intermediate (475)	Students can apply basic mathematical knowledge in straightforward situations.	Students have basic knowledge and understanding of practical situations in the sciences.
High (550)	Students can apply their knowledge and understanding to solve problems.	Students apply their knowledge and understanding of the sciences to explain phenomena in everyday and abstract contexts.
Advanced (625)	Students can organize information, make generalizations, solve non-routine problems, and draw and justify conclusion from data.	Students apply knowledge and understanding of scientific processes and relationships and show some knowledge of the process of scientific enquiry.

Sources: Mullis et al. (2012); Martin et al. (2012).

The analysis of inequalities in achievement, using TIMSS data from 2011, has to be seen with forms of inequalities. The key research questions are: What levels of achievement are being reached, and how do these differ for different populations of children, and to what extent do patterns of inequalities in learning outcomes mirror or differ from patterns of physical access to education as indicated by enrolments?

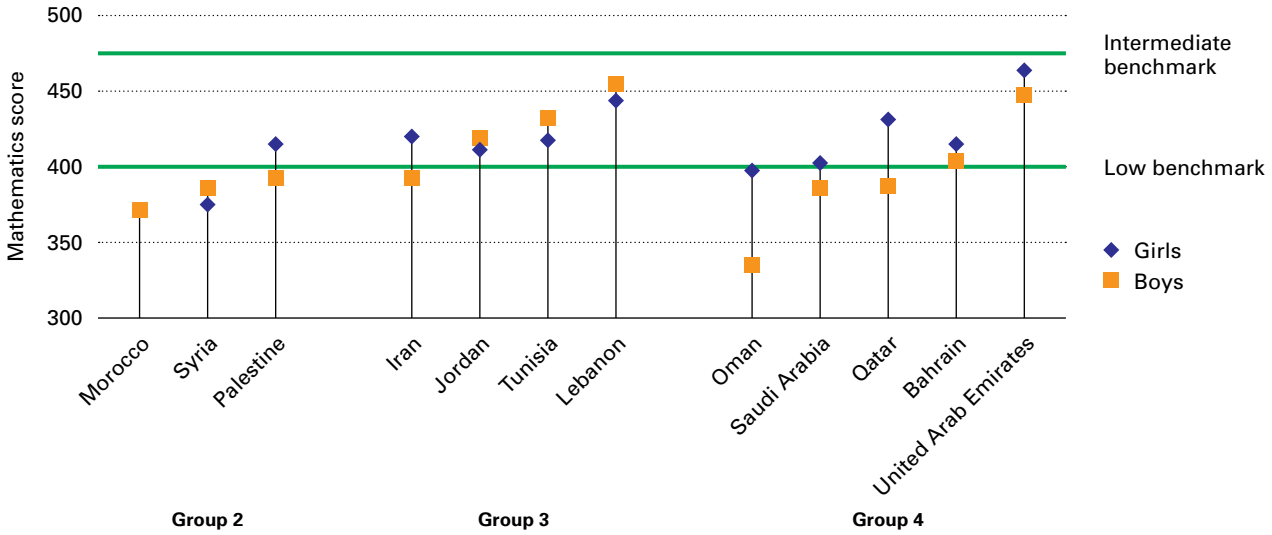
Some of the patterns that appear using available assessment data may differ due to a 'selection bias'. Students who are still in school at Grade 4 or 8 are more likely to be drawn from middle and high-income households with the most cultural capital and tend to have better learning outcomes than the general population. Independent of socioeconomic effects, more capable children are also more likely to persist in school than children with very poor achievement. Selection effects need to be kept in mind when interpreting results and especially when making comparisons between high-enrolment and low-enrolment countries. The bias is likely to be strongest in low-enrolment countries with relatively high rates of students dropping out. Moreover, for high-enrolment countries, high repetition rates can further complicate the interpretation of Grade 8 scores, as it should be the scores for non-repeaters that can honestly reflect a country's schooling quality.

5.1 GENDER AND AGE DIFFERENCES IN MATHEMATICS AND SCIENCE SCORES

Learning outcomes in mathematics and science are generally low in most MENA countries when compared to countries in other regions and to the international benchmarks *(see Figures 5.1 and 5.2)*. Average Grade 8 test results from the 2011 TIMSS confirm the findings of previous studies. In mathematics, the average student in each of these countries falls short of the intermediate international benchmark, and in Morocco, Syria, Oman, and Saudi Arabia, the average student does not even meet the low international benchmark. The results are better in science, with most countries reaching the low benchmark; however, in no country does the average student meet the intermediate benchmark.

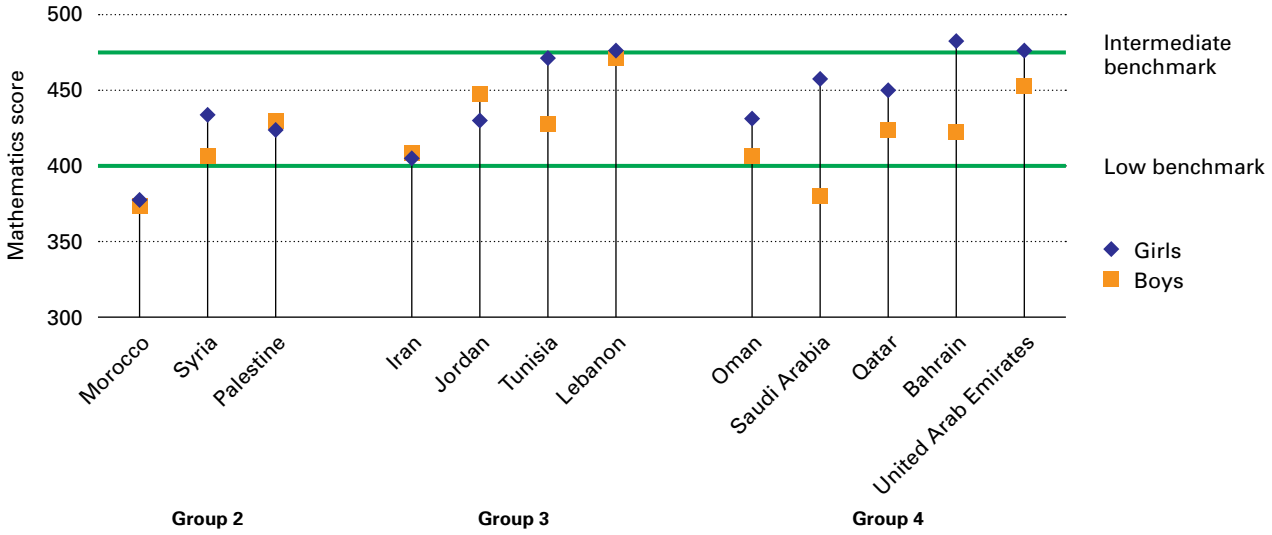
The average results do not relate closely to the typology of countries used in this study. In mathematics, high-enrolment countries such as Oman and Saudi Arabia have particularly low test scores, while the United Arab Emirates and the Group 3 country Lebanon have the highest scores. Similarly in science, there is little systematic variation across the groups. As noted above, learning assessments exclude children

Figure 5.1 TIMSS Grade 8 mathematics scores, by gender, by country groups



Source: TIMSS 2011.

Figure 5.2 TIMSS Grade 8 science scores, by gender, by country groups



Source: TIMSS 2011.

who are not in school, and the children who remain in school in low-enrolment countries are likely to be among the highest achievers. There is consequently no automatic relationship between enrolment rates and learning outcomes among students in school. Furthermore, within the region, there is little apparent relationship between national overall income levels and learning outcomes.

In Bahrain, Jordan, Oman, Palestine, Saudi Arabia and the United Arab Emirates, there are gender gaps in favour of girls that appear in both mathematics and science results. In Oman, the difference is striking; 49 per cent of girls but only 28 per cent of boys are reaching the low international benchmark in mathematics; in science, 74 per cent of girls and 44 per cent of boys are reaching the low international benchmark. There is possible evidence for a gender gap in favour of boys for both mathematics and science in Lebanon, Syria and Tunisia, and for mathematics only in Iran, but the differences are small in these cases and are not significant in some cases.

Table 5.2 Percentage of Grade 8 students reaching the TIMSS low international benchmark (400) in mathematics and science, by country groups

Group	Country	Mathematics (%)			Science (%)		
		Girls	Boys	Total	Girls	Boys	Total
2	Morocco	35.7	35.7	35.7	39.9	38.1	39.0
	Palestine	57.1	47.1	52.3	65.2	53.4	59.5
	Syria	40.6	45.2	42.9	62.1	64.0	63.1
3	Lebanon	71.5	75.4	73.3	52.9	54.3	53.5
	Iran	53.9	55.4	54.7	80.5	77.4	78.9
	Jordan	59.9	49.6	54.6	80.7	63.5	71.8
	Tunisia	57.0	66.3	61.5	67.4	76.3	71.6
4	Bahrain	63.7	43.4	53.5	82.9	57.9	70.3
	Oman	49.1	28.2	38.9	74.4	43.8	59.4
	Qatar	56.3	51.3	53.7	62.8	53.1	57.9
	Saudi Arabia	50.2	43.7	46.8	75.3	60.3	67.6
	United Arab Emirates	78.3	68.0	73.1	81.1	68.5	74.8

Source: TIMSS 2011.

The low average results can be explained through large numbers of students failing to reach the low international benchmark *(see Table 5.2)*. In mathematics, around three-quarters of the students in Lebanon and the United Arab Emirates reach the low benchmark, but in other countries, the proportions are much lower. In Bahrain, Iran, Jordan, Palestine, Qatar and Saudi Arabia, around half reach the benchmark, and in Morocco it is only one third. In science, more than 70 per cent reach the benchmark in Bahrain, Iran, Jordan, Tunisia and the United Arab Emirates, but results in Morocco (39 per cent) and Lebanon (54 per cent) are much lower.

There is substantial variation in the age of Grade 8 students in some of the countries, as can be seen on a plot of the oldest and youngest students and interquartile range[21] *(see Figure 5.3)*. There might be some measurement error with children as young as nine years and as old as 19 years being recorded in TIMSS. Even ignoring these outliers, Lebanon, Morocco, and Tunisia appear to have particularly high dispersion of ages within Grade 8, confirming high rates of overage enrolment and repetition found in administrative data for these countries *(see Appendix A, Table A.4 and Table A.5)*. The fact that there are high rates of repetition in these countries suggest that the variation in ages can be explained mainly as the result of pupils being prevented from progressing through the grades, rather than the result of children starting school overage. The variation in age bears little relation to the country's overall status in education, as indicated by the group it belongs to in the typology.

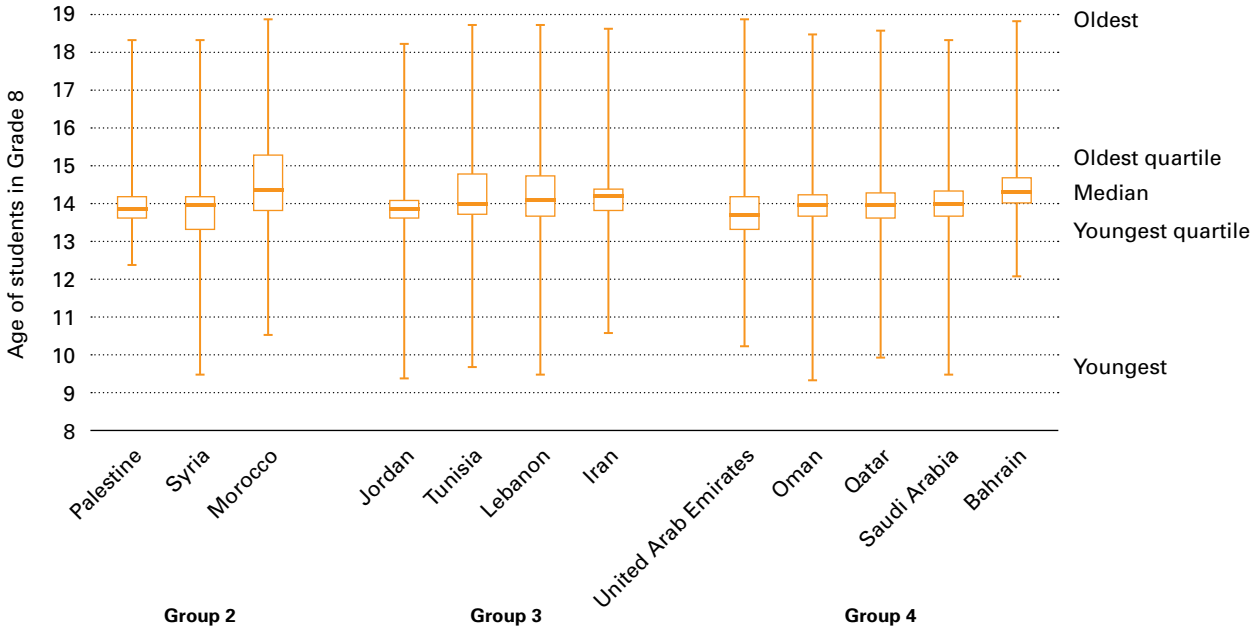
The likelihood of being older than the average in Grade 8 in each country is correlated with household background characteristics such as wealth. The correlation is strongest in the countries where there is widest dispersion of age by grade – Lebanon, Morocco and Tunisia *(See Figure 5.4)*. This is consistent with children from poorer backgrounds being held back because their parents are less able to help them with school work or less able to pay for resources such as private tuition. It may also be because there are opportunity costs for remaining in school that are more significant for poor households.

The older students in each country consistently have lower average scores than those who are at the median age or younger in their country, and the differences are large *(see Figure 5.5)*.[22] In all of the countries except Lebanon, older students score below the low international benchmark of 400, while students who are the average age or younger score above the benchmark in all countries except Morocco, Oman and Syria. The direction of cause and effect is difficult to

[21] The interquartile range is a measure of statistical dispersion. It is obtained by trimming the highest 25 per cent and lowest 25 per cent of a series of values (which may be outliers), then calculating the difference between the highest remaining value and the lowest remaining value.

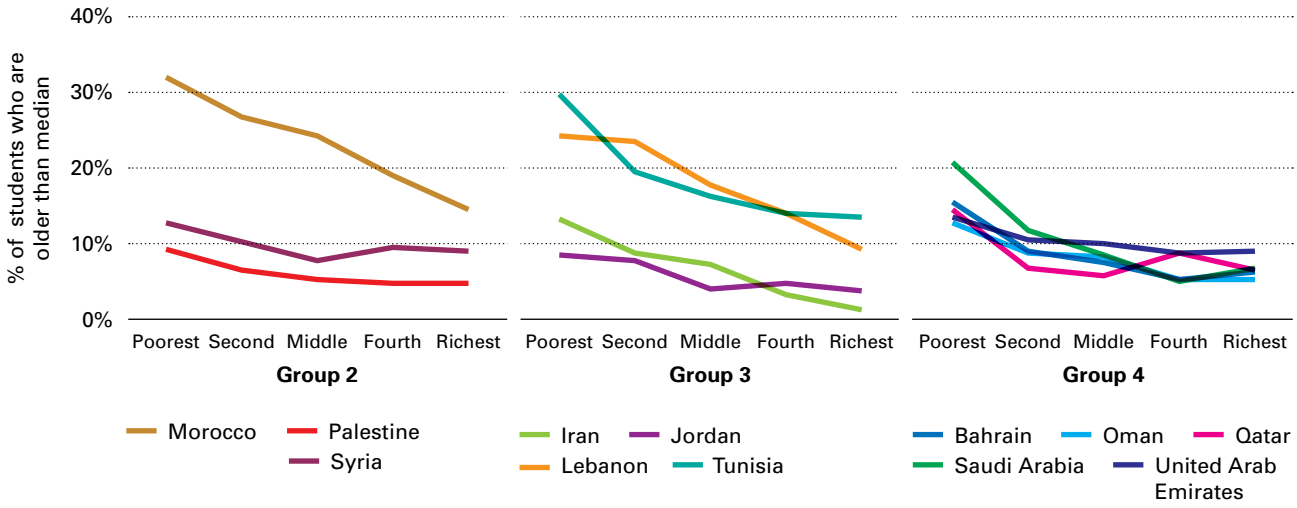
[22] This confirms findings from other studies, i.e., Lewin, Wasanga et al 2012, which showed that in a population of 800,000 children, the average grade point average deteriorated by 6 per cent for every year a child was overage.

Figure 5.3 Range of students' ages in Grade 8 in the TIMSS sample, by country groups



Source: TIMSS 2011.

Figure 5.4 Percentage of students older than the median for Grade 8, by wealth quintile, by country groups

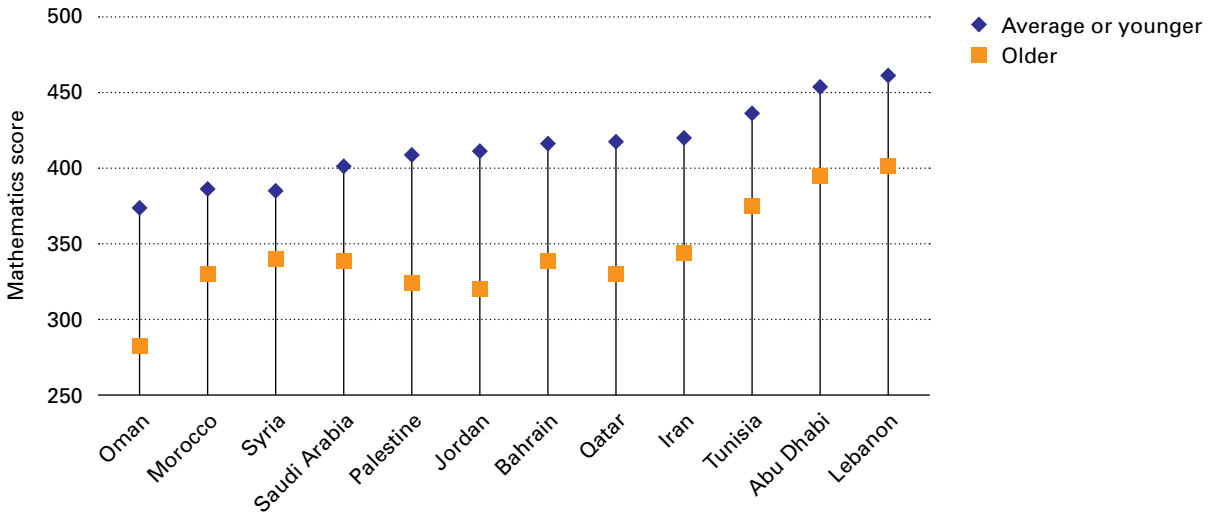


Source: TIMSS 2011.

disentangle here, but the pattern is consistent with students from poorer households receiving less support for their learning and being otherwise disadvantaged. Consequently, these children face both a higher risk of repetition and worse learning outcomes. This is especially so in countries where grade progression is conditional on passing tests, and where students are made to repeat if they fail to do so.

The difference in scores between overage students and students at the age appropriate (or younger) for the grade is highest in countries such as Jordan, Oman and Palestine, where it is relatively rare for students to be overage. In Oman, for example, the average older student scores only 282, while average age or younger students score 374. In these countries, being overage may be a particular and unusual marker of disadvantage or a signifier of some kinds of disabilities, or of particular kinds of social exclusion resulting in delayed progress through the education system.

Figure 5.5 TIMSS Grade 8 mathematics scores, by age status (average or younger/older) by country



Note: 'Older' students are those who are more than one year above the median age for the TIMSS Grade 8 sample in each country.
Source: TIMSS 2011.

5.2 SCHOOL CHARACTERISTICS AND LEARNING OUTCOMES

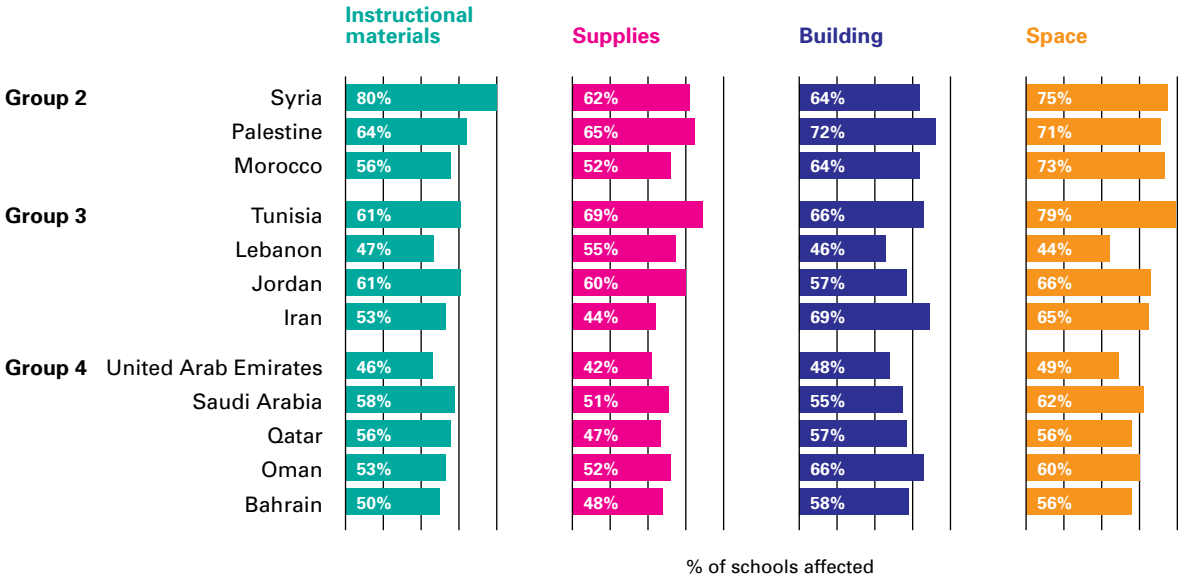
As part of the TIMSS study, principals were asked how much each school's capacity to provide instruction is affected by a shortage or inadequacy of a number of different resources, including instructional materials (e.g., textbooks), supplies (e.g., paper, pencils), the school building and grounds, and instructional space (e.g., classrooms). Very large proportions said that their schools were affected by these issues, with a lack of instructional space being perhaps the biggest concern overall *(see Figure 5.6)*. There was no obvious relationship between the likelihood of perceived shortfalls in resources and the educational status of the country, suggesting that, often, such judgements were, in part, subjective to the principal's expectation and comparative to a regional sample rather than being made against regional standards. In Lebanon and the United Arab Emirates, the proportions were low, with fewer than half of principals saying their schools were affected by shortfalls in instructional materials, building, or space. By contrast, in pre-conflict Syria, over three-quarters claimed they were affected by shortfalls in instructional materials or space. Such differences are likely to reflect the principals' expectations as well as absolute conditions in the schools. The results, nevertheless, suggest that there are widespread problems in disbursing funds or delivering resources to schools in the quantities that their principals believe are needed.

Correlations between these perceived shortages and the socioeconomic background of students in the school were modest and in some countries negative; that is, principals of schools with richer students were more negative about their school's capacity to provide instruction. It is likely that these principals have higher expectations of what a school should be able to provide and were therefore more likely to see their own schools as inadequate.

In several countries, test scores were noticeably lower in schools affected by these shortages or inadequacies, compared to those not affected *(see Figure 5.7)*. In Lebanon and the United Arab Emirates, mathematics scores were around five per cent lower in schools that had some form of shortfall in resources, building or space. In Bahrain and Qatar, the gap between schools with a shortfall and those without was closer to 10 per cent. Of the remaining eight countries, the gaps were more muted in most cases; Tunisia is an exceptional case where schools with principals complaining of shortfalls had slightly higher test scores than other schools.

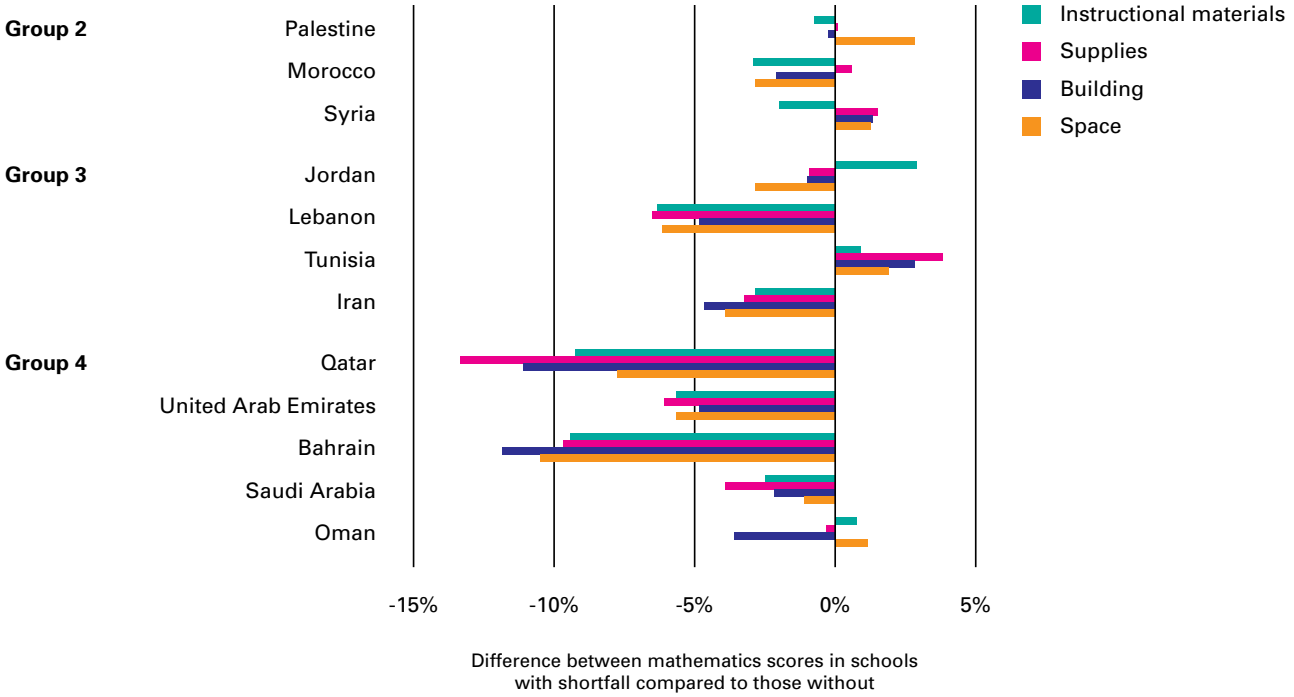
Using a combined index of the different resources listed in the survey for science and mathematics, the schools that were not affected by shortages according to the principal often had high proportions achieving the international

Figure 5.6 Percentage of principals who said schools were affected ('some' or 'a lot') by shortage or inadequacy in various resources, by country groups



Source: TIMSS 2011.

Figure 5.7 Difference in TIMSS Grade 8 mathematics scores in schools affected by each shortage or inadequacy, compared to those not affected, by country group



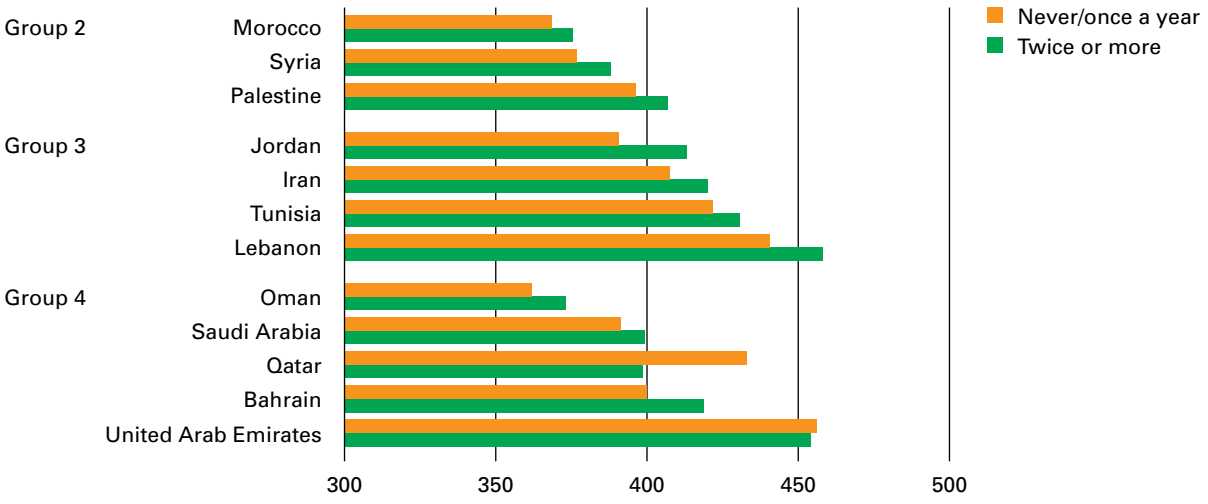
Source: TIMSS 2011.

Table 5.3 Percentage of Grade 8 students achieving above the TIMSS low international benchmark in science and mathematics, according to shortages of resources in each subject, by country

Country	Science (%)			Mathematics (%)		
	Not affected	Somewhat affected	Highly affected	Not affected	Somewhat affected	Highly affected
Bahrain	92.3	66.4	70.6	86.1	49.4	44.3
Iran	93.8	79.3	71.5	81.3	54.9	46.0
Jordan	79.0	70.3	76.7	61.5	52.9	59.7
Lebanon	73.4	46.3	69.7	89.5	67.6	83.7
Morocco	65.3	36.9	77.6	63.7	33.7	80.1
Oman	70.5	57.0	66.2	51.7	37.2	37.1
Palestine	60.7	58.9	67.4	53.3	51.8	59.9
Qatar	61.9	68.2	44.9	57.4	68.5	37.5
Saudi Arabia	58.2	68.4	71.2	43.2	46.8	50.5
Syria	85.9	62.1	71.1	68.7	42.5	40.3
Tunisia	64.4	71.9	67.7	54.3	61.8	66.2
United Arab Emirates	83.2	72.0	71.0	81.6	70.0	67.2

Source: TIMSS 2011.

Figure 5.8 TIMSS Grade 8 mathematics scores in schools that asked parents to volunteer at school versus those that did not, by country groups



Source: TIMSS 2011.

benchmarks *(see Table 5.3)*. In Bahrain, Iran and Syria, over 85 per cent of students in schools not affected by shortages for science achieved the low international benchmark, compared to around 70 per cent of those in schools that were highly affected. The pattern is not completely consistent across countries. In Tunisia, students in non-affected schools had lower mathematics results than those in highly affected schools. This may reflect the tendency for some principals of schools with students from wealthier families to rate their schools poorly in terms of resources.

Achievement is also partly a function of parental support and the TIMSS data give some insight into the extent of this relationship. Reported parental participation in the schools can be related to test results using descriptive statistics that do not necessarily demonstrate a causal link *(see Figure 5.8)*. In most of the countries, mathematics scores were marginally higher in schools that asked parents to volunteer for activities such as trips or projects. In Lebanon, for example, the average score was 458 at schools where parents were asked to volunteer twice or more a year, compared to 440 at schools where they were never asked or only asked once a year. An exception is Qatar, where scores were higher in schools where parents were not asked to volunteer. Assuming this is a real effect, the explanation of this counter intuitive result requires country-level empirical enquiry.

5.3 HOME BACKGROUND AND LEARNING OUTCOMES

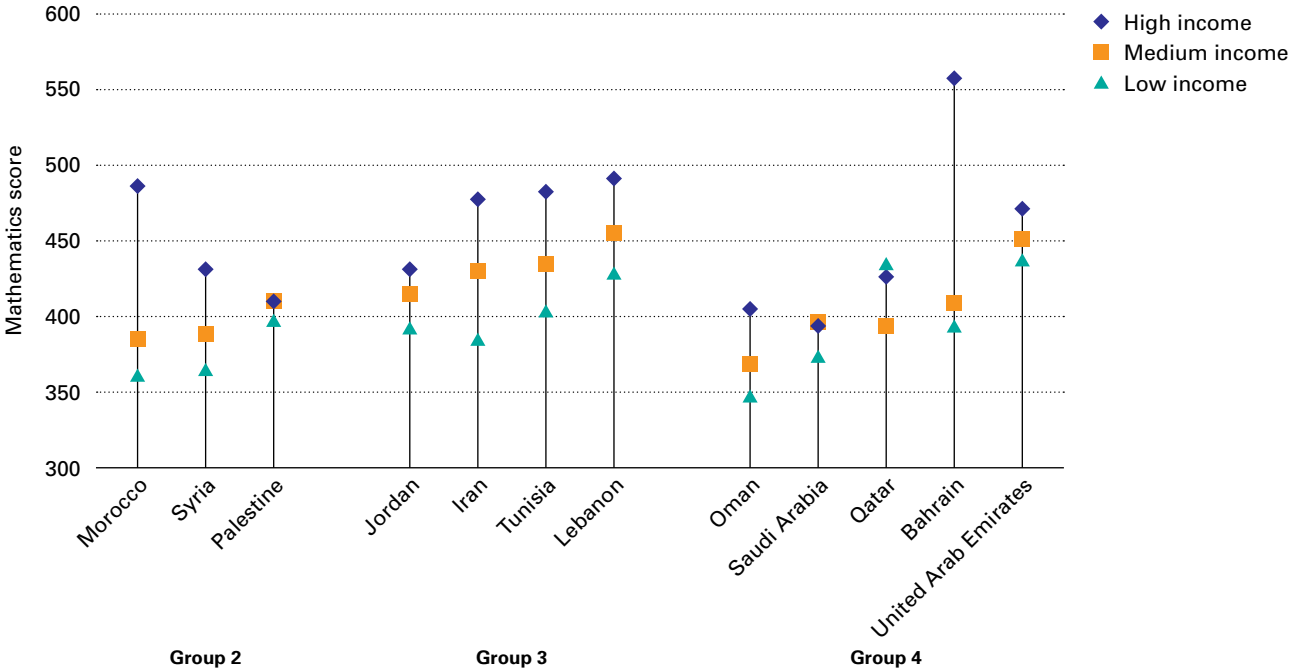
The TIMSS 2011 data sets reveal large inequalities in learning between students from high and low-income households *(see Figure 5.9)*. Not only does household income make a large difference in the likelihood of attending school and reaching a high grade, it also affects learning achievement. In Bahrain and Morocco in particular, there were much higher test scores in areas perceived to have high incomes. In these two countries, plus Iran, Lebanon and Tunisia, students in high-income areas exceeded the intermediate international benchmark. By contrast, students from low-income areas were, on average, below the low international benchmark in every country except Lebanon, Tunisia and the United Arab Emirates.

Even in countries with high and more equitable enrolment patterns, inequality is often visible in terms of learning outcomes *(see Figure 5.10)*. In Jordan, only 42 per cent of students from the poorest households are achieving the low benchmark in mathematics, compared to 68 per cent from the richest households. Boys from the poorest 20 per cent of households are particularly being left behind in Bahrain, Jordan, Oman and Saudi Arabia. In Iran, Lebanon and Morocco, girls are disadvantaged among the poorest households, but this gender gap is reversed among the richest, suggesting a complex interaction between social, cultural and economic factors when determining gender inequalities in learning outcomes.

In most countries, there is an urban advantage for performance on TIMSS *(see Figure 5.11)*. The exceptions are Bahrain, Palestine and Qatar. Section 4.3 of this study found that, in Iran, there were more young people completing basic education in rural than urban areas. The TIMSS results, however, show that learning outcomes in mathematics among those who reach Grade 8 are much higher in big cities than in small towns or rural areas, with a gap in test results of over 50 points. In the United Arab Emirates, students in small towns or rural areas barely pass the low international benchmark, while those in larger cities are approaching the intermediate benchmark.

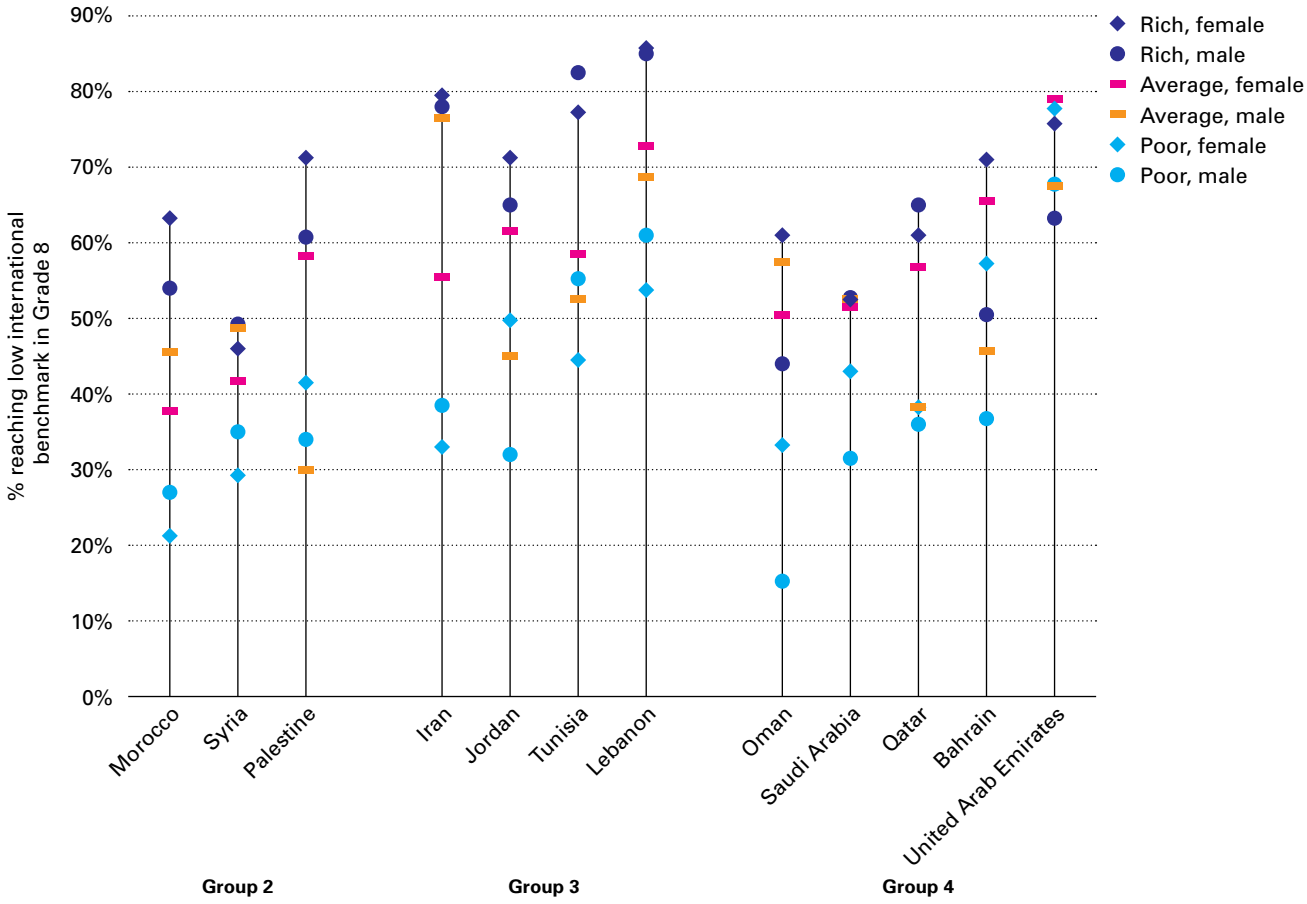
Learning outcomes vary strongly by the level of education attained by the child's mother *(see Figure 5.12)*. Even among children whose mothers have higher education, over 30 per cent fail to reach the low international benchmark in Group 2 countries as well as in Jordan, Oman,

Figure 5.9 TIMSS Grade 8 mathematics scores by income level, by country groups



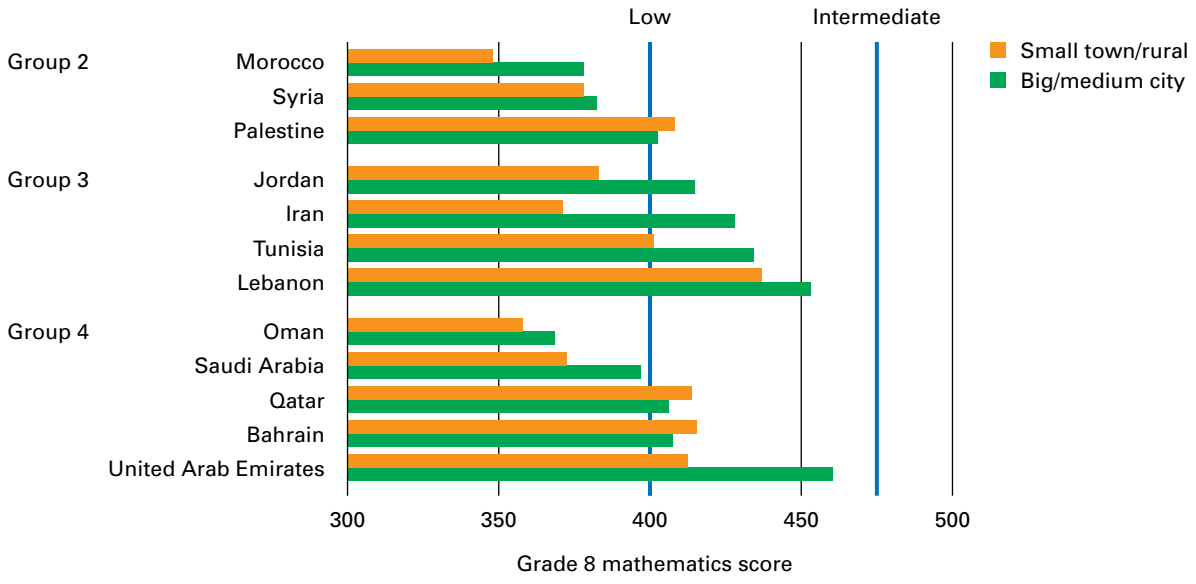
Note. The variable used is whether the area around the school is, in the view of the school principal, a high-, medium- or low-income area.
Source: TIMSS 2011.

Figure 5.10 Percentage of students reaching the TIMSS low international benchmark (400) in mathematics in Grade 8, by gender and wealth, by country groups



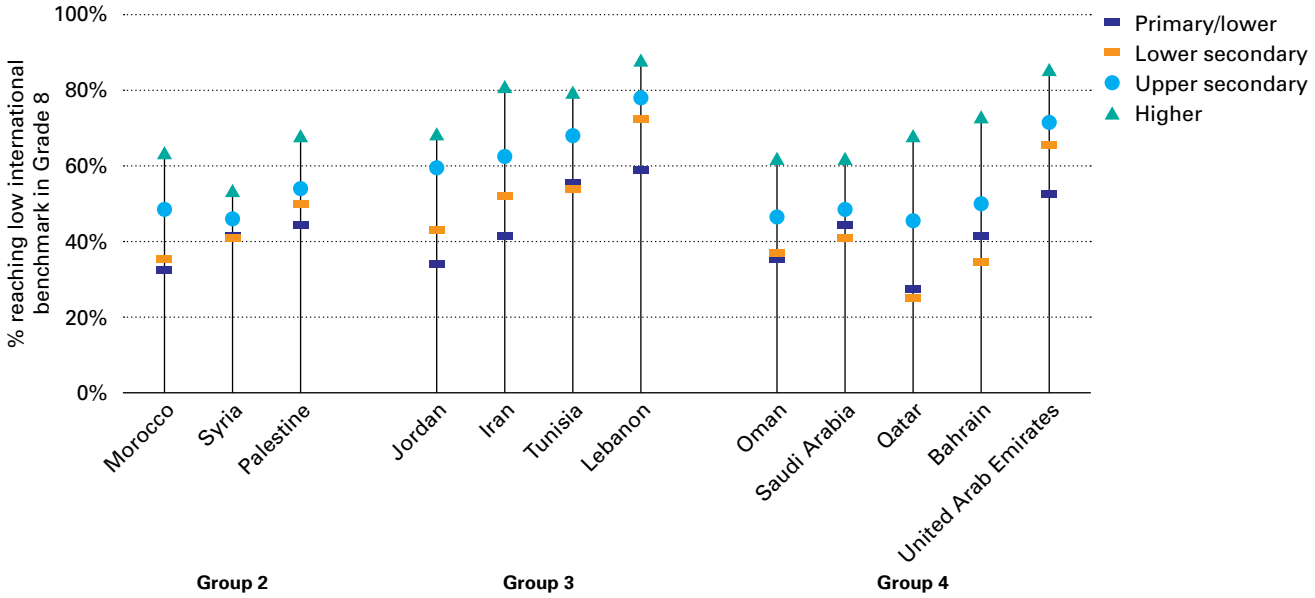
Note. The variable used is a wealth index based on household assets, constructed as an alternate measure of socioeconomic status.
Source: TIMSS 2011.

Figure 5.11 TIMSS Grade 8 mathematics scores by location (rural/urban), by country groups



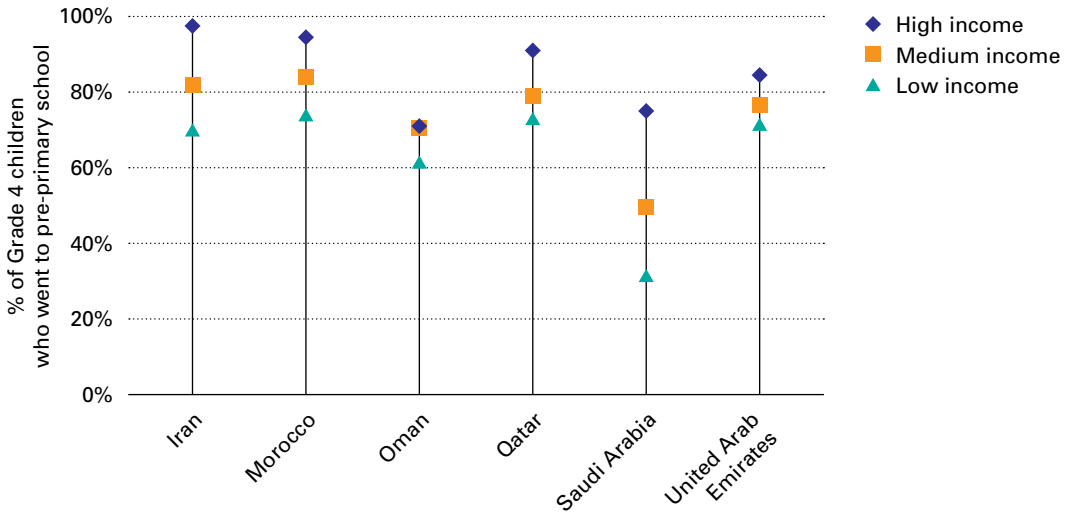
Source: TIMSS 2011.

Figure 5.12 Percentage of Grade 8 reaching the TIMSS low international benchmark in mathematics, by mother's education, by country groups



Source: TIMSS 2011.

Figure 5.13 Pre-primary school attendance of TIMSS Grade 4 students by income level, by country

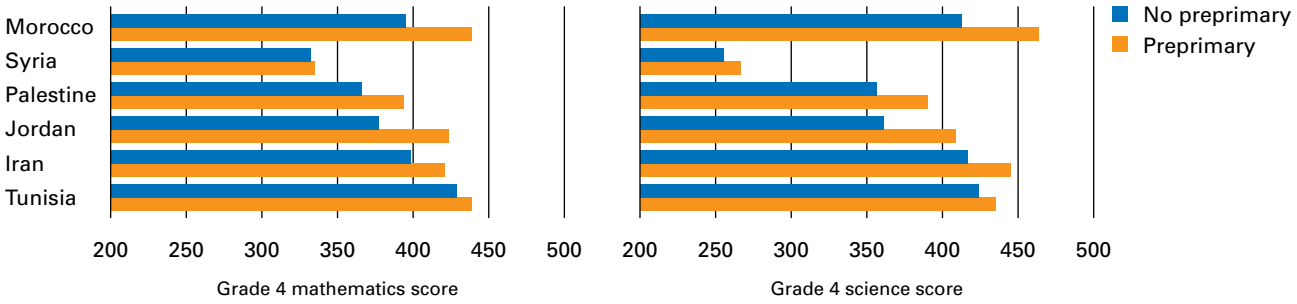


Source: TIMSS 2011.

Qatar and Saudi Arabia. The proportion reaching the benchmark is much lower still for children whose mothers only have primary or lower secondary education. In Iran, the likelihood of reaching the low international benchmark in mathematics doubles for children of mothers with higher education. In Morocco, the low international benchmark is reached by only one third of children whose mothers have lower secondary education or less, compared to around half of children whose mothers have upper secondary education and nearly two-thirds of children whose mothers have higher education. Similar results are obtained for both mathematics and science, regardless of whether the father's or mother's education is used. Other aspects of home background, such as whether the language of the test is spoken at home, in some cases have large effects on test results, particularly in science *(see Appendix A, Figure A.1 and A.2)*.

For some of the TIMSS countries, there is information on whether children who are now in Grade 4 went to pre-primary school. Disaggregating this by the income level of the area around the school *(see Figure 5.13)* indicates some substantial inequalities in pre-

Figure 5.14 TIMSS Grade 4 mathematics and science scores according to whether students went to pre-primary school, by country



Source: TIMSS 2011.

primary attendance. In Saudi Arabia, only around 30 per cent of children from low-income areas went to pre-primary school, but close to 80 per cent of children from high-income areas attended. In Iran, nearly all children in high-income areas attend pre-primary but only around 70 per cent of those in low-income areas. This pattern of attendance is likely to reflect costs of private provision and other barriers to access to pre-primary that disproportionately hit the poorest households.

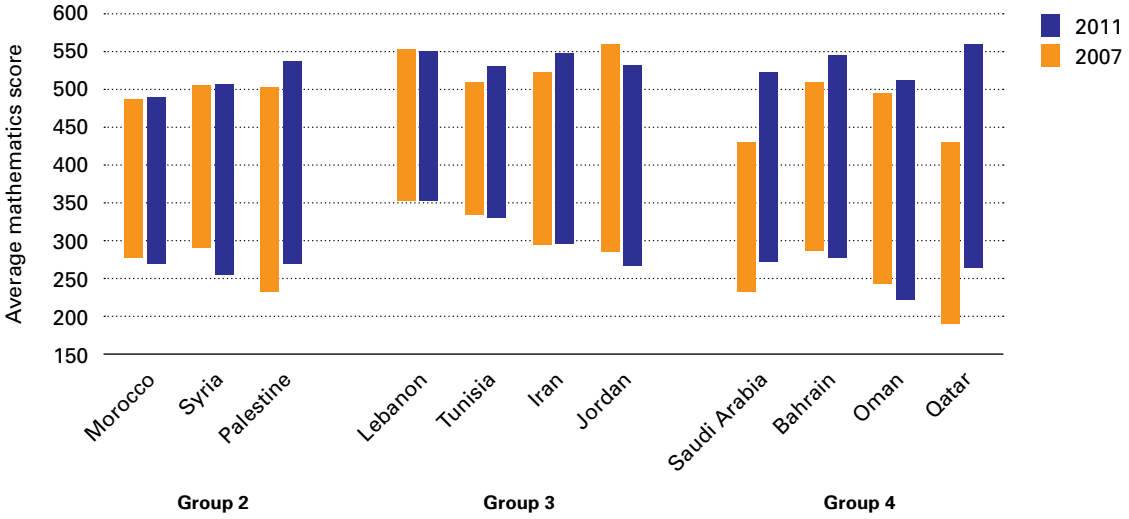
Children who did attend pre-primary school appear to have an advantage in both mathematics and science scores *(see Figure 5.14)*. The difference is particularly large in Iran, Oman and Qatar. In Iran and Qatar, there is roughly a 50 point difference in both mathematics and science scores at Grade 4 between those who went to pre-primary and those who did not. This is not sufficient to establish a causal link from pre-primary to better learning; there are many other reasons why children who attend pre-primary, and are generally from wealthier households, could be learning more. Howerer, it is consistent with evidence elsewhere that pre-primary education can help ensure readiness for primary school and improve learning outcomes, suggesting that access to pre-primary could be one of the mediating factors through which inequalities by income or wealth can translate into inequalities in learning. Longitudinal studies in the region are needed to establish the strength of effects.

5.4 TOTAL INEQUALITY AND CHANGE OVER TIME

The inequality in learning outcomes within countries is particularly visible in comparisons of the Grade 8 mathematics scores for the top and bottom 20 per cent of scorers *(see Figure 5.15)*. In Bahrain, Iran, Jordan, Lebanon, Palestine and Qatar, the top 20 per cent (represented by the tops of the bars) are scoring close to the high international benchmark (550). In a few countries where this group of high scorers performed relatively weakly in 2007 – Palestine, Qatar and Saudi Arabia – mathematics scores improved dramatically in 2011. By contrast, there has been little change in the average scores of the bottom 20 per cent (represented by the bottoms of the bars). In Morocco, Oman and Syria, the lowest-scoring group appears to have fallen further behind over time. In no case is the bottom 20 per cent reaching even the low international benchmark (400); at least one fifth of the population of every country who completes eight years of school are failing to attain basic mathematical knowledge, and there is no evidence of improvement in this situation.

This study uses a simple indicator of the gap (absolute difference) between the average score of the top 20 per cent of scorers and the bottom 20 per cent as a measure of inequality (similar to Micklewright and Schnepf, 2006).

Figure 5.15 Range of average TIMSS Grade 8 mathematics scores for the top 20 per cent and bottom 20 per cent scorers, in 2007 and 2011, by country groups



Source: TIMSS 2007 and 2011

Using this measure for mathematics, inequality has declined between 2007 and 2011 in Jordan, Lebanon and Palestine, but on a negligible scale. On the other hand, inequality has increased in all of the other countries *(see Figure 5.16)*. In Saudi Arabia, for example, the gap between the bottom and top 20 per cent in 2007 was under 200 points; in 2011 it was almost 250.

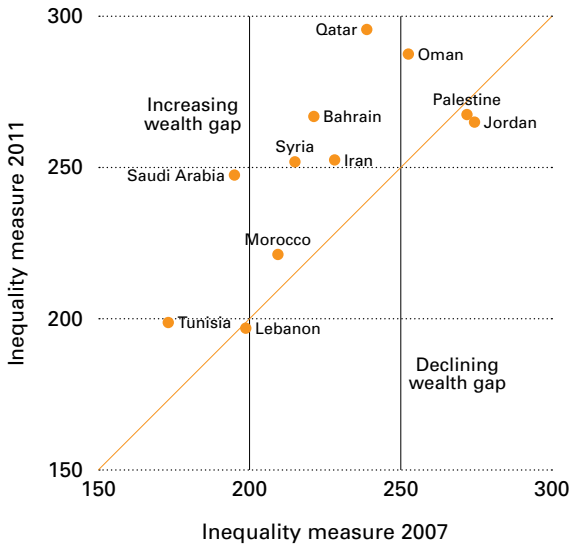
For science scores in Grade 8, inequality has declined in only Palestine and Qatar *(see Figure 5.17)*. Jordan, Lebanon and Oman all had gaps of around 260 points in 2007. In 2011, Lebanon had roughly the same level of inequality in science outcomes, whereas in Jordan the gap had increased to 275 points and in Oman to nearly 300 points.

There is a weak relationship between the enrolment growth or enrolment status of these countries and the changes in learning outcome inequalities. The results show, however, that observable learning outcomes are on the whole becoming more unequal at a time when access and participation is improving. This should be interpreted with the consideration that countries in which participation has increased were likely to add the more disadvantaged students into the school system. As more disadvantaged children join the school system, the observable inequality may increase. However, it is unclear whether the inequality levels would have increased if the previously excluded group was observed in all periods.

Figure 5.18 and Figure 5.19 examine the gap between the scores of the richest and poorest 20 per cent in 2007 and 2011. Although the previous analysis has shown that wealth is important in explaining learning inequalities, the average gap between students from the richest and poorest 20 per cent is much smaller than that between the best and worst achieving 20 per cent of students. In other words, despite its importance, income does not explain 100 per cent of the variation in achievement. Furthermore, the gap in test scores between rich and poor is declining in several countries, even though the gaps between the lowest and highest achievers are increasing. This suggests that the relationship between inequalities in wealth and learning outcomes may be weakening.

What inequalities in performance mean in practice can be illustrated more vividly by examining the distribution of test scores in each country *(see Figures 5.20 and 5.21)*. Lebanon, Morocco and Tunisia have less inequality with test scores relatively concentrated around the mean average. Oman has both a low average test score and a wide dispersion. Jordan has a higher average but also wide inequality. At the low end of the distribution are the five per cent in Oman and around one to two per cent in Jordan, Palestine, Qatar and Syria who are attaining scores of less than 200 in mathematics. Only nine per cent of students in Lebanon are scoring below the median score in Morocco. The bottom 20 per cent of the distribution in Jordan and Morocco have roughly the same average scores, and it is only due to wider inequality in Jordan that the country's average scores are higher. The mathematics scores of the lowest scoring quintiles are worse still in Oman and Syria.

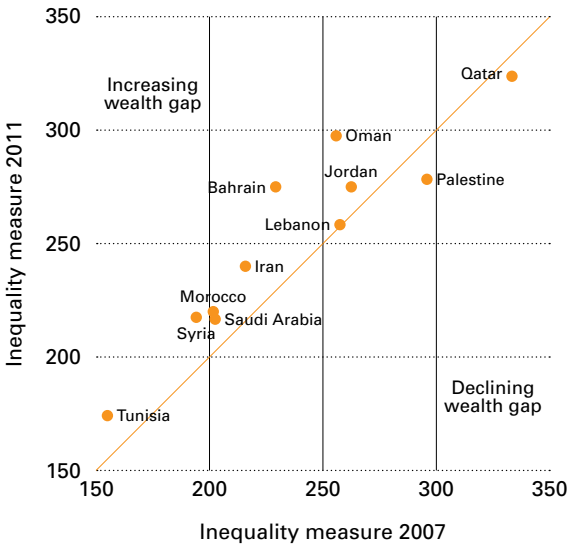
Figure 5.16 Inequality in TIMSS Grade 8 mathematics scores, 2007 and 2011, by country



Note: Inequality is measured as the gap (absolute difference) between the average score of the top 20 per cent of scorers and the bottom 20 per cent for 2007 and 2011.

Source: TIMSS 2007 and 2011.

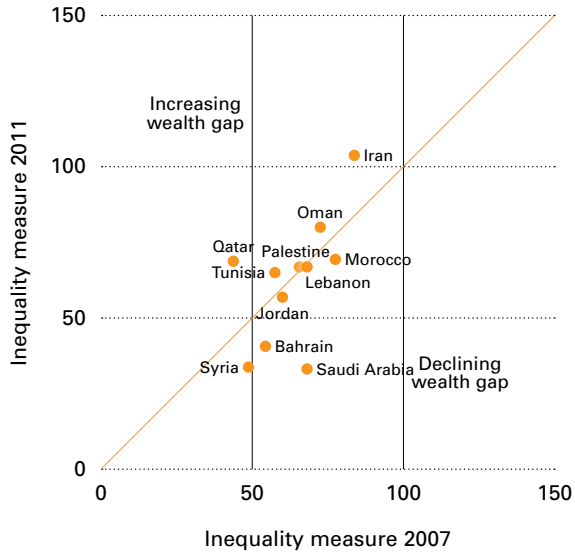
Figure 5.17 Inequality in TIMSS Grade 8 science scores, 2007 and 2011, by country



Note: Inequality is measured as the gap (absolute difference) between the average score of the top 20 per cent of scorers and the bottom 20 per cent for 2007 and 2011.

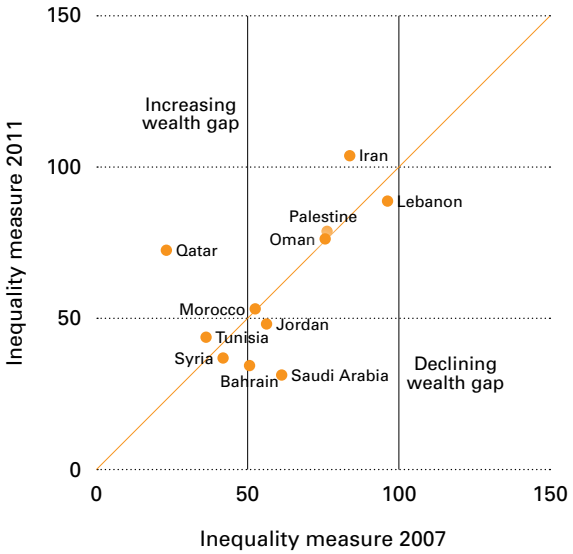
Source: TIMSS 2007 and 2011

Figure 5.18 Gap in TIMSS Grade 8 mathematics scores between students from the richest and poorest wealth quintiles, 2007 and 2011, by country



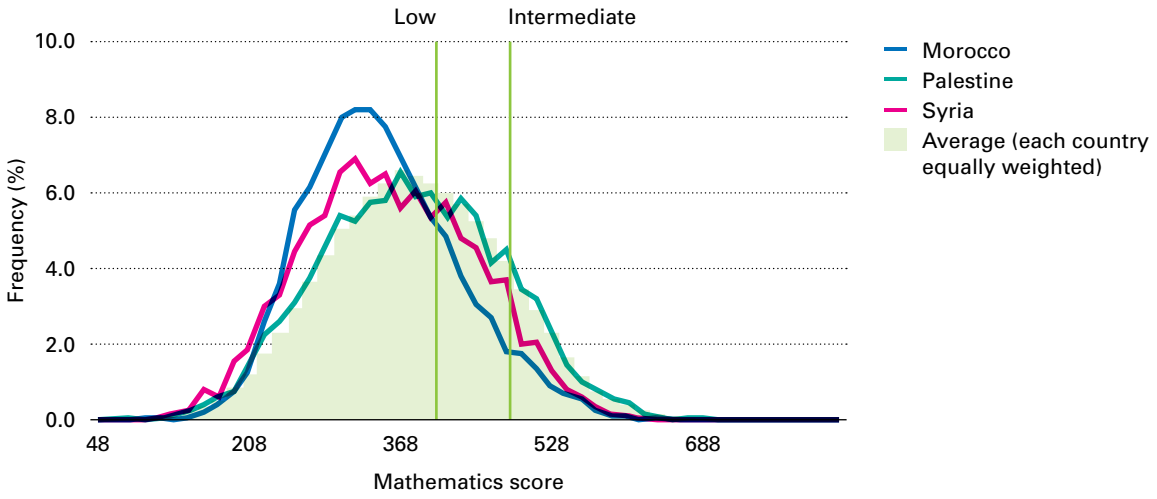
Source: TIMSS 2007 and 2011

Figure 5.19 Gap in TIMSS Grade 8 science scores between students from the richest and poorest wealth quintiles in 2007 and 2011, by country



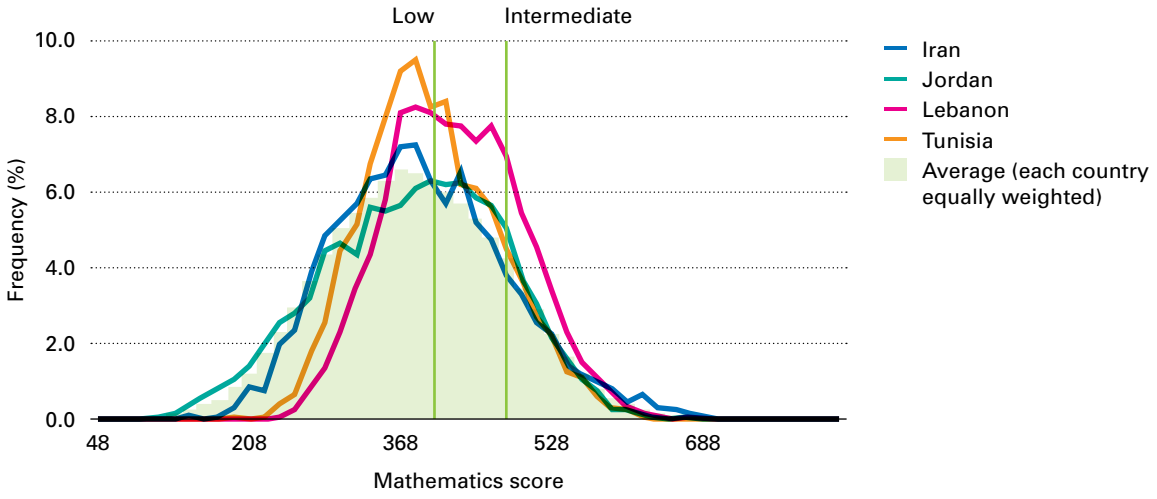
Source: TIMSS 2007 and 2011

Figure 5.20 Frequency distribution of TIMSS Grade 8 mathematics scores, Group 2 countries



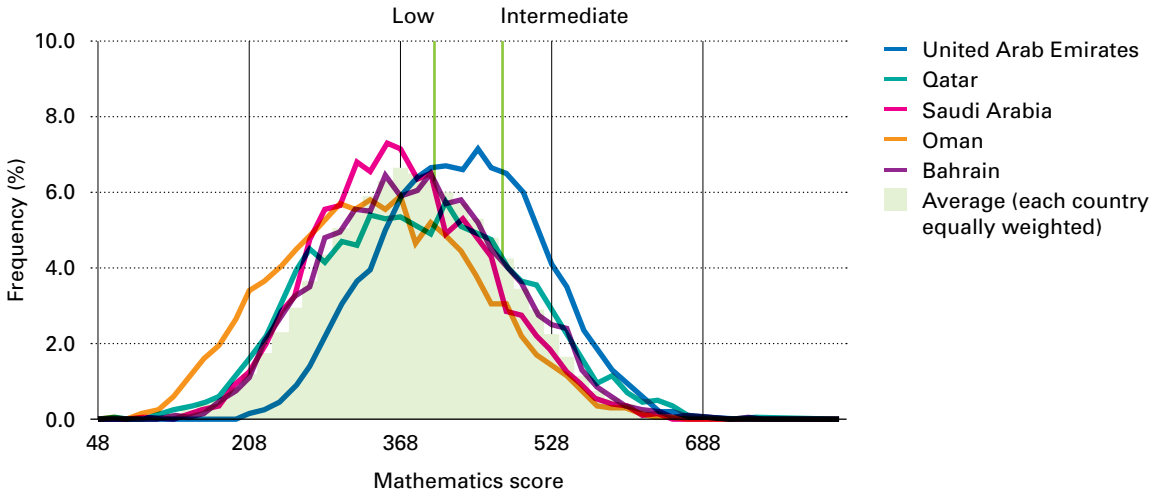
Source: TIMSS 2007 and 2011

Figure 5.21 Frequency distribution of TIMSS Grade 8 mathematics scores, Group 3 countries



Source: TIMSS 2007 and 2011

Figure 5.22 Frequency distribution of TIMSS Grade 8 mathematics scores, Group 4 countries



Source: TIMSS 2007 and 2011

5.5 SUMMARY

This chapter uses TIMSS 2007 and 2011 data from 12 MENA countries to examine inequalities in learning outcomes in mathematics and science by Grade 8. It found that:

- Scores in mathematics and science assessments are low, compared to other regions and to international benchmarks, across the countries in the MENA region. There are also large inequalities in learning outcomes within each country.
- In Bahrain, Jordan, Palestine, Oman, Saudi Arabia and the United Arab Emirates, there are gender gaps in terms of mathematics scores in favour of girls, and in some cases the gap is strikingly large. In Iran, Lebanon, Syria and Tunisia, there are gender gaps in favour of boys, but these gender gaps are smaller. In Lebanon, Morocco and Oman, girls are disadvantaged among the poorest households, but this gender gap is reversed among the richest.
- There is a large range of ages within Grade 8 in some countries, and students who are overage perform worse in TIMSS assessments than those who are not.
- In a descriptive analysis of the data, schools whose principals complained of shortfalls in instructional materials, supplies, buildings, or space, typically had worse learning outcomes, although this was not consistent across countries. Schools that engage more with parents – in particular, through asking them to volunteer for activities such as trips or projects – had better test results, although again the differences were modest and not consistent across countries.
- Students from richer areas, those with better educated parents, and in most cases urban students, are learning more in mathematics and science than those from poorer or rural households.
- Students from richer households are more likely to have been to pre-primary school, and those who have been to pre-primary school have higher test results in every country.
- The gap between the top and bottom 20 per cent of scores in each country was large; in no country was the bottom 20 per cent reaching even the low international benchmark for Grade 8 mathematics. The gaps have worsened in most countries between 2007 and 2011, reflecting improvements among the top 20 per cent while the bottom 20 per cent stagnates or worsens.
- The analysis of the report was limited to a descriptive analysis of the TIMSS data. Further analysis of the data can be carried out given that the TIMSS database includes a rich set of background data on the students and their context. A more in-depth analysis of the TIMSS database will be the subject of other reports.

6

POLICY RESPONSES TO EDUCATIONAL INEQUALITIES IN THE MENA REGION

As demonstrated throughout this report, educational inequities in MENA require prompt and strategic responses. In this concluding chapter, considerations and recommended policy responses are described. The chapter begins with a description of labour markets in MENA, providing insight into how inequalities in education are likely to be transformed into inequalities in the labour market, a salient topic, as many youth are finding the transition from school to work difficult. These descriptions aim to encourage education planners and development agencies to take action in alleviating labour market absorption issues, particularly as labour inequalities affect wider issues of social cohesion and equality of opportunities available.

Key findings for each dimension of exclusion, summaries of findings and detailed policy options are also described, closing with discussions of priorities for each MENA country. These suggestions should be taken as starting points for country-specific actions. All decisions, responses and action plans based on the analytic insights described herein should be contextualized to a country's specific political economy, resources available and evidence-based recommendations.

6.1 INEQUALITY AND THE TRANSITION FROM SCHOOL TO WORK

The educational inequalities described have many implications for the lives of young people, especially as they leave school and enter the labour market. Some continue to engage in livelihoods without the benefits of any schooling. Most young people in the region face difficult prospects for finding jobs in the high-paying sectors that they desire. Youth unemployment in MENA is the highest in the world, at 23.6 per cent in North Africa and 25.1 per cent in the Middle East (ILO, 2012). A study of transitions from school to work across multiple countries found that over 40 per cent of unemployed young people in Egypt, over 50 per cent in Iran, and over 70 per cent in Syria, had spent more than one year looking for work (Matsumoto and Elder, 2010) with all the attendant frustrations and disappointments.

Most countries in the MENA region have experienced high increases in the school-age population. Four countries have more than doubled their population of school age children between 1990 and 2010: Palestine, Qatar, the United Arab Emirates and Yemen (United Nations, 2013). Several others are likely to do so by 2020. The numbers entering the labour force have grown faster in MENA than in any other region of the world, almost doubling in size between 1990 and 2012. Within MENA, the working age population has grown fastest in the Group 1 countries Djibouti, Sudan and Yemen *(see Appendix A, Table A.9)*. Demographic trends have seen particularly rapid growth in the number of 15 to 19 and 20 to 24-year-olds in several countries (United Nations, 2013).

Because the number of school leavers has grown faster than national economies, and because public sector employment has reached a saturation point, the supply of workers exceeds that of available jobs at all levels of qualifications. Labour market outcomes steadily worsened during the 1980s and 1990s, with unemployment standing at over 15 per cent in Arab States by the early 2000s (Bibi and Nabli, 2010). The region's economies are not generating jobs at the same pace as this growth in school graduates entering the labour force. Imbalances between supply and demand for young people seeking jobs are widespread and exacerbated by global financial uncertainties and lack of confidence in the MENA region.

No simple generalization can be made across the countries in MENA, but it is clear that labour market growth in employment will have to exceed historic levels if it is to keep pace with rising numbers of school leavers over the next two decades. A central concern will be to monitor the impact of demographic transitions that take place within countries in the region, which could have a large impact on both supply and demand for education and the absorption of new entrants to the labour market.

Educated unemployment in the MENA region has been growing. In Egypt, nearly one third of university graduates do not find a position within a year of graduation (Al-Harthi, 2011). A survey of 1,500 young people in Egypt, Jordan, Morocco, Saudi Arabia and Yemen (e4e, 2011) found that only 36 per cent thought their education prepared them adequately for a job. Despite improvements in average learning outcomes over time, schools do not appear to be providing the skills needed for work for many of their graduates, and the links between education, individual income-earning capacity and national economic growth in the region, are weak (World Bank 2008; Salehi-Isfahani et al., 2012).

Educated young people have expectations in terms of the types of jobs that are suitable for them, and especially tend to seek government jobs in the MENA region. But government jobs can no longer be financed to meet guarantees of jobs for all graduates. It has become more and more common to see higher education and senior secondary graduates queuing in the labour market after graduation with the expectation of obtaining a government job, whilst remaining unemployed or accepting temporary jobs for which they are overqualified. Job creation in recent years has been largely in agriculture and the lower end of the services sector. Open unemployment is lowest among workers with little or no education, or with higher education. The intermediate group – the semi-skilled who have been to secondary school but no further – face the worst prospects, suggesting that little value may be placed on their education by the labour market (ILO, 2008).

The presence of unemployment among relatively well educated, or at least semi-skilled, youth does not mean that the lower educated have better employment prospects, nor that education

is unimportant for employment. Young people from poorer backgrounds and with lower education often do not have the option of spending long periods unemployed and are not able to compete in the high-paying segment of the jobs market – the civil service, modern manufacturing and service industries – that is dominated by more educated workers. Instead they may turn to the large and burgeoning urban informal sector, which dominates urban enterprise in some of the MENA region. Like the agriculture sector in rural areas, these companies account for a large share of employment but small share of GDP. In countries such as Egypt and Yemen, the majority of workers in the informal sector are unskilled, poorly educated, and barely able to make a living (Messkoub, 2008).

In some MENA countries, such as Egypt and Iran, past research has suggested that returns to education are highest at the tertiary level, and are low for vocational education (Salehi-Isfahani, 2009). Thus, the forms of education accessed most by the poorest – primary, lower secondary and vocational education – bring the smallest rewards in the labour market. This is a common pattern in countries with highly selective school systems and rigid labour markets. Children who are tracked into vocational education around age 15 in these countries generally do not enter tertiary education and can expect lower wages than individuals who are tracked into general secondary schools (Salehi-Isfahani, 2009). If the numbers of insufficiently prepared entrants to the labour market are large, it will generate a secondary market in alternative courses and retrieval programmes for those seeking to improve their chances of being employed. This is likely to reinforce inequalities already determined by failure to complete a normal cycle of basic education at the appropriate age.

In several countries, agriculture continues to dominate employment but has limited scope for contributing to economic development *(see Appendix A, Table A.10)*. In Egypt, 29 per cent of employment is in agriculture but the sector only contributes 15 per cent to the country's GDP. Educational deprivation in rural areas is likely to be part of this story. Fewer than 60 per cent of young people in rural Egypt complete basic education, as noted in Section 4.3. In Yemen, agriculture accounts for 25 per cent of employment but only eight per cent of GDP, and rural-urban educational inequality is even more extreme, with only one in two young people in rural areas completing basic education compared to over half of those in urban areas *(see Appendix A, Table A.7)*. Unequal education is likely to determine the allocation of scarce job opportunities, consigning less educated rural young people to low-paid work in the agricultural sector.

This means that action is needed across the board – on access, retention and quality – to improve the outcomes for young people in labour markets. This, in turn, should lead to a focus on improved educational quality and achievement (UNICEF and UNESCO, 2013). The widespread concern with skills mismatches among educated unemployed youth in the MENA region should not obscure the fact that many are unable even to complete a basic education, even in middle-income countries. These young people have no hope of entering the narrow and competitive labour markets that are reserved for the better educated, and they cannot afford long periods of unemployment while queuing for government or other high-status jobs.

Inequalities by gender also play an important role in both educational and labour market opportunities. Female disadvantage in education may be declining, and in fact, many outperform boys once getting into higher levels of schooling, yet gender gaps in employment are still very wide, creating the so-called boomerang dynamic (Steer et al., 2014). In every country in MENA, women are less than half as likely to be employed as men *(see Appendix A, Table A.11)*. The employment gender gap is larger still among youth *(see Appendix A, Table A.12)*. In Algeria, 38 per cent of young women are unemployed compared to 19 per cent of young men; in Egypt, over half of young women are unemployed but only one in seven young men. Women with higher education participate in the labour force much more than those with lower education (World Bank, 2008), yet still at lower rates than men. Female educational attainment has risen greatly, and is still strongly correlated with labour market participation, but at the same time opportunities for educated women have become scarcer. There is little sign so far of the reduction in the education gender gap transforming the labour market opportunities that women can access, and labour market policies in the region rarely take note of gender differences in unemployment (Messkoub, 2008).

6.2 KEY FINDINGS: INEQUALITIES IN ENROLMENT, ATTAINMENT AND LEARNING OUTCOMES

Educational inequalities in access, progression and outcome are widespread across MENA, affecting each country in different and specific ways. This report clustered countries into four groups, detailing challenges common to the countries within each group. However, reducing inequalities will require tailoring responses to each individual country, supported by more explicit commitments to greater equity by regional institutions. Detailed country case studies, which start from the analysis in this report, are needed to frame focused empirical work designed to explain the intra-country differences in access, process and outcomes identified and the causal relationships that shape the patterns identified.

Both access and quality (indicated by participation, attainment and achievement levels) remain problems for all MENA countries. There are still large numbers of children not completing primary education, particularly in the countries of Group 1 (Djibouti, Sudan, and Yemen), and in Iraq. In Group 2, many children remain out of school at lower secondary level, and the household survey analysis suggests that even in Egypt and pre-conflict Syria there are large numbers of young people who have not completed basic education. Young people who do not successfully cross this threshold are likely to be at a severe disadvantage in seeking employment in modern sector labour markets. But even among those that do complete basic education, a very large proportion are achieving at levels below the low international benchmark standards of learning in mathematics and science. They may leave school with the qualifications needed to seek jobs, but may not possess the basic skills needed to do such jobs efficiently and effectively.

In Djibouti, Sudan and Yemen, the 20 per cent of young people (aged 15-19 years) with the least education had, on average, close to zero years of education, reflecting the fact that most of them had simply never been to school. By contrast, the top 20 per cent in these countries had on average 10 years of education, having completed secondary school. There were also large gaps in Egypt, Iraq and Palestine where the top 20 per cent had on average seven years of education more than the bottom 20 per cent. Similarly for learning outcomes, the top 20 per cent in several countries in the MENA region were scoring close to the advanced international benchmarks in mathematics and science, while no bottom 20 per cent in any MENA country reached the low benchmark. Moreover, inequality in learning outcomes appears to have increased between 2007 and 2011, with the top 20 per cent improving slightly while the bottom 20 per cent stagnated or worsened.

One of the main correlates of both access and learning outcomes was socioeconomic status. Children from the lowest wealth quintiles had consistently lower outcomes than the richest in terms of access to early childhood education, pre-primary, primary and lower secondary. In all countries where data are available, access to pre-primary is almost nonexistent for families in the poorest quintile *(see Table 4.1)* except for Palestinians living in Lebanon. In Djibouti, Iraq, Sudan and Yemen, fewer than 20 per cent of young people from the poorest households have completed lower secondary education, and even among higher-enrolment countries, there are very large gaps in attainment between the richest and poorest. There were similarly large inequalities by socioeconomic status in learning outcomes. In Iran, Morocco and Oman, Grade 8 students from the richest households were more than twice as likely to reach the low international benchmark in mathematics as those from the poorest households.

There are many different factors driving educational disparities between rich and poor households. This report notes that current financing arrangements for basic education are often regressive – the children of richer households benefit disproportionately from the public system. In the MENA region, private fee paying schooling advantages some at the expense of others. There is a limit determined by price to the amount of private sector provision that can exist. Below a certain fee level per student, it is not possible to finance viable private school businesses. This fee level is likely to exclude large parts of the population in many countries. Similarly, widespread use of private tuition is likely to give advantages to those who can afford it and hold back those who cannot.

There is evidence of disparities by rural-urban location and region. In most cases, rural areas have worse enrolment, attainment and learning outcomes than urban ones (this is an important finding for countries in Group 1 and 2). Iran is an exception: around 90 per cent of rural young people have completed basic education, compared to only 75 per cent of urbanites, although test results at Grade 8 were higher in big cities. High levels of rural deprivation do not automatically mean that the majority of the deprived live in rural areas. The 20 per cent of young people with lowest grade attainment is predominantly urban in the relatively urbanized countries, such as Iran and Jordan; mainly rural in low-HDI countries like Sudan and Yemen; and relatively evenly split in Algeria, Iraq and Syria. In deprived governorates of Egypt and Syria, young people have typically only stayed in school for four years, leaving them at a severe disadvantage compared to their peers in other regions with up to seven years of education. The factors underlying disparities by location may include the supply of schools within a walking distance, particularly in remote rural areas, and include issues surrounding teacher deployment to such areas, which are likely to affect learning outcomes.

Parents' education is a strong predictor of children's educational attainment and learning outcomes. It was relatively rare for children whose mothers had at least basic education to leave school with less than six years of education. The cumulative risk analysis in Chapter 4 further confirm that mothers' education could be a stronger predictor of school attendance than household wealth. In Iran, Jordan and Qatar, students whose mothers had higher education were around twice as likely to reach the low international benchmark in mathematics as those whose mothers had primary education or lower.

Girls are more likely to be out of school than boys in Iraq, Morocco, Sudan and Yemen. Other countries have closed gender gaps in enrolment or attendance rates and some (Lebanon and Palestine) have reversed them. However, the detailed examination of enrolments by grade reveals more boys than girls enrolled in every country in the region, at least during primary grades. In part this reflects larger numbers of boys than girls in the population, but countries such as Algeria, Egypt and Tunisia appear to have disproportionately few girls in primary grades. In terms of learning outcomes, girls tend to achieve better mathematics and science results, although data were not available for some of the countries such as Iraq and Yemen that have large gender gaps in terms of enrolments.

Gender disparities are also sometimes magnified by wealth and location. In Djibouti, rural females have a 35 per cent chance of being enrolled, whereas urban males have an 80 per cent chance. There are wide differences of this kind in Iraq, Sudan and Yemen. Gender gaps in educational attainment were much larger among 15 to 19-year-olds whose mothers had completed less than basic education, compared to those whose mothers had completed basic education or higher in Djibouti, Iraq, Sudan and Yemen. In these four countries, the bottom 20 per cent of academic attainment at ages 15-19 years is disproportionately female. Even among children whose mothers were more educated, more than 20 per cent of girls left school with less than basic education in Iraq, Sudan and Yemen. In Lebanon, Morocco and Oman, girls from the poorest households have worse mathematics results than boys from the poorest households, but this gender gap is reversed among the richest, suggesting a complex interaction between social, cultural and economic factors in determining gender inequalities in learning outcomes.

Children in Grade 4 who came from higher income areas were much more likely than children from poorer areas to have been to pre-primary school before starting primary school. In turn, children who went to pre-primary school appear to have an advantage in both mathematics and science scores. While this is not sufficient to establish a causal link, it is consistent with evidence elsewhere that pre-primary education can help to ensure readiness for primary school and improve learning outcomes. Sending children to pre-primary may be one of many ways in which wealthier families are better able than poorer households to prepare their children for school and maximize their ability to learn. This is one of the mediating factors through which inequalities in income or wealth are translated into inequalities in learning outcomes.

School resources are likely to affect children's regular attendance, progress through the system, and learning outcomes. The disparities documented in this report relate to socioeconomic status and rural-urban location, reflecting differences in the schools that people

are able to access, as well as differences in the resources possessed by individual households. The analysis of TIMSS data indicates that both school resources and home resources are important for children's learning outcomes, although the pattern differs across countries. Students at schools where principals complained of shortfalls in learning resources, supplies, buildings, or space had lower scores in mathematics and science than those where there was more satisfaction. Notwithstanding the strength of effects of resources on achievement and attainment, it is evident that dissatisfaction with real inadequacies in space and learning environments should be assessed and addressed.

Finally, the report highlights uneven flows through school systems in different countries. In some countries there are high proportions of overage children and high repetition rates. In Algeria, Djibouti, Iran, Lebanon, Morocco, Oman and Tunisia, analysis of enrolment by grade revealed bottlenecks associated with high-stakes selection and examinations. Patterns of this kind are often associated with inequalities in the chances of progression for children from different social groups. A summary of the main findings can be found in Table 6.1.

There are many other forms of education inequality in the MENA region that affect different countries in different ways. Comparable cross national data do not include detailed information on educational inequalities that are associated with internal and cross border migration; mother tongue and language of instruction issues; ethnicity and social group exclusions; inequalities arising from different forms of disability; privatization of educational access and rationing of opportunity by price; and uneven educational opportunity in fragile states and conflict affected regions. These are additional dimensions of inequality which will have an impact on equitable access to education and whether learning outcomes remain so unevenly distributed between groups. Greater equity which raises the performance of the lowest-scoring students should also and incidentally raise the average above the low international benchmark level that few countries in MENA exceed.

6.3 KEY ISSUES FOR ADDRESSING INEQUALITIES

Equity cannot be decoupled from efficiency and effectiveness in the education systems of the MENA countries. Where access to education is unevenly distributed, service provision cannot be efficient in reaching all children, nor is it likely to be effective in ensuring minimum learning outcomes are achieved by all. According to neoclassical economic theory, efficient systems have small variations in key parameters related to costs and access, e.g., pupil teacher ratios, textbooks per child, distance to school, quality of school buildings and infrastructure. Wide variations in these parameters compromise efficiency by encouraging shortages to coexist with surpluses. Variations in the effectiveness of learning should also fall within narrower rather than wider limits. Over time, the difference in performance between the highest and lowest scoring students should diminish, but these remain large in many countries within MENA.

Education systems should ensure that all children achieve minimum learning standards and most exceed the minimum competency levels. A part of this ambition is to reduce the variance in scores. Systems that are inequitable reinforce existing differences in capability between children, especially if they allocate fewer sources to those with most need. National development is more likely to benefit from pro-poor investment strategies that increase the chances of realizing every child's capabilities.

As noted in Chapter 1, equity in education and employment is directly related to social cohesion. The combination of economic and educational inequalities with high youth unemployment is a risk factor for social conflict. States have a social contract to provide public services effectively and efficiently, including education. A more equitable education development policy can establish an inclusive education system that helps to overcome social divisions (UNESCO, 2011). Stable commitments to equal opportunity in education, sustained political will, appropriate resource allocation and measures designed to reduce educational disadvantage are all necessary components of equitable educational development.

Strategic considerations arise from the evidence on the nature and extent of inequalities discussed in this report. There are four areas where UNICEF and countries in MENA may wish to catalyse initiatives to reduce educational inequality.

1. **Political Will.** At the heart of any policy initiative targeted at enhanced equity is political commitment to reduce educational inequalities that arise from household income, location, gender, disability and membership of particular social groups. This is a logical necessity of the political economy of development. Countries that have successfully reduced inequality and universalized access have made public commitments to equal opportunity. They favour providing access to the pool of talent in the whole population, rather than offering opportunities to attend secondary school and higher education to socially selective groups. Not only is it likely to be more efficient and effective in the pursuit of national development goals to promote equal opportunity, but it is also manifestly fairer. Where there are rights to education enshrined in national legislation and a legal framework to provide equal opportunity, these need to be implemented. Where such legislation does not exist, it should be considered as a long-term goal, based on the right to education that is supported by all Member States of the United Nations. The data on inequalities in MENA shows wide differences between countries that reflect in part differences in political will.

Policy Implication: National and regional policy dialogue to generate long-term commitments to enhanced equity through legislation, promotion of rights to education and campaigns calling governments to provide public education equitably.

2. **Consensus on Meanings and Dimensions of Inequity.** Consensus is needed on the definition and dimensions of equity. This sounds obvious but is widely assumed rather than explicitly demonstrated. Simply put, there will be issues of equality of opportunity, equality of process, learning and teaching, and equality of outcomes. These have different attributes and require different policy interventions. Importantly, distinctions need to be made in MENA between equality and equity in terms of educational development strategy. Equal access should ensure that every child, independent of circumstance, has the opportunity to attend a school of appropriate quality. Commitments to equity favour greater investment in those with more disadvantages. This is as true in the MENA region as elsewhere, but is especially relevant to the MENA countries with the highest levels of disparity in achievement and attainment.

Policy Implication: Generate consensus on meanings and definitions of inequity and on strategies to enhance equality of opportunity, reduce differences in access and attainment, and compensate for educational disadvantage.

3. **Collect Data and Monitor Changing Patterns of Equity.** The information analysed herein has many gaps. Household surveys have not been undertaken using comparable methods in all the countries. They relate to different time periods and are often not part of the regular sequence that would allow comparison over time within the same country. Administrative data at school level rarely collect information related to social inequalities beyond information on gender. In both cases, there may be reasons to suspect under- and over-reporting of participation in school at different levels and the reliability of some data needs improvement. Time series data are widely unavailable that would give detailed insight into how patterns of inequality have been changing. In addition to identifying whether inequalities were growing or decreasing in different locations, good quality time series data can be used to ascertain the impact of policy. Every country in the region should consider establishing longitudinal studies tracking cohorts of children that can be used to explore patterns of inequality and how they evolve. These are far superior to cross sectional data in establishing the causes and effects of educational inequality. Without better data on education inequality, it will always be difficult to determine whether interventions make any difference. It will also hamper any attempts to develop goals and targets where inequality can be monitored.

Policy Implication: Develop and enhance data collection systems that provide robust and time series data on levels of educational inequality and inequitable learning outcomes; additionally, launch longitudinal studies.

4. **Policy Dialogue and Equity Enhancing Planning and Resource Allocation.** Short-, medium- and long-term strategies to reduce educational inequalities need to be planned in detail. This should be the outcome of policy dialogue and depends on political will, consensus around goals and objectives, and adequate data to assess and monitor inequalities. In every country in the region, there are some inequalities that arise from household poverty, location, gender, disability and social group. The analysis in this study shows that there are no simple generalizations across MENA. The way forward will be to focus on country-level reviews that identify and prioritize different types of educational inequality. These can provide the basis for programmes on different timescales to intervene in causal chains that result in education inequalities.

Policy Implication: Commission national reviews of inequality in educational access and outcomes linked to national planning cycles for short-, medium- and long-term planning, supported by robust technical analysis sensitive to the political economy of inequality and develop credible medium term plans that can be resourced.

The diversity of the MENA region, the variation in baseline measures of inequalities in access and achievement, and the differing priorities of national governments make it inappropriate to arrive at a single list of policy options for all 20 countries in the region. It is, however, possible to develop a list of policy options that can be used in conjunction with national reviews of inequalities, prioritizing of goals and targets, and appraising the political appetite to act and allocate resources for reducing different inequalities. A matrix of possibilities have been developed using four dimensions:

i. enabling context;

ii. supply-side interventions;

iii. demand-side interventions; and

iv. quality-enhancements.

See Table 6.2 for this list of policy options. The relevance of these policy options can be assessed as part of a country-level analysis.

Table 6.1 Main findings by country

Country	Main analysis finding	Recommendation
Group 1		
Djibouti	Very low levels of participation in early childhood education (less than 20%), with a large gap in the rate of participation between poorest and richest quintiles.	Expand early childhood education, with a focus on provision to individuals in the lower half of the income distribution.
	Largest disparity in primary school attendance is between rural and urban children.	Identify main barriers for attendance in rural areas. Low attendance can be associated to lack of supply and inability of families to cover the cost of schooling, among other reasons. See the OOSCI country study for further analysis.
	The bottom 20% of youth, aged 15-19 years, in terms of education attainment is predominately female (65%).	Identify main barriers for progression of females in the school system, particularly looking at females dropping out during primary education. See the OOSCI country study for further analysis.
Sudan	Very low levels of participation in early childhood education (less than 30%), with a large gap in rate of participation between the poorest and richest quintiles.	Expand early childhood education, with a focus on provision to individuals in the lower half of the income distribution.
	Large gap of close to 40 percentage points in school attendance at the primary level between the poorest and richest quintiles, due in part to low attendance in rural areas.	Identify main barriers for attendance in rural areas. Low attendance can be associated to lack of supply and inability of families to cover the cost of schooling among other reasons. See the OOSCI country study for further analysis.
	The bottom 20% of youth, aged 15-19 years, in terms of education attainment is predominately female (75%).	Identify main barriers for progression of females in the school system, particularly looking at females dropping out during primary education. See the OOSCI country study for further analysis.
	High levels of regional disparities, with differences in average attainment of close to six years between the most and the least advantaged regions.	Improve the access to education in the southern part of the country. Policy focus on educational resources and, potentially, social policy in deprived areas is required. See the OOSCI country study for further analysis.
	Gap of more than 70 percentage points between the wealthiest quintile (at close to 90%) and the poorest quintile (at 20%) of youth, aged 15-19 years, that complete at least lower secondary.	Identify main barriers for progression of poorer students in the school system and implement appropriate actions. Poor students can be affected by a large range of issues, from inability to cover the direct and indirect costs of schooling to lack of access to schools in their areas.
	Mother uneducated/absent is the main driver for the probability of being out of school at primary age in the cumulative analysis.	Identify main barriers for progression of students with an absent/uneducated mother and assess if the main driver is an absent mother, either due to the loss of income, or differences in the enabling environment. Implement actions accordingly. See the OOSCI country study for further analysis.
Yemen	Very low levels of participation in early childhood education (less than 5%), with a large gap in the rate of participation between the poorest and richest quintiles.	Expand early childhood education, with a focus on provision to individuals in the lower half of the income distribution.
	Large gap of close to 40 percentage points in school attendance at the primary level between poorest and richest quintiles, due in part to low attendance in rural areas.	Identify main barriers for attendance of poorer students in the school system and implement appropriate actions. Poor students can be affected by a wide range of issues, from inability to cover the direct and indirect costs of schooling to lack of access to schools in their areas. See the OOSCI country study for further analysis.
	The bottom 20% of youth, aged 15-19 years, in terms of education attainment is predominately female (close to 90%).	Identify main barriers for progression of females in the school system. See the OOSCI country study for further analysis. This report found that there were important environmental barriers to school education, such as early marriage.
	More than 40 percentage points difference between the wealthiest quintile (above 55%) and the poorest quintile (below 15%) in the percentage of youth, aged 15-19 years, that completes at least lower secondary.	Identify main barriers for progression of poorer students in the school system and implement appropriate actions. Poor students can be affected by a wide range of issues, from inability to cover the direct and indirect costs of schooling to lack of access to schools in their areas.
	Poverty is the main driver for the probability of being out of school at primary age in the cumulative analysis.	Take action on the barriers to education being faced by children in poverty, which include both education and social policy. See the OOSCI country study for further analysis.

Table 6.1 Main findings by country (continued)

Country	Main analysis finding	Recommendation
Group 2		
Egypt	Gap of 15% between rural (58%) and urban areas (about 73%) in youth, aged 15-19 years, that complete at least lower secondary.	Identify main barriers to the progression in the education in rural areas and implement the required actions. See the OOSCI country study for further analysis.
	More than 40 percentage points difference between the wealthiest quintile (above 80%) and the poorest quintile (40%) of youth, aged 15-19 years, that completes at least lower secondary.	Identify main barriers for progression of poorer students in the school system and implement appropriate actions. Poor students can be affected by a wide range of issues, from inability to cover the direct and indirect costs of schooling to lack of access to schools in their areas.
Iraq	Very low levels of participation in early childhood education (less than 10%), with a large gap in the rate of participation between the poorest and richest quintiles.	Expand early childhood education, with a focus on provision to individuals in the lower half of the income distribution.
	Large disadvantage for females, aged 11-15 years, in rural areas in school attendance. Close to 40 percentage points difference between rural males and rural females, and a similar gap between urban and rural females. No meaningful gap between urban males and females.	Identify main barriers for females in rural areas, particularly as they move into lower-secondary school, and implement actions accordingly. Females in rural areas may face social pressure to drop out of school and income-related barriers. See the OOSCI country study for further analysis.
	Relatively high levels of regional disparities, with differences in average attainment of close to four years between the most and the least advantaged regions.	Improve access to education in deprived governorates. Policy to focus on educational resources, and, potentially, social policy in deprived areas.
Morocco	Low adjusted net enrolment rate for primary school compared to other countries in Group 2. This shows inequality in the progression through primary school, due to repetition and late entry.	Identify the main periods in which students repeat grades and drop out, and the main reasons in these cases. See the OOSCI country study for further analysis.
	Gap of 30 percentage points for males and 40 percentage points for females between students in the poorest and richest quintiles in the percentage reaching at least the low international benchmark.	Identify the barriers for lower income families for learning, which could include lack of trained personnel, low levels of school resources, low attendance rates or an adverse school environment. An in depth analysis of the TIMSS results is recommended as a next step.
Palestine	Very low levels of participation in early childhood education (less than 30%), with a large gap in rate of participation between the poorest and richest quintiles.	Expand early childhood education, with a focus on provision to individuals in the lower part of the income distribution.
	Mother's education highly influential in the likelihood of completing primary education for Palestine and Palestinians in Lebanon.	Identify main barriers for progression of students with an uneducated mother, and assess if the main comer due to the loss of income, or differences in the enabling environment. Implement actions accordingly.
Syria (pre-conflict)	Very low levels of participation in early childhood education (less than 15%), with a large gap in the rate of participation between the poorest and richest quintiles.	Actions that address education in the ongoing conflict should consider this as a baseline, including the provision of early childhood education in the emergency response.
	Relatively high levels of regional disparities, with differences in average attainment of close to three years between the most and the least advantaged regions.	Actions that address education in the ongoing conflict should consider this as a baseline, including policies that address the barriers that have led to regional disparities.
	Mother uneducated/absent is the main driver for the probability of being out of school at lower secondary age in the cumulative analysis.	Actions that address education in the ongoing conflict should consider this as a baseline. Policies need to take action on the barriers to education being faced by children in poverty, which include both education and social policy.

Table 6.1 Main findings by country (continued)

Country	Main analysis finding	Recommendation
Group 3		
Algeria	Very low levels of participation in early childhood education (less than 25%), with a large gap in rate of participation between the poorest and richest quintiles.	Expand early childhood education, with a focus on provision to individuals in the lower half of the income distribution.
Iran	The bottom 20% of youth, aged 15-19 years, in terms of education attainment is more likely to be urban than rural.	Analyse barriers to education for poor urban students and take action accordingly. This is the only country in the region where urban dwellers have lower attainment.
	Gap of 40 percentage points between the poorest quintile and richest quintile of students reaching at least the low international benchmark. This is the largest observed gap in MENA.	Take action on the barriers to learning faced by children in poverty, which include both education and social policy. Inequality in learning could be associated to inequality in the school resources available and to poverty-related distress among other reasons.
	Gap of 50 points in TIMSS Grade 8 mathematics score between rural and urban areas.	Take action on the barriers to learning faced by children in rural areas, which include both education and social policy. Inequality in learning could be associated to inequality in the school resources available, and to poverty-related distress among other reasons.
Jordan	Mother uneducated/absent and poverty are the main drivers for the probability of being out of school at lower-secondary age in the cumulative analysis.	Identify main barriers for progression of students with an uneducated mother, and assess why these barriers become more important for lower-secondary-school-age students.
Lebanon	Gap of 20 percentage points between the poorest quintile and the richest quintile of students reaching at least the low international benchmark.	Take action in education and in other areas of policy to improve the learning conditions of disadvantaged students. Equity in learning achievement will be key for future progress.
Tunisia	Relatively high levels of participation in early childhood education (close to 60%), with a large gap in the rate of participation between the poorest quintile (19%) and richest quintile (90%).	Focus on expanding the provision of early childhood education to children in the lower half of the income distribution.
Group 4		
Bahrain	The second largest observed gap in MENA between men and women, of about 50 points (half a standard deviation) in favour of women, in TIMSS Grade 8 science scores.	Identify barriers to learning and take action emphasizing the value of academic achievement. Low academic performance of males might be linked to low-quality schools, poor curriculum design, or lack of incentives among other reasons.
	The largest observed gap in the MENA region between students in high-income areas and students in middle- and low-income areas in TIMSS Grade 8 mathematics scores. This gap of 150 points (one and a half standard deviations) puts students in middle- and low-income areas at a performance level similar to students in middle- and low-income areas of Morocco.	Take action in the education and in other areas of policy to improve the learning conditions of disadvantaged students. Equity in learning achievement will be key for future progress.
Oman	The largest observed gap in the MENA region between men and women, of about 70 points (above half a standard deviation), in favour of women in TIMSS Grade 8 science scores.	Identify barriers to learning and take actions emphasizing the value of academic achievement. Low academic performance of males might be linked to low-quality schools, poor curriculum design, or lack of incentives among other reasons.
	In TIMSS Grade 8 science, less than half of the boys reached the low international benchmark, a proportion similar to countries with meaningfully lower income per capita, such as Morocco.	Take action in the education and in other areas of policy, to improve the learning conditions of disadvantaged students. Equity in learning achievement will be key for future progress.
	In TIMSS Grade 8 mathematics, less than half of the students reached the low international benchmark, a proportion similar to countries with meaningfully lower income per capita, such as Morocco or pre-conflict Syria. The proportion was lower for males than for females.	Determine the main barriers towards learning achievement. Teacher quality, school supplies and students' efforts are known to be fundamental drivers of achievement.

Table 6.1 Main findings by country (continued)

Country	Main analysis finding	Recommendation
Group 4 (continued)		
Qatar	Gap of 20 percentage points between the poorest and richest quintiles of students reaching at least the low international benchmark.	Take action in the education and other areas of policy to improve the learning conditions of disadvantaged students.
Saudi Arabia	In TIMSS Grade 8 mathematics, less than half of the students reached the low international benchmark, a proportion similar to countries with meaningfully lower income per capita, such as Morocco or pre-conflict Syria. The proportion was lower for males than for females.	Identify barriers to learning and to take actions emphasizing the value of academic achievement. Low academic performance of males might be linked to low-quality schools, poor curriculum design, or lack of incentives among other reasons.
United Arab Emirates	Gap of 50 points in the TIMSS Grade 8 mathematics scores between rural and urban areas.	Take action on the barriers to learning faced by children in rural areas, which include both education and social policy. Inequality in learning could be associated to inequality in the school resources available and to poverty-related distress among other reasons.

Table 6.2 Detailed list of policy options to Enhance Equity in Education in the MENA Region

Policy option	Comment
Enabling context	
Legislation on universal access to fee-free basic education.	All children should have a legally enforceable right to fee-free education up to the legal minimum age of work.
Legislation on compulsory age of entry to primary school.	All parents/caregivers should have a legal responsibility to enrol children in school at a nationally defined age.
Legislation on free pre-school provision.	All children should have defined rights to free preschool education for those who are unable to finance the fees.
Legislation on equality of opportunity for all population groups.	Enforceable rights to access to education for nominated population groups (boys and girls, identified social groups, disabled citizens, legal migrants, etc.)
Mandatory unique child identifiers to track educational access and achievement.	Options include birth registrations, "give a child a birthday" if no record, or national identity card; and school tracking systems for students' daily attendance, achievement, health, disability, etc.
School Mapping of opportunities to learn, inequalities in access and learning outcomes.	Development of norms for school location, distance to travel, school size and link to procurement.
National initiatives to promote programmes for widening access for excluded groups.	Initiatives should address identified causes of exclusion linked to different correlates of exclusion (household poverty, gender location, disability, social group, etc.).
Accountable local governance of zones, districts and clusters of schools with equity performance targets consistent with local government responsibilities.	Local government tasked with reducing inequalities in access and performance linked to agreed goals and targets independently monitored through EMIS.
"Education Watch" style civil society monitoring of educational inequalities in access and performance linked to school governance.	Include civil-society driven assessment of educational opportunity, school performance and school improvement.
Stabilization of education system planning, governance and resourcing in fragile and conflict-affected states and regions.	Macro-interventions to restore and rebuild civil administration with equity as a driver of reconstruction.
Health and nutrition circles of support around children, including school feeding programmes as appropriate.	Develop school and community systems to identify, monitor and treat common health and nutrition inhibitors to attendance and learning and diagnostic health awareness training for all teachers.

Table 6.2 Detailed list of policy options to Enhance Equity in Education in the MENA Region (continued)

Policy option	Comment
Supply-side interventions	
School building and infrastructure enhancement programmes to meet minimum national standards for different types of school.	Locate schools and classrooms according to needs identified by school mapping, using criteria (e.g., time and distance to school); and all schools to meet standards of safety, clean water, sanitation, infrastructure, learning space and preventative maintenance.
Learning materials and learning aids.	Monitor and intervene to ensure equal opportunities to access to learning materials (text books, worksheets, enrichment materials, etc.) and learning aids (teaching support materials, audio visual aids, ICT, etc.) according to minimum standards.
Child friendly schools.	Prohibit violence, corporal punishment and bullying, and provide child support and safety net systems for the vulnerable, with counselling, pastoral and social welfare responsibilities clearly allocated.
Reduce variations in pupil to teacher ratio, class size, and teacher/class between schools to +/- 10% of the mean value.	Develop and implement a formula-based deployment of teachers, classroom buildings and timetable allocations of teaching groups.
Set class-size ranges for different grade levels to discourage oversize classes in lower grades and undersize classes in higher grades.	Consult norms established related to pedagogic tradition and aspirations; and primary and secondary schools staffed and timetabled to produce similar workloads and teaching-group sizes.
Ensure all teachers are qualified and deployed equitably.	Ensure that the qualified teacher ratios vary by no more than +/- 10%.
Adopt appropriate policy on language of learning and teaching.	Implement a language-of-learning policy responsive to equal opportunity and evidence-based strategies to promote access and achievement.
Equitable baseline formula for funding of schools for salaries and non-salary budgets.	Cost/child non-salary and salary budget should be harmonized across all public schools by agreed formula for funding linked to enrolment.
Pro-poor allocation of capitation grants to schools based on deprivation indices.	Develop more non-salary recurrent finance linked to performance criteria designed to provide more resources to schools with high deprivation indices, high dropout rates and low achievement.
Demand-side interventions	
Engagement of the school personnel in reaching (seeking) children currently out of school, in order for these children to enrol and attend.	Draw clear responsibilities for the schools and local authorities for ensuring the locus of accountability for OOSC.
Community-based good parenting initiatives linked to community-based contributions to pre-school and school programmes.	Foster good parenting initiatives, and untrained and trained community-based teaching assistants.
Conditional cash transfers to households dependent on attendance and progression of school-age children.	An option where there is evidence that this is cost effective in reducing inequalities in access and achievement.
Locally enforced conditions on appropriate child contributions to household economic activities linked to school attendance with prohibitions on inappropriate child labour.	Fundamental to enforce the prohibition of child labour, which has adverse effects on school attendance and progression.
Facilitation of access to education for young mothers.	Support, counselling and facilitation of access to education for young mothers.
Reduce opportunity costs of attendance at school by interventions in local markets.	Reduce opportunity costs of school attendance through cash incentives to attend school, levies on employers of children, and regulate legal employment opportunities to allow upper secondary students over the age of 15 years to be able to have the right to both work and study.
Increase awareness of relevant and attractive school curricula and opportunities for further education and training.	Project opportunities to learn through mass media, civil society organizations and other communication channels.

Table 6.2 Detailed list of policy options to Enhance Equity in Education in the MENA Region (continued)

Policy option	Comment
Demand-side interventions (continued)	
Employer driven and demand initiatives to increase demand for skill based training, pre-vocational education and post- employment apprenticeships and on the job learning.	Leverage private-sector initiatives to develop and recruit to demand led skills based training.
Regulation and pro-poor facilitation of not-for-profit private-sector providers of educational services.	Foster demand-led not for profit educational services designed to increase demand.
Prioritize hiring of females teachers, as a means towards increasing girls' education.	Under certain contexts lack of female teachers can negatively impact the demand of education particularly for girls.
Quality enhancements	
Invest in systems to track and manage learning achievement coupled with interventions to reduce learning gaps.	Examples include learning ladders, key stage learning outcomes, child tracking systems, and remediation rather than repetition.
Schools and district management systems to provide targets and incentives to reduce inequalities in access between schools, districts and zones.	Set targets for school administrators to reduce variance in levels of achievement between schools and within schools, without leading to negative side effects, such as incentives for cheating, or exclusion of vulnerable students.
Adopt multi-grade pedagogies in small schools with fewer teachers to reduce variations in learning time.	Develop multi-grade curricula and establish support systems to implement effective multi-grade pedagogies.
Monitor pupil and teacher attendance daily and design incentives and sanctions to reduce differences in time on task.	Generate incentives to promote regular and full attendance to maximize time on task and reduce inequalities.
Develop, distribute and support widely teachers guides based on evidence-based strategies to promote effective learning.	Commission teachers' guides, for low-price copyright-free distribution, which aim to reduce inequalities in outcomes.
Finance research on effective teaching including RCTs where appropriate and where they may have external validity.	Commission research on key questions around effective pedagogy with scalability and equity enhancing pedagogy.
Develop more school-based teacher training located in developmental teacher education institutions directly enrolled in improving school performance and school effectiveness.	Review and reform teacher education institutions to promote direct engagement and responsibilities for school improvement linked to reducing inequalities in access and achievement.
Generate incentives to improve the quality of applicants to teacher education programmes.	Explore the efficacy of fee waivers, scholarships, guaranteed job placements, and other incentives to attract capable entrants.
Manage the appointments of new teachers to reinforce and embed skills and capabilities acquired in initial training.	Define responsibilities for initial appointment, mentoring and confirmation of qualified teacher status to improve quality.
Enhance support for a formative assessment system linked to diagnosis of learning difficulties and interventions based on evidenced-based insight into cognitive acceleration.	Develop and institutionalize formative assessments in national curricula with evidenced-based grade diagnostic linked to effective intervention pedagogies to reduce gaps in levels of achievement.
Invest in improving the quality, relevance, reliability and predictive validity of high-stakes selection assessments.	Develop capacity and technical capability and research-based analysis of high-stakes assessment systems to improve positive backwash and equitable selection.
Address loss of teaching time due to teacher absenteeism.	Community-based monitoring and accountability at the school level can reduce teacher absenteeism.

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APPENDICES

APPENDIX A: DATA TABLES AND FIGURES

Table A.1 Primary adjusted net enrolment rate, and secondary net enrolment rate, by country and gender

Country	Primary adjusted net enrolment rate (%)				Lower secondary gross enrolment ratio (%)			
	Male	Female	Total	Year*	Male	Female	Total	Year*
Algeria	98.4	97.0	97.7		138.2	126.7	132.6	2009
Bahrain	99.1	99.6	99.3	2006	101.1	103.9	102.5	2006
Djibouti	57.2	51.0	54.2	2012	49.6	39.0	44.3	2012
Egypt			98.5	2010	94.8	93.2	94.0	2010
Iran (Islamic Republic)			99.9		104.1	99.2	101.7	
Iraq	94.5	83.7	89.2	2007	75.1	54.6	65.1	2007
Jordan	90.8	90.7	90.7	2010	92.6	94.7	93.6	2010
Kuwait	96.6	100	98.2	2008	108.7	111.4	110.0	2008
Lebanon	97.3	96.8	97.1		86.0	94.8	90.3	
Libya					115.7	114.9	115.3	2006
Morocco	90.0	85.4	87.7	2005	93.3	75.7	84.7	2012
Oman	98.4	96.8	97.6		107.4	107.1	107.3	
Palestine	89.9	89.6	89.8		84.6	90.1	87.3	
Qatar	95.3	94.6	94.9		98.4	100.1	99.2	
Saudi Arabia	96.6	96.5	96.6		110.2	98.0	104.2	2009
Sudan (pre-secession)					58.6	48.8	53.8	2009
Syria	99.5	99.7	99.6		93.8	90.7	92.3	
Tunisia			99.4		122.8	111.5	117.3	
United Arab Emirates	93.6	97.7	95.6	2006	96.3	96.3	96.3	2006
Yemen	82.8	69.7	76.4		67.3	43.5	55.6	

*Data are from 2011 unless stated otherwise.

Note: Red text indicates the gender parity index (female enrolment rate divided by male enrolment rate) is less than 0.97. Green text indicates that it is greater than 1.03.

Source: UIS (n.d.).

Table A.2 Primary completion rate[23] by country and gender

Country	Male (%)	Female (%)	Gender parity index (female/male)	Year*
Algeria	94.5	94.2	99.7	
Bahrain	107.5	107.0	99.6	2005
Djibouti	59.2	53.8	90.9	2012
Egypt	102.4	99.5	97.1	2010
Iran, Islamic Republic	106.5	105.6	99.2	
Iraq	74.5	55.4	74.4	2007
Jordan	101.3	101.4	100.1	2008
Kuwait	110.2	114.2	103.7	2007
Lebanon	84.9	89.2	105.1	
Libya	n/a	n/a	n/a	
Morocco	101.1	97.3	96.3	2012
Oman	106.4	107.7	101.2	
Palestine	90.2	91.7	101.7	
Qatar	96.1	95.6	99.6	
Saudi Arabia	106.9	105.4	98.6	
Sudan	60.8	54.9	90.3	2009
Syria	105.3	106.1	100.7	
Tunisia	90.4	92.0	101.8	2009
United Arab Emirates	98.0	101.4	103.4	2006
Yemen	72.2	53.3	73.8	

*Data are from 2011 unless stated otherwise.

Note: Red text indicates the gender parity index (female enrolment rate divided by male enrolment rate) is less than 0.97.
Green text indicates that it is greater than 1.03.

Source: UIS (n.d.).

[23] The primary completion rate as given here is the gross intake ratio to the last grade of primary school, that is, enrolment in the last grade of primary, minus repeaters, divided by the population of the correct age for that grade. The completion rate can exceed 100% due to over-aged and under-aged children (see http://glossary.uis.unesco.org/glossary/en/term/2050/en). Data are from 2011 unless stated otherwise.

Table A.3 Rate of transition[24] from primary to secondary education, by country and gender

Country	Male (%)	Female (%)	Gender parity index (female/male)	Year*
Algeria (2010)	100.0	97.1	97.1	2010
Bahrain (2010)	100.0	99.9	99.9	2010
Djibouti	92.6	80.6	87.0	
Egypt (2003)	92.4	95.0	102.8	2003
Iran, Islamic Republic (2010)	97.8	96.9	99.1	2010
Iraq	n/a	n/a	n/a	
Jordan (2007)	100.0	100.0	100.0	2007
Kuwait (2009)	99.9	99.5	99.6	2009
Lebanon (2010)	93.6	96.7	103.3	2010
Libya	n/a	n/a	n/a	
Morocco	92.3	84.5	91.5	
Oman	n/a	n/a	n/a	
Palestine (2010)	94.7	100.0	105.6	2010
Qatar (2010)	99.9	100.0	100.1	2010
Saudi Arabia (2007)	92.6	97.1	104.8	2007
Sudan (2008)	95.7	91.6	95.7	2008[25]
Syria (2010)	98.7	98.3	99.5	2010
Tunisia (2008)	93.8	95.1	101.4	2008
United Arab Emirates (2010)	91.8	100.0	109.0	2010
Yemen (2010)	93.3	87.8	94.1	2010

*Data are from 2011 unless stated otherwise.

Note: Red text indicates the gender parity index (female enrolment rate divided by male enrolment rate) is less than 0.97.
Green text indicates that it is greater than 1.03.

Source: UIS (n.d.).

[24] The rate shown is the "effective transition rate," calculated as follows: "the number of new entrants to the first grade of lower secondary education for the following year (t + 1) is divided by enrolment in the last grade of primary education (in the given year (t)) minus the number of repeaters from the last grade of primary education in the following year (t + 1)." (UIS, 2011, p. 14).

[25] For Sudan, the effective transition rate was not available and the figure given is the conventional transition rate – the number of new entrants to the first grade of secondary education as a percentage of the number enrolled in the final grade of primary education in the previous year. (http://glossary.uis.unesco.org/glossary/en/term/2050/en). This indicator may underestimate the transition rate when there is high repetition in the final grade of primary education.

Table A.4 Overage[26] enrolment ratio in primary education

Country	Male (%)	Female (%)	Total (%)
Algeria	12.5	7.6	10.1
Bahrain (2006)	7.1	5.6	6.4
Djibouti (2012)	7.4	6.8	7.1
Egypt (2004)	5.7	4.0	5.8
Iran, Isl. Rep.	5.1	3.5	4.3
Iraq (2007)	16.7	10.0	13.4
Jordan (2010)	1.3	1.2	1.2
Kuwait (2008)	2.8	2.4	2.6
Lebanon	9.9	7.4	8.7
Libya	n/a	n/a	n/a
Morocco (2005)	22.2	15.8	19.1
Oman	4.4	4.2	4.3
Palestine	2.3	1.6	1.9
Qatar	6.9	5.9	6.4
Saudi Arabia	9.7	9.3	9.5
Sudan	n/a	n/a	n/a
Syria	8.9	7.6	8.3
Tunisia	7.3	4.4	5.8
United Arab Emirates (2006)	3.9	3.2	3.5
Yemen	16.5	11.4	14.0

Note: Data are from 2011 unless stated otherwise.
Source: UIS (n.d.).

[26] Overage is defined as two or more years above the nominal age for the grade is assuming on schedule enrolment in Grade 1.

Table A.5 Percentage of repeaters,[27] by school level, gender and country

Country	Primary (%)			Secondary (%)		
	Male	Female	Total	Male	Female	Total
Algeria	9.2	5.5	7.4	23.4	13.4	18.3
Bahrain	1.2	1.1	1.2	4.8	2.2	3.4
Djibouti (2012)	9.0	9.1	9.1	7.7	7.1	7.4
Egypt (2010)	4.4	2.5	3.5	9.1	6.1	7.6
Iran, Islamic Republic	1.8	1.2	1.5	5.9	2.9	4.4
Iraq (2007)	18.8	14.4	16.8	26.6	14.1	21.3
Jordan (2008)	0.6	0.6	0.6	1.6	1.1	1.4
Kuwait	0.9	0.7	0.8	6.5	4.8	5.6
Lebanon	10.6	7.7	9.2	10.5	9.4	9.9
Libya						
Morocco (2012)	8.8	5.7	7.3	18.1	11.6	15.1
Oman	0.9	1.0	0.9	3.9	2.0	3.0
Palestine	0.6	0.6	0.6	2.4	2.4	2.2
Qatar (2008)	0.7	0.6	0.6	2.3	1.7	2.0
Saudi Arabia	1.9	2.1	2.0	1.7	1.4	1.6
Sudan (2009)	3.8	3.5	3.7	2.8	2.4	2.6
Syria	8.5	6.4	7.5	8.8	5.4	7.1
Tunisia (2009)	8.4	5.1	6.8	16.7	12.5	14.5
United Arab Emirates (2010)	2.1	1.9	2.0	3.8	1.8	2.8
Yemen	9.9	7.6	8.9	11.5	6.9	9.8

Source: UIS (n.d.); data are from 2011 unless otherwise stated.

[27] Reported repetition rates can have wide margins of error if they are based on self-reporting.

Table A.6 Years of education of 15-19-year-olds, by sub-national regions

Group 1	
Djibouti	
Djibouti	6.5
Other districts	6.0
Sudan	
Northern	8.7
River Nile	7.8
Red Sea	5.8
Kassala	5.1
Gadarif	5.3
Khartoum	9.2
Gezira	8.1
Wite Nile	7.3
Sinnar	6.2
Blue Nile	4.7
North Kordofan	5.8
South Kordofan	5.6
North Darfur	6.7
W Darfur	4.1
South Darfur	5.8
Yeman	
Ibb	6.6
Abyan	6.3
Sana'a City	8.5
Al Baidhah	5.3
Taiz	7.3
Al Jawf	4.1
Hajjah	4.0
Al Hodeidah	5.1
Hadramout	6.4
Dhamar	4.5
Shabwah	6.2
Sa'adah	5.4
Sana'a	5.7
Aden	8.5
Lahej	8.0
Mareb	4.6
Al Mahweet	4.2
Al Maharah	6.6
Amran	6.2
Al Dala'a	6.8
Raimah	4.5
Group 2	
Egypt	
Urban governorates	9.0
Lower urban	9.4
Lower Egypt rural	8.5
Upper Egypt	9.1
Upper urban	7.4
Upper Egypt rural	8.3

Iraq	
Dohuk	7.0
Ninewa	5.7
Suleimaniya	8.3
Kirkuk	6.4
Erbil	7.3
Diyala	6.5
Al-Anbar	6.1
Baghdad	7.0
Babil	6.1
Karbala	5.8
Wasit	5.4
Salahaddin	6.0
Al-Najaf	5.7
Al-Qadisiya	5.7
Al-Muthanna	4.8
Thi-Qar	5.6
Missan	4.8
Basrah	6.0
Palestine	
Jenin	8.5
Tubas	8.9
Tulkarm	8.6
Nablus	8.5
Qalqiliya	8.5
Salfit	8.0
Ramallah and Al-Bireh	8.2
Jericho	8.4
Jerusalem	8.5
Bethlehem	8.5
Hebron	8.0
North Gaza	9.0
Gaza	8.5
Dier El-Balah	8.8
Khan Yunis	8.7
Rafah	8.6
Palestinian in Lebanon	
Tripoli	8.0
Beirut	7.6
Beqaa	8.3
Saida	8.3
Tyre	8.1

Syria	
Damascus	8.8
Aleppo	7.1
Rural-Dam	8.3
Homs	8.2
Hama	8.2
Lattakia	9.1
Idleb	7.7
Hassake	7.4
Deir Ezzor	7.1
Tartous	9.1
Raqqa	6.6
Daraa	8.4
Sweida	9.4
Quneitra	7.7
Group 3	
Algeria	
North Centre	8.4
Northeast	8.6
Northwest	8.3
Highlands Centre	8.0
Highlands East	8.4
Highlands West	8.4
South	8.3
Iran	
Markazi	9.1
Gilan	9.4
Mazandaran	9.6
East Azarbayejan	9.0
West Azarbayejan	8.3
Kermanshah	9.0
Khuzestan	8.8
Fars	9.2
Kerman	9.2
Khorasan-e- Razavi	8.8
Esfahan	9.5
Sistan and Baluchestan	8.2
Kordestan	8.3
Hamedan	8.9
Chaharmahal and Bakhtiyari	9.2
Lorestan	9.1
Ilam	9.4
Kohgiluyeh and Boyerahmad	9.3
Bushehr	9.1
Zanjan	8.9
Semnan	9.7
Yazd	9.7
Hormozgan	8.7
Tehran	9.3
Ardebil	8.9

Table A.6 Years of education of 15-19-year-olds, by sub-national regions (continued)

Group 3 (continued)	
Iran (continued)	
Qom	9.2
Qazvin	9.1
Golestan	8.7
North Khorasan	8.6
South Khorasan	8.8

Jordan	
Amman	10.2
Balqa	10.4
Zarqa	10.2
Madaba	10.5
Irbid	10.5
Mafraq	10.2
Jarash	10.3
Ajlun	10.6
Karak	10.4
Tafiela	10.5
Ma'an	9.6
Aqaba	10.3

Tunisia	
District Tunis	9.8
Northeast	9.6
Northwest	9.2
East Central	9.4
Kasserine	7.9
Kairouan	8.7
Sidi Bouzid	8.8
Southeast	9.2
Southwest	9.7

Table A.7 Percentage of 15-19-year-olds who have completed at least lower secondary education, by gender, location (urban/rural) and wealth quintile

	Algeria	Djibouti	Egypt	Iran	Iraq	Jordan	Palestinian in Lebanon	Palestine	Sudan	Syria	Tunisia	Yemen
Male (%)	42.8	41.6	61.0	81.9	23.6	40.7	41.7	46.2	54.2	38.0	62.3	46.3
Female (%)	59.9	27.1	62.0	81.7	25.5	44.8	53.0	55.9	49.2	43.8	72.5	25.3
Male urban (%)	48.1	42.2	68.8	77.1	27.1	40.5	40.5	46.9	70.6	39.5	69.9	56.8
Male rural (%)	34.0	20.8	55.7	87.5	16.3	41.4	44.2	45.6	45.0	36.3	48.6	41.0
Female urban (%)	65.5	27.6	72.3	74.0	32.9	44.3	52.2	56.4	72.8	52.0	80.4	53.2
Female rural (%)	50.4	9.7	55.0	90.9	9.6	47.0	54.8	54.1	36.6	35.1	59.5	13.1
Poorest wealth quintile (%)	32.8	14.3	40.2	63.0	7.2	33.5	28.6	39.7	17.4	21.2	41.9	11.9
Second wealth quintile (%)	42.2	29.3	52.0	74.3	15.0	39.9	40.6	44.4	23.6	35.1	58.9	23.2
Middle wealth quintile (%)	50.2	32.4	65.7	81.5	19.1	41.5	47.1	49.9	42.7	40.0	66.2	33.9
Third wealth quintile (%)	58.9	42.8	72.0	87.8	29.6	48.7	57.2	55.4	68.0	45.3	81.5	43.2
Richest wealth quintile (%)	73.0	53.9	84.6	96.1	52.0	51.6	60.6	62.3	88.2	60.2	92.4	60.1
Total	**51.2**	**34.7**	**61.5**	**81.8**	**24.5**	**42.7**	**46.9**	**51.0**	**51.6**	**40.6**	**67.1**	**35.5**

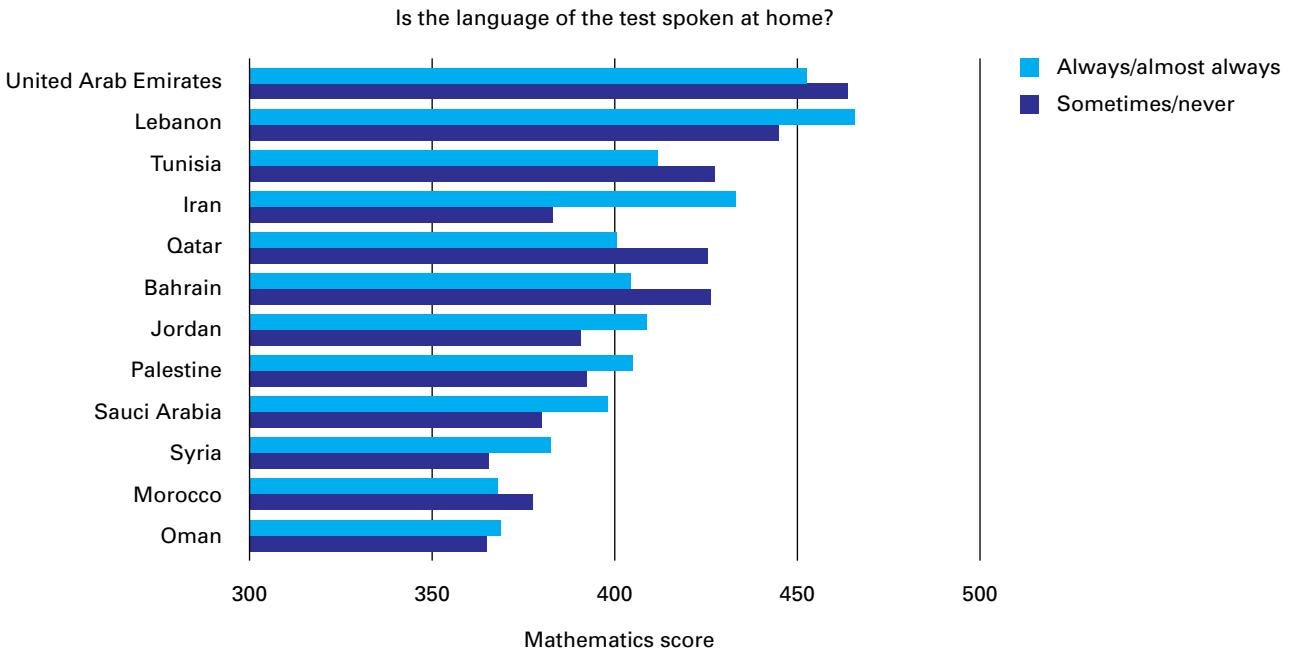
Source: Algeria MICS 2012, Djibouti MICS 2006, Egypt DHS 2014, Iraq MICS 2011, Iran (census 2006) IPUMS database, Jordan DHS 2012, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Sudan Household Health Survey 2010, Syria MICS 2006, Tunisia MICS 2011-12, Yemen MICS 2006.

Table A.8 Percentage of 20-24-year-olds who have completed at least lower secondary education, by gender, location (urban/rural) and wealth quintile

	Algeria	Djibouti	Egypt	Iran	Iraq	Jordan	Palestinian in Lebanon	Palestine	Sudan	Syria	Tunisia	Yemen
Male (%)	45.0	54.6	73.7	78.6	40.8	63.0	52.7	55.0	56.7	40.8	64.3	63.2
Female (%)	62.2	34.4	69.6	77.9	35.2	72.5	68.2	67.1	46.6	43.0	75.0	29.6
Male urban (%)	45.0	54.6	73.7	78.6	40.8	63.0	52.7	55.0	56.7	40.8	64.3	63.2
Male rural (%)	62.2	34.4	69.6	77.9	35.2	72.5	68.2	67.1	46.6	43.0	75.0	29.6
Female urban (%)	65.5	27.6	72.3	74.0	32.9	44.3	52.2	56.4	72.8	52.0	80.4	53.2
Female rural (%)	50.4	9.7	55.0	90.9	9.6	47.0	54.8	54.1	36.6	35.1	59.5	13.1
Poorest wealth quintile (%)	38.3	23.5	45.2	58.3	11.5	48.2	38.6	42.7	16.1	17.9	44.2	16.8
Second wealth quintile (%)	41.9	28.2	60.9	70.9	22.9	56.0	50.1	51.2	23.0	31.9	57.7	34.9
Middle wealth quintile (%)	52.4	37.2	72.7	78.7	30.8	67.3	63.5	57.0	36.4	41.5	67.8	43.2
Third wealth quintile (%)	57.3	55.2	84.3	85.0	43.2	76.8	67.5	67.0	66.0	47.3	81.4	50.4
Riches wealth quintile (%)	74.2	69.8	94.6	94.4	68.6	85.0	76.7	80.6	88.9	67.0	91.2	70.1
Total	**53.3**	**44.0**	**71.6**	**78.3**	**38.1**	**67.6**	**59.9**	**60.9**	**50.9**	**41.8**	**69.4**	**45.8**

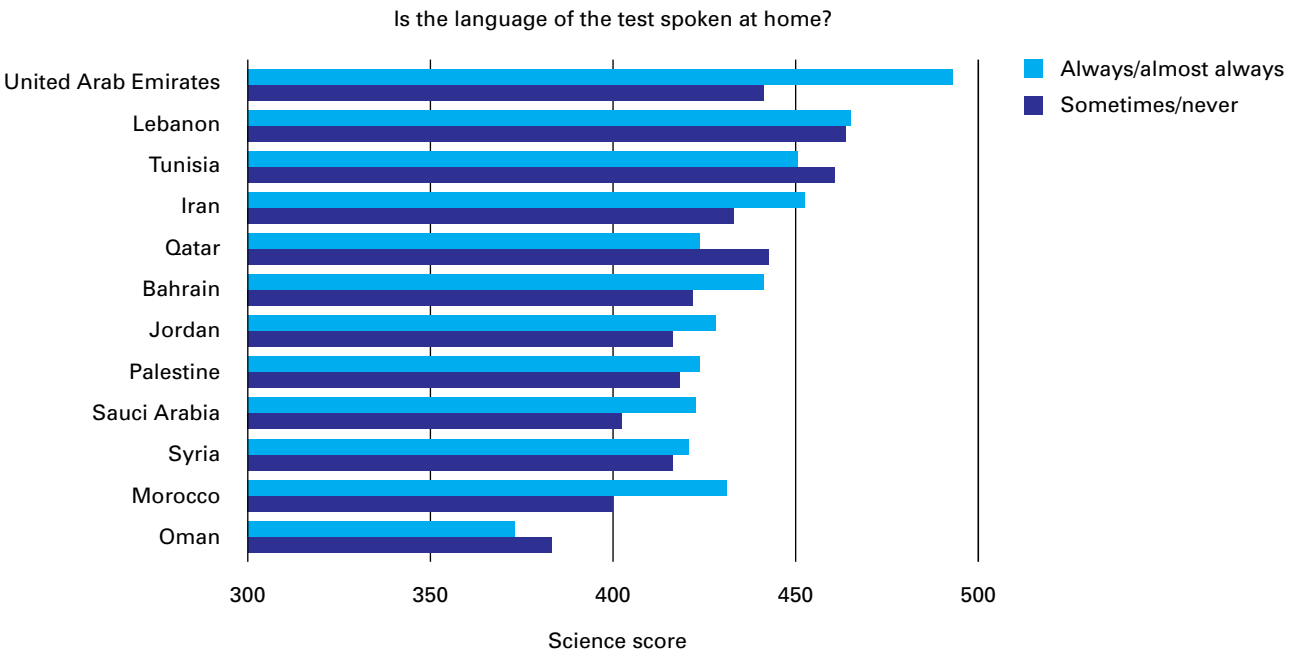
Source: Algeria MICS 2012, Djibouti MICS 2006, Egypt DHS 2014, Iraq MICS 2011, Iran (census 2006) IPUMS database, Jordan DHS 2012, Palestine MICS 2010, Palestinians in Lebanon MICS 2011, Sudan Household Health Survey 2010, Syria MICS 2006, Tunisia MICS 2011-12, Yemen MICS 2006.

Figure A.1 TIMSS mathematics score, according to whether the language of the test is also spoken at home, 2011



Source: TIMSS 2011

Figure A.2 TIMSS science score, according to whether the language of the test is also spoken at home, 2011



Source: TIMSS 2011

Table A.9 Size of labour force in 1990, 2000 and 2012, and percentage increase 1990-2012

Country	1990	2000	2012	Increase 1990-2012 (%)
Algeria	6,233,924	9,121,133	12,205,635	96
Bahrain	214,616	303,604	741,723	246
Djibouti	152,613	207,234	294,586	93
Egypt	17,035,841	19,687,527	27,193,916	60
Iran	14,114,842	19,032,765	26,129,887	85
Iraq	3,877,950	5,609,229	8,178,832	111
Jordan	668,387	1,218,806	1,718,877	157
Kuwait	784,499	957,754	1,662,315	112
Lebanon	754,907	1,022,818	1,636,637	117
Libya	1,193,099	1,781,944	2,305,489	93
Morocco	7,887,631	9,750,875	11,732,701	49
Oman	546,546	760,252	1,595,244	192
Qatar	273,230	332,190	1,541,663	464
Saudi Arabia	5,032,029	6,027,521	10,382,733	106
Sudan	5,740,338	8,129,866	11,645,635	103
Syria	3,298,048	4,922,502	6,313,323	91
Tunisia	2,453,608	3,200,864	3,930,458	60
United Arab Emirates	907,318	1,721,060	6,248,007	589
West Bank and Gaza	400,774	586,135	983,864	145
Yemen	2,473,684	4,208,544	6,858,155	177

Source: World Bank (n.d.). World Bank uses the term "West Bank and Gaza" instead of "Palestine".

Table A.10 Percentage of employment in agriculture and percentage of GDP due to agriculture

Country	Employment in agriculture (%)	Year	Value added from agriculture (% of GDP)	Year
Algeria	10.8	2011	9.3	2012
Bahrain	1.1	2010	n/a	
Djibouti	n/a		n/a	
Egypt	29.2	2011	14.5	2012
Iran	21.2	2008	n/a	
Iraq	23.4	2008	n/a	
Jordan	2.0	2012	3.1	2012
Kuwait	n/a		n/a	
Lebanon	6.3	2009	6.1	2012
Libya	n/a		1.9	2008
Morocco	39.2	2012	14.6	2012
Oman	5.2	2010	n/a	
Qatar	1.4	2012	n/a	
Saudi Arabia	4.7	2012	2.2	2012
Sudan	n/a		27.7	2012
Syria	14.3	2011	22.9	2009
Tunisia	16.2	2011	8.7	2012
United Arab Emirates	3.8	2009	0.9	2010
West Bank and Gaza	11.5	2012	n/a	
Yemen	24.7	2010	7.7	2010

Source: World Bank (n.d.). World Bank uses the term "West Bank and Gaza" instead of "Palestine".

Table A.11 Employment to population ratio, aged 15+ years, by gender, 2011

Country	Female (%)	Male (%)
Algeria	11.7	63.6
Bahrain	31.4	82.7
Djibouti	n/a	n/a
Egypt	17.4	68.9
Iran	13.8	66.0
Iraq	9.8	57.5
Jordan	12.0	58.9
Kuwait	42.5	80.7
Lebanon	20.3	64.6
Libya	24.1	68.7
Morocco	23.8	68.1
Oman	23.9	76.6
Qatar	50.3	95.0
Saudi Arabia	15.2	71.7
Sudan	26.2	71.5
Syria	10.2	67.3
Tunisia	21.2	60.0
United Arab Emirates	37.9	90.0
West Bank and Gaza	12.6	51.7
Yemen	18.6	63.3

Source: World Bank (n.d.). World Bank uses the term "West Bank and Gaza" instead of "Palestine".

Table A.12 Percentage of unemployment for youth aged 15-24 years, by gender

Country	Female (%)	Male (%)	Year
Algeria	37.5	18.7	2010
Egypt	54.1	14.7	2010
Iran	33.9	20.2	2008
Jordan	46.8	26.2	2011
Morocco	17.4	18.1	2011
Qatar	8.9	0.4	2011
Syria	40.2	15.3	2010
United Arab Emirates	21.8	7.9	2008
West Bank and Gaza	49.6	36.8	2010

Note: Countries shown are all those that have data available from 2008 or more recent.
Source: World Bank (n.d.). World Bank uses the term "West Bank and Gaza" instead of "Palestine".

APPENDIX B: DATA AVAILABILITY

Table B.1 Household surveys and standardized census data sets, 2003 or more recent

Country	MICS3	MICS4	DHS	Census	Other
Algeria	2006	2012-13			
Bahrain					
Djibouti	2006				PAPFAM 2011
Egypt			2008	2006	
Iran, Islamic Republic				2006	IrMIDHS 2010
Iraq	2006	2011			
Jordan			2012	2004	
Kuwait					
Lebanon					
Libya					
Morocco	2006*		2003-04	2004	ENPSF 2011
Oman				2010	
Palestine	2006*	2010		2007	
Palestinians in Lebanon	2006	2011			
Palestinians in Syria	2006				
Qatar		2012			
Saudi Arabia					
Sudan	2006*	2010		2008	
Syria	2006				Family Survey 2010
Tunisia	2006	2011-12			
United Arab Emirates					
Yemen	2006				

* Non-MICS3 surveys which include MICS3 modules (including education) and which have received MICS3 technical assistance (see http://www.childinfo.org/mics3_surveys.html).

Note: Data sets in blue are not available.

Table B.2 Learning assessment data sets

Country	TIMSS 2007	TIMSS 2011	PIRLS 2006	PIRLS 2011	PISA 2009
Algeria	■				
Bahrain	■	■			
Djibouti					
Egypt	■				
Iran, Islamic Republic	■	■	■	■	
Iraq					
Jordan	■	■			■
Kuwait	■	■	■	■	
Lebanon	■	■			
Libya					
Morocco	■	■	■	■	
Oman	■	■		■	
Palestine	■	■			
Qatar	■	■	■	■	■
Saudi Arabia	■	■		■	
Sudan					
Syria	■	■			
Tunisia	■	■			■
United Arab Emirates		■		■	■
Yemen	■	■			

Note: Dark blue cells indicate data are available. TIMSS is not available for both Grade 4 and Grade 8 in every case.

Table B.3 Data availability of TIMSS, Grade 4 and Grade 8, 2007 and 2011

Country	TIMSS 2007		TIMSS 2011	
	Grade 4	Grade 8	Grade 4	Grade 8
Algeria				
Bahrain				
Djibouti				
Egypt				
Iran Islamic Republic				
Iraq				
Jordan				
Kuwait				
Lebanon				
Libya				
Morocco				
Oman				
Palestine				
Qatar				
Saudi Arabia				
Sudan				
Syria				
Tunisia				
United Arab Emirates				
Yemen				
Abu Dhabi, United Arab Emirates				
Dubai, United Arab Emirates				

Note: Light green cells indicate data are available. Dark green indicates that the data includes students' home background.

Table B.4 Data availability of Early Grade Reading Assessments and Early Grade Mathematics Assessments

Country	Sample	Date
Iraq	1,153 students from 54 public primary schools in six provinces	May 2012
Jordan	3,120 students from 156 public primary schools across the country	May 2012
Morocco	773 students from 40 schools in the Doukkala Abda region	May 2011
Yemen	735 students in 40 schools in three governorates	Unknown

Note: Also see Appendix D.

APPENDIX C: AGE ADJUSTMENT IN HOUSEHOLD SURVEY DATA

Household surveys are often conducted part way through the school year. Therefore, children who were age x at the beginning of the school year, will in some cases have reached age x + 1 by the time of the survey. If the survey is more than six months after the start of the school year, then more than half of the children will have increased in age by one year, and it is appropriate to subtract one from their ages in order to get a better estimate of their age at the start of the school year.

Table C.1 lists the household survey sources used in this report together with the estimated dates of data collection – obtained either in survey reports or in the data sets themselves. The table also lists the data at the start of the school year according to the UIS database. In some cases, exploration of the data and reports reveal that some age adjustment has already been made, or is needed even though the survey was conducted close to the start of the school year. These pieces of information were combined to determine whether an age adjustment – i.e., subtracting one from children's ages in order to approximate their age at the start of the school year – is appropriate or not.

Table C.1 Data sources with dates of data collection and start of school year

Country		Year	Dates of data collection	Date of start of school year	Adjustment needed?
Algeria	MICS	2012-13	—	Sep 2012	No
Djibouti	MICS	2006	23 Jun-23 Aug 2006	Sep 2005	Yes
Egypt	DHS	2008	Mar-Jun 2008	Sep 2007	Yes
Iran	Census	2006	28 Oct-17 Nov 2006	Sep 2006	No
Iraq	MICS	2011	13 Feb-9 May 2011	Sep 2010	No
Jordan	DHS	2012	Sep-Dec 2012	Aug 2012	No
Lebanon (Palestinians)	MICS	2011	May 2011	Sep/Oct 2010	No
Morocco	DHS	2003-04	—	Sep 2003	No
Palestine	MICS	2010	24 Apr-12 Nov 2010	Sep 2009	No
Sudan	MICS	2010	Mar-Apr 2010	Jun 2009	Yes
Syria	MICS	2006	19 Apr-31 May 2006	Sep 2005	Yes
Tunisia	MICS	2011-12	—	Sep 2012	No
Yemen	MICS	2006	1-30 Sep 2006	Sep 2005	Yes

APPENDIX D: SUMMARY OF FINDINGS FROM THE EARLY GRADE READING ASSESSMENTS AND EARLY GRADE MATHEMATICS ASSESSMENTS IN MENA COUNTRIES

- **Iraq:** 1,153 students from 54 public primary schools in six provinces were sampled. By the end of Grade 3, the majority of students assessed had not yet acquired the foundational skills needed to read fluently with comprehension. In mathematics, children did better in tests relying on knowledge that could be memorized, and worse in those that required understanding and application of knowledge. Schools had adequate numbers of textbooks and exercise books, but infrastructure problems were a concern, as over three quarters of the classrooms visited were in need of repair. Observations of maths lessons revealed that the most time was spent on foundational skills such as number identification and reciting number words – contrasting with the observations in Morocco and Jordan. Teaching time is short in Iraq, at 544 hours per year, largely due to the short school year and shift system (Brombacher et al., 2012a).

- **Jordan:** 3,120 students from 156 public primary schools across the country were sampled. Children could answer fewer than two comprehension questions at Grade 2 and fewer than three at Grade 3. Regional differences in reading scores were not large. Girls tended to outperform boys. Little time was spent on letter sounds or isolated words. The curriculum focuses on these skills in Grade 1 and expects students to be reading connected texts by Grade 2. Teachers appear to stick to the curriculum regardless of students' mastery of the material covered. Few teachers said they used oral or written tests to plan teaching activities or adapt their teaching to students' needs. In mathematics, most students could answer the basic questions but around half struggled with more advanced addition and subtraction that they were expected to know at this level. Again, teachers pressed on with the curriculum even though students appeared not to have mastered the skills taught earlier in the year. The authors suggest a need for policymakers and school administrators to emphasize learning outcomes over curricular progression so that teachers can adjust lessons to meet the needs of students. (Brombacher et al., 2012b).

- **Morocco:** 773 students from 40 schools in the Doukkala Abda region were tested. Average reading speeds were below what could be considered fluency and the standard expected by the curriculum. On average, Grade 2 students were able to answer fewer than one out of six comprehension questions correctly, while Grade 3 students were able to answer fewer than two. In mathematics, 22 per cent of Grade 2 students could not answer a single addition question correctly, and many fell below the standard expected in the curriculum. Lesson observations revealed that lessons focused on students reading texts and reading comprehension activities, largely bypassing foundational skills such as sounds, sound-letter correspondence and isolated word reading. Similarly in mathematics lessons, the focus was on addition with two or more digits and multiplication; more basic skills such as number identification and counting were given relatively little time. Schools had sufficient numbers of textbooks but lacked non-textbook reading materials. The reported number of days of school closure and days of head teacher absence were found to be negatively correlated with student performance. Students' socioeconomic status was strongly correlated with their test performance (Messaoud-Galusi et al., 2012).

- **Yemen:** 735 students in 40 schools in three governorates were sampled. Early reading skills were low across all of the EGRA measures. Students had limited mastery of letters and the sounds associated with them, and so had little ability to read a text or answer comprehension questions about it. 27 per cent of Grade 3 students were unable to read a single word. On average, even in Grade 3, students could answer only 0.6 out of 6 questions correctly. Students who reported having missed school or arrived late during the previous week, who had fewer opportunities to practice reading, and who did not receive corrective feedback from teachers had worse reading performance (Collins and Messaoud-Galusi, 2012).

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