EXPECTATIONS AND ASPIRATIONS

A New Framework for Education in the Middle East and North Africa

OVERVIEW

WORLD BANK GROUP

Overview

Expectations and Aspirations

A New Framework for Education in the Middle East and North Africa

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Contents

Boxes

Figures

Tables

Foreword

In 1963, a country in the Middle East and North Africa region (MENA), Tunisia, made history when it convinced the World Bank to help it finance, develop, and promote its education system. Other countries followed, and the World Bank took the lead in investing in education across the world.

Fifty-five years later, in 2018, when it came to standing up and being counted, nine countries in MENA came forward and chose to be early adopters of the Human Capital Project. Many others followed.

These countries took this step in recognition of a difficult reality: that they were part of a region lagging in clever and efficient investments in its most precious asset—its people, and especially its youth. These countries also stood up with the determination to do better, work faster, and take on the formidable challenge of acting decisively to alter the course of history—and to offer a new, positive, forward-looking, and bold vision for their region, their countries, and their youth.

This book on the comprehensive reforms awaiting MENA's education systems arrives at a time of profound thought about the region, its potential, its future, and its place in a fast-changing and fast-paced world. It feeds into a dialogue opened by the World Bank and others with MENA countries on their education policies and the need for urgent and deep reforms. The report comes on the heels of the release, in October 2018, of the Human Capital Index, which measures how countries are preparing their citizens for a productive future, and which is revealing large gaps for countries in MENA. The index confirms that education is pivotal to building MENA's human capacity and to unleashing its human wealth.

The facts are telling, and they call for our attention. The youth in MENA have achieved much higher education levels than their parents, more than any region in the world. Unlike in other regions, however, this achievement has yet to translate into better opportunities and higher income.

MENA has the highest intergenerational mobility in education in the world, but its intergenerational mobility in income is low. The region's average spending on education is higher than the world average. In spite of that, its learning outcomes are among the lowest.

Girls are, by far, outperforming boys in learning outcomes—with the highest gender gap among all countries. Yet the region has the lowest female labor force participation rates in the world. MENA has the highest youth unemployment rates in the world; these

rates are mostly among the educated, especially women.

All of this makes for a huge loss of productivity for MENA economies. And all of this makes for the many paradoxes of MENA at large.

In recent years, the region has witnessed the devastating effects of the unmet expectations and unrealized aspirations of its population, especially youth and women. We ought to learn from those, still current, troubled times—learn and act.

There is today an immediate need for a compact with youth, one in which the World Bank will have to play an active and dynamic role. Above and beyond the diagnostics that any report can provide—and this one is a case in point—we need more innovative, leading-edge, creative, ambitious, and bespoke solutions for our partner countries. We need to point out the weaknesses and help to address them. This is where our effort and energy will go, for we firmly believe that the MENA countries and economies need to set a far-reaching goal for themselves—not only to close the gap in human capital but to leapfrog to a prosperous, peaceful, and stable future that meets the expectations and aspirations of its young people.

Ferid Belhaj
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Executive Summary

Education has a large untapped potential to contribute to human capital, well-being, and wealth in the Middle East and North Africa region (MENA).[1] In fact, it has been at the heart of the region's history and civilizations for centuries. In the 20th century, education was central to countries' struggles for independence, to building modern states and economies, and to defining national identities. Today, MENA has the lowest share of human capital in total wealth globally (Lange, Wodon, and Carey 2018). Although the region's young people have attained higher educational levels than their parents, they were not able to translate their educational attainment to greater income opportunities (Narayan et al. 2018). MENA has the highest absolute intergenerational education mobility compared to other regions in the world, but it also has low intergenerational income mobility. In most other regions, educational attainment and income mobility are well correlated (Narayan et al. 2018).

The 435 million residents of MENA are enduring a period of pronounced hardship. Ongoing threats to peace and economic stability are contributing to challenges across numerous sectors. Economic growth has remained persistently low in the aftermath of the Arab Spring (World Bank 2015a), youth unemployment rates have risen, and the quality of public services has deteriorated (Brixi, Lust, and Woolcock 2015; World Bank 2013). Even in relatively stable countries, labor market outcomes for the educated have worsened (El-Araby 2013; Krafft 2013; Rizk 2016; Salehi-Isfahani, Tunali, and Assaad 2009; Tzannatos, Diwan, and Ahad 2016). Exacerbating these challenges was the substantial downturn in the global oil market, which has placed more pressure on resource-rich countries (IMF 2017) and created an even more urgent need to push for human capital development across MENA.

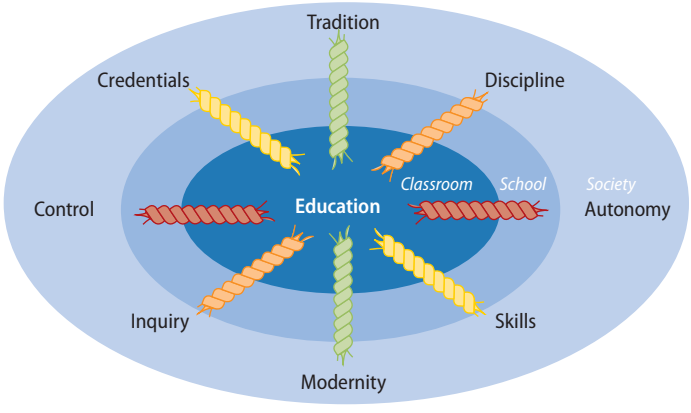
Despite large investments in education over the last 50 years, impressive growth in enrollment rates, and gender parity at almost all levels of education, MENA has not been able to fully reap the personal, social, and economic benefits of education. During these same 50 years, the Republic of Korea also invested in its human capital and succeeded in moving from a developing country in the early 1960s to one of the top 20 economies in the world today. Korea established a world-class education system, and its students consistently rank among the top in international learning assessments. By contrast, MENA

students have consistently ranked among the lowest on such assessments.

Although much has changed politically, economically, and socially in MENA, its education systems have largely remained unchanged. Over the past decade, new technologies have emerged and spread globally, disrupting the lives of billions and changing the nature of work. Consequently, the kinds of skills needed to succeed in the labor market are changing as well (World Bank 2019). The role of technology as a demand shaper in the future of work is certain, but its role as a delivery catalyst holds great potential that the region has not yet tapped. Indeed, technology is changing how today's students are being prepared to enter the future workforce—that is, it is influencing not only the ends of education but also the means. Technology presents a unique opportunity to help deliver high-quality education in a more efficient and effective manner.

MENA has the capacity and resources to leverage technology to create education systems that will build its human capital. The region has the tools and the opportunities to leapfrog and create prosperous and peaceful societies. However, the power of education to build human capital and to create change depends on its quality, its access to complementary economic and social environments, and its ability to leverage technology smartly.

FIGURE ES.1 Four tensions are holding back education in MENA



Source: World Bank.

Four tensions

The education process consists of a complex set of factors and actors at multiple levels. Factors outside the education system—political, economic, and social—formally and informally interact with the education system and shape its outcomes. Behavioral norms and ideological polarization among governments, interest groups, and citizens can hold countries back from delivering public goods (World Bank 2016). Education in MENA has been held back by these behavioral norms and ideological polarization, which are embodied in four sets of tensions (see figure ES.1): (1) credentials and skills; (2) discipline and inquiry; (3) control and autonomy; and (4) tradition and modernity. These tensions have held education back from evolving to deliver learning that prepares students for their future. The four tensions are deeply embedded in the region's history, culture, and political economy, but they exist to varying degrees in each country, and they largely define social and political relations. They have informed and shaped education policy in MENA countries since independence, and they are at the heart of the current national discourses on education reforms.

Schools and classrooms are the platforms on which these tensions are exercised through curricula, pedagogy, and the norms that define interactions among principals, teachers, parents, and students. These tensions ultimately shape the educational outcomes for young people in MENA and affect their lives, as well as the economies and societies in which they live. In an increasingly connected world, the effects of these tensions can reach beyond the region's borders. Unless they are addressed, MENA will not be able to reap the full benefits of education, no matter how much money is invested.

Credentials and skills. A credential in the form of a degree, diploma, or certificate is usually associated with acquiring a specific set of skills. In the labor market, credentials signal productivity based on the assumption that more years of education are associated with

higher productivity. Throughout MENA, public sector employment was historically guaranteed to anyone with a sufficient education credential. Thus, checking the credential box became more valued than acquiring skills. As a result, there is little or no link between education credentials and skills in MENA. Countries are stuck in a "credentialist equilibrium," in which a weak demand for skills and a strong demand for credentials in the labor market induce families to demand credentials from the education system more than skills (Salehi-Isfahani 2012). The education system, in turn, responds to their demands by providing credentials.

Discipline and inquiry. In societies in which social norms are strong, discipline ensures adherence to those norms. Concepts of discipline and inquiry are closely linked to pedagogy and curricula, as well as to the day-to-day interactions in schools among principals, teachers, and students. Overemphasis on discipline leads to memorization and passive learning. Across MENA, curricula depend heavily on rote memorization, leaving little time for the development of critical thinking skills. Although discipline is important, too much may constrict students' abilities to learn, think, explore ideas, or question concepts. Inquiry, by contrast, allows students to understand their surroundings, contextualize concepts through questions and experimentation, and build the skills they need to learn throughout life.

Control and autonomy. The tension between control and autonomy is embodied in the ongoing debate about the decentralization of education services delivery and the balance of power among central ministries, regional offices, and schools. Several MENA countries have experimented with aspects of education decentralization, autonomy, and accountability. The success of these efforts has varied. In some instances, a decentralized model to devolve decision making was rolled out, but it did not provide the means for implementation at local and school levels.

Tradition and modernity. According to some scholars, the greatest challenge facing MENA is aligning the development needs of a modern world and the moral imperatives of a religious society. The result is tension between modernity, or the forces of change, and tradition (Cook 2000). This tension can lead to conflicts within education processes (Massialas and Jarrar 1987). In MENA, modernity is frequently associated with Western models and approaches and is used by opponents of change to halt reforms. However, modernity is the process of renewing social norms, and there are multiple "modernities." The issue is not replacing tradition with modernity. Rather, it is allowing review of the traditional practices and norms that hold back the potential of education and engaging in a process of renewal that prepares students to better relate to a changing world.

Push, pull, and pact: A new framework for education

To realize the potential of education, MENA needs to tackle the four tensions and establish an education system that prepares all students for a productive and successful future. Such a system would be modern and flexible and would nurture a culture of excellence and creativity in learning. It also would leverage disruptive technologies and adopt modern approaches so it can offer young people the skills they need to define their trajectories in life and adapt to local, national, and global changes. Finally, it would be a system that would be based on a shared national vision and would connect with the overall development goals of the country. All of society would be responsible for ensuring its success. To establish such a system, MENA needs to adopt a new framework for education—one that includes a concerted *push* for learning, a wide-reaching *pull* for skills, and new *pact* for education (see figure ES.2).

The potential of education is achieved only when it confers the skills and knowledge that constitute human capital. It is, in fact, the skills conferred through learning that determine education's contribution to economic

FIGURE ES.2 "Push, pull, and pact" offers a new framework for education in MENA

Source: World Bank.

growth—not the years of schooling (Barro and Lee 2013; Hanushek and Woessmann 2008; World Bank 2018). MENA has succeeded in providing schooling; now it needs to achieve learning. The number of actual years of schooling has increased across MENA; several countries have reached an average that is close to a full cycle of primary and secondary education. However, when the number of actual years of schooling is adjusted for learning, the effective years of schooling in MENA are, on average, 2.9 less than the number of actual years of schooling. In other words, the poor quality of education in MENA is equivalent to approximately three lost years of education (World Bank 2018).

To pursue *a push for learning,* countries need to focus on seven areas:

1. Building the foundational skills—from early childhood through the early grades of school—needed for future learning and success.
2. Ensuring that teachers and school leaders, who are the most important inputs to the learning process, are qualified, well selected, effectively utilized, and incentivized to continue to develop professionally.
3. Modernizing pedagogy and instructional practices to promote inquiry, creativity, and innovation.
4. Addressing the language of instruction challenge presented by the gap between spoken Arabic and modern standard Arabic. The close connection among language, religion, and national identity makes it difficult to make a regional recommendation. Even though this phenomenon is a regional one, it manifests itself in many different ways in different countries. Hence, it needs to be addressed with a very specific formula in each country.
5. Applying learning assessments that regularly monitor student progress to ensure that students are learning.
6. Giving all children, regardless of gender, race, background, or ability, an opportunity to learn—a requirement for raising learning outcomes at the national level.
7. Leveraging technology to enhance the delivery of education and promote learning among students and educators and prepare students for an increasingly digital world.

To reap the benefits of education, MENA must align its *push for learning* with a *pull for skills*. Without a realignment of the labor market that increases the demand for skills, the contribution of the education sector to the economy will not be fully realized. A concerted push for learning can lead to some progress, but it is not enough to realize the full potential of education. Such a push would move education closer to fulfilling its potential, but it would be a second-best approach that would leave most of that potential untapped (Rodrik 2008). A first-best approach involves multisystem reforms that align the push for learning with a pull for skills. It includes economic reforms to bring the skills required in the labor market in line with those conferred by education and sought by parents and students, as well as efforts to address distortions in the education sector and beyond. Employers would shift from focusing on credentials to demanding skills. Parents and students could then demand skills from the education system, which would help MENA move away from a credentialist equilibrium to a skills equilibrium. Achieving this shift, however, will depend on employers doing a better job of signaling the skills they need. It will also depend on policy makers addressing rigid labor policies that discourage employers from seeking open,

transparent ways of hiring for skills. A pull for skills will depend as well on civil service reforms that support hiring, motivating, and empowering the best teachers and placing them where they are most needed.

Finally, a pull for skills will depend on curricula that reflect the skills that prepare students for social and economic life. Curricula reforms must, then, ensure alignment of what students learn with the skills they need. Curricula should serve as the nexus for the multiple spheres of society, the labor market, and the education system. Meanwhile, the shift from a credentialist equilibrium to a skills equilibrium should be evident in curricula. Systems are aligned when official curricula reflect the skills demanded by society and the labor market. Conversely, when official curricula are outdated and disconnected from real life, the result is a mismatch between what students acquire and what society and employers require.

Context matters. Education reforms in MENA through a push for learning and a pull for skills will not achieve the same results in all contexts. There are multiple models for transforming education. Finland and Korea were both top scorers in the 2015 Programme for International Student Assessment (PISA), a sign of strong learning. Yet the two education systems that produced this learning are quite different. MENA countries need to roll out reform efforts based on what is feasible in education, economic, and social reform—successful education reforms will depend on understanding the existing constraints (Rodrik 2008). How reforms are designed, introduced, approved, and implemented within a specific country also determines their success. The effectiveness of different policy options often depends on whether complementary conditions are in place and whether sufficient resources are available.

Making any substantial changes in education calls for tackling inefficient social norms that inhibit reform. Changing social norms is not easy, but it can be done. Raising awareness about the costs or inefficiencies of certain norms, or the benefits that would accrue to society from reforms, can help shift the social mindset. However, such an effort must be based on credible evidence not linked to any ideological or political rhetoric; it must focus on real, substantial reforms and not minor changes in policies (Khemani 2017). Changing laws can also lead to a shift in norms. However, enactment of laws alone is not sufficient; they must be strictly implemented and their compliance encouraged. A behavioral response to incentives in the short run can lead to longer-term shifts in behavior and social norms (World Bank 2015b).

A pact for education. Improving education is not the responsibility of educators alone; it must involve all members of society—politicians, businesspeople, and community and religious leaders, as well as parents, teachers, school principals, and students themselves. Education can potentially play many roles in an economy and society, but there are tensions among stakeholders' goals. By far, the most difficult are often-opposing views, strongly held convictions, and divergent interests. The dissonance across different stakeholders' goals for education is a substantial obstacle.

Establishing a new pact for education is therefore critical. The interests of the wide variety of stakeholders—including teachers, principals, inspectors, politicians, communities, employers, and students—need to be aligned by building powerful alliances. Doing this requires a unified vision that takes into account the four tensions holding back education, the local context, and the social norms that define the tensions. It also requires strong leadership to align interests and rally support around common national goals to which education must contribute. A new pact also will depend on a common sense that everyone is responsible and everyone is accountable in the provision of education—that is, accountability needs to go beyond the education system. Finally, a new pact requires reconciling investments and resources with the vision's priorities. High-performing education systems—such as those in Japan, Korea, and Singapore—are good examples of strong education pacts across stakeholders. These countries have

adopted a unified vision for education and have *consistently* and *coherently* instituted reforms to achieve human capital–driven economic growth (Wong 2017).

MENA has the history, culture, and resources to leapfrog into a future founded on a learned society and a knowledge economy. The region has great expectations and aspirations. Unleashing the potential of education is attainable, but it will take a commitment by all to make education not only a national priority but also a national emergency.

Note

1. The World Bank defines MENA as including these countries and economies: Algeria, Bahrain, Djibouti, Arab Republic of Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia, the United Arab Emirates, West Bank and Gaza, and the Republic of Yemen. This report excludes Malta from the analysis as it has little in common with the rest of the region.

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Abbreviations

CAL	computer-assisted learning
ECCE	early childhood care and education
ECD	early childhood development
ECE	early childhood education
EGMA	Early Grade Mathematics Assessment
EGRA	Early Grade Reading Assessment
GCC	Gulf Cooperation Council
ICT	information and communication technology
IDP	internally displaced person
LOI	language of instruction
MENA	Middle East and North Africa
MOOC	massive open online course
MSA	modern standard Arabic
OECD	Organisation for Economic Co-operation and Development
PBB	performance-based budgeting
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
STEM	science, technology, engineering, and mathematics
TIMSS	Trends in International Mathematics and Science Study

Overview

ان رصيد أي امة متقدمة هو أبناؤها المتعلمون وان تقدم الشعوب والأمم انما يقاس بمستوى التعليم وانتشاره – شيخ زايد ال نهيان

The credit of any developed nation is its educated children, and the advancement of people and nations is measured by the status and reach of their education.

—Shaykh Zayed Alnahyan

Education has large untapped potential for the Middle East and North Africa

Young people in the Middle East and North Africa region (MENA)[1] today have more educational opportunities and have attained higher educational levels than their parents. Among the world's regions, MENA ranks highest in terms of absolute intergenerational education mobility (Narayan et al. 2018). However, its high levels of educational attainment have not translated into greater income opportunities. Intergenerational income mobility in MENA is low. Educational attainment and income mobility are strongly correlated in most other regions and within the world's high-income countries, but not in MENA (Narayan et al. 2018). Families and individuals invest in education in the hopes of benefiting from good work opportunities in the labor market, but in MENA the private returns to education in the labor market are among the lowest in the world (Patrinos 2016). Beyond the labor market, education in MENA is only weakly associated with social outcomes such as civic engagement and participation in community issues, unlike in other regions (Diwan 2016).

MENA also has the lowest share of human capital in total wealth globally (Lange, Wodon, and Carey 2018). The contribution of education to human capital, economic growth, and social outcomes is well documented (Becker 1962; Lochner and Moretti 2004; Milligan, Moretti, and Oreopoulos 2004; Mincer 1974; OECD 2014; Sala-i-Martin, Doppelhofer, and Miller 2004). Education has a large, untapped potential to contribute to the human capital, well-being, and wealth of MENA (Lange, Wodon, and Carey 2018). It has been at the heart of the region's history and civilizations for centuries. In the 20th century, education was central to countries' struggles for independence,

to building modern states and economies, and to defining national identities.

MENA has made large investments in education over the last 50 years and has achieved impressive growth in enrollment rates and gender parity at almost all education levels. And yet all MENA countries—regardless of their geography, demography, economy, or society—have not been able to reap the full personal, social, and economic benefits of education. During these same 50 years, the Republic of Korea also invested in its human capital and succeeded in moving from a low-income country in the early 1960s to one of the top 20 economies in the world today. Korea established a world-class education system, and its students consistently rank among the top in international learning assessments. By contrast, MENA students have consistently ranked among the lowest on such assessments.

When asked in a 2017 World Bank MENA Facebook poll whether they thought education improves their chances in the job market in their country, 92 percent of respondents said "No," and one respondent said, "A thousand 'no's."[2] "What is taught in schools and universities has no relationship with work life or reality—time wasted in a failed system," wrote one respondent. "Education in our country is just to get a credential, and one ends up on a couch or in cafes with no work and a lost future for all students," wrote another. Thousands more expressed similar dissatisfaction with education in their countries. The frustration expressed by the Facebook poll respondents is not merely a perception; it is the reality facing millions of young people in MENA today. This can and should change.

Why has MENA not been able to realize the potential of education? How did the region whose educational excellence over five centuries drove innovation in science and social development and the region that catalyzed the European Renaissance and scientific revolution (Overbye 2001) become one of the worst performers in educational outcomes today? And why has the region not been able to improve despite significant investments over the last five decades? More important, what can MENA countries do to emerge from this impasse and retake their position as leaders in education and innovation? How can they unleash the potential of their human capital to create prosperous and peaceful societies?

MENA countries have an opportunity to realize the untapped potential of education and fulfill the expectations and aspirations of their young citizens and future generations. But some hurdles must be overcome. This report identifies four sets of tensions that are holding back MENA's education potential: (1) credentials and skills; (2) discipline and inquiry; (3) control and autonomy; and (4) tradition and modernity. These tensions are found within countries, societies, communities, and households and are manifested and reinforced in schools and classrooms. Unless they are addressed, no amount of investment in education can reap the full benefits. The report proposes a new framework that calls for a concerted push for learning, a stronger pull for skills, and a new pact for education. Despite challenging regional geopolitics, socioeconomic pressures, and global trends, MENA has the capacity and resources to create education systems that will build its human capital.

Much has changed in MENA—and the world—but education in MENA remains stuck

Today, the 435 million residents of MENA are enduring a period of pronounced hardship. Ongoing threats to peace and economic stability are contributing to challenges across many sectors. Economic growth has remained persistently low in the aftermath of the Arab Spring (World Bank 2015b); youth unemployment rates have risen; and the quality of public services has deteriorated (Brixi, Lust, and Woolcock 2015; World Bank 2013a). Even in relatively stable countries, labor market outcomes for the educated have worsened (El-Araby 2013; Krafft 2013; Rizk 2016; Salehi-Isfahani, Tunali, and

Assaad 2009; Tzannatos, Diwan, and Ahad 2016). Exacerbating these challenges is the substantial downturn in the global oil market, which has placed more pressure on resource-rich countries (IMF 2017) and has created an even more urgent need to push for human capital development across MENA.

Although MENA countries vary substantially in their economic development, as well as in the nature of the social and political issues they face, they share many characteristics and challenges. The Arab countries that form the larger part of MENA share a common language and much of their history and culture. Many countries in the region have parallel education histories, which include some of the earliest universities in the world and substantial historical contributions to human knowledge and development (Abi-Mershed 2010; Rugh 2002). More recently, as a result of similar postindependence trajectories, there has been a substantial overlap in pedagogical methods and labor market issues. And throughout the region, education quality and learning outcomes have faced many of the same challenges.

A decade ago, the World Bank addressed the crisis in education quality in MENA in *The Road Not Traveled: Education Reform in the Middle East and North Africa* (World Bank 2008). It noted that MENA countries had succeeded in engineering an education system focused mainly on inputs, such as building schools, but they had done little to change the incentives and behavior of educators. The report proposed a new road toward education systems built on improving incentives and public accountability, on the one hand, and achieving an equilibrium in the labor market between the supply of educated individuals and labor demand, on the other. MENA countries have indeed embarked on numerous reforms in their education sectors, but with little or no success. In some instances, the reforms have been piecemeal or uncoordinated or have failed to tackle the fundamental issues. In others, they have not been sufficiently funded or communicated to stakeholders. Meanwhile, too often education reforms have paid insufficient attention to how the education sector interacts with other sectors, broader socioeconomic and political trends, and the behavioral norms and interests of various groups.

In the 10 years since *The Road Not Traveled*, much has changed in the region and the world, but MENA's education systems remain stuck, "engineering" to meet the high demand of a large and growing school-age population with the same delivery mechanisms of previous decades. During this decade, MENA countries have spent an average of 4.5 percent of their national income on education, and more than 15 million additional boys and girls have enrolled in schooling at all levels.[3] At the same time, the political economy landscape has changed drastically. From the 2011 Arab Spring arose a public outcry for better basic services and equal opportunities that changed long-standing dictatorships in the Arab Republic of Egypt, Libya, and Tunisia; amended constitutions in Jordan and Morocco; and altered the status quo in almost every county in the region. The Syrian Arab Republic and the Republic of Yemen continue to struggle with civil war (see box O.1), which has generated one of the worst refugee crises of all time. It has inflicted great suffering on millions of refugees across the region and the world and imposed serious constraints on host communities (Brussels Conference 2019; UNHCR 2019a).

The past 10 years have also been marked by remarkable technological advances. At the time of *The Road Not Traveled* report, the iPhone was one year old, Twitter was just taking off, and Facebook users numbered around 145 million globally (Guardian 2014). By 2016, there were 107 mobile subscriptions per 100 persons in MENA countries,[4] and by 2017 there were almost 100 million active social media users (Radcliffe and Lam 2018). Of the 2.1 billion current Facebook users, more than 100 million are in MENA. The social network WhatsApp, which was launched in 2009, has 1.5 billion users globally. Today, more than two-thirds of young Arabs use Facebook and WhatsApp. Furthermore, YouTube, which was three years

Box O.1 Conflict has taken a large toll on education in MENA

MENA has been rattled by violent conflict and protracted crises for years, forcing millions of people to leave their homes in search of safety and security. Although MENA is home to just 6 percent of the world's population, it hosts more than a third of the world's refugees and about a quarter of the world's conflict-related internally displaced persons (IDPs).[a] This situation has put great pressure on the host countries' education systems. For example, in 2018–19 Lebanon absorbed almost 213,000 non-Lebanese students in public schools, the majority of whom were accommodated by opening second shifts in 346 public schools across the country (Ministry of Education and Higher Education, Lebanon 2019). Jordan also operates 209 public double-shift schools and provides nonformal education services run jointly by international organizations and the Ministry of Education (Government of Jordan 2018). In addition to schools, host countries face other challenges in providing suitable education services for IDPs. For example, host countries often lack information about the education systems in refugees' countries of origin. Refugees also may not have the requisite documentation, or the receiving countries may not be able to verify the authenticity of their documents (ESU 2017).

At the tertiary level, only about 5 percent of Syrian refugees ages 18–24 in host countries across MENA are enrolled in higher education (European Commission 2018). Because tertiary education is not a priority in emergency assistance programs, funding remains a major roadblock (European Commission 2017; Nakweya 2017).

The education infrastructure and services in conflict countries have been heavily affected. For example, in the 16 cities that suffered heavy fighting during the war in Iraq, only 38 percent of the total school infrastructure remains intact, and 18 percent (190 facilities) was destroyed (World Bank 2018b). Two-thirds of schools in the Republic of Yemen need repairs (UNICEF 2018). In Syria, about one-third of school buildings have been damaged or destroyed, are occupied by parties to the conflict, or are being used to shelter IDPs (Brussels Conference 2017).

a. See IDMC (2019); UNHCR (2019a, 2019b); UNRWA (2019); World Bank, World Development Indicators database.

old in 2008, currently has 1.5 billion users globally, and Saudi Arabia is its biggest market in per capita consumption. Young Saudi Arabians ages 15–24 spend on average 72 minutes a day watching online videos (Radcliffe and Lam 2018). At the same time, the world and the region have seen a sharp increase in EdTech—information and communication technology (ICT) applications aimed at improving education—investments, which reached a record US$9.5 billion in 2017 (Shulman 2018). Khan Academy, which opened its doors in 2008, uses YouTube to provide lessons to millions.

Meanwhile, technological advances, automation, and innovation are increasingly shaping new jobs and changing the nature of work. Although manual manufacturing jobs are being automated, technology has the potential to create new jobs and increase productivity (World Bank 2019). The role of technology as a demand shaper for the future of work is certain, but its role as a delivery catalyst is an opportunity that needs to be leveraged. That will require investment in human capital, education, and new skill sets in MENA.

Although much has changed politically, economically, and socially in MENA over the last decade, their education systems to a large extent have remained the same. Education has the potential to fuel important economic and social contributions, but its power to create change depends not only on its quality but also on complementary economic and social environments and the ability to leverage technology smartly.

Four tensions are holding back education in MENA

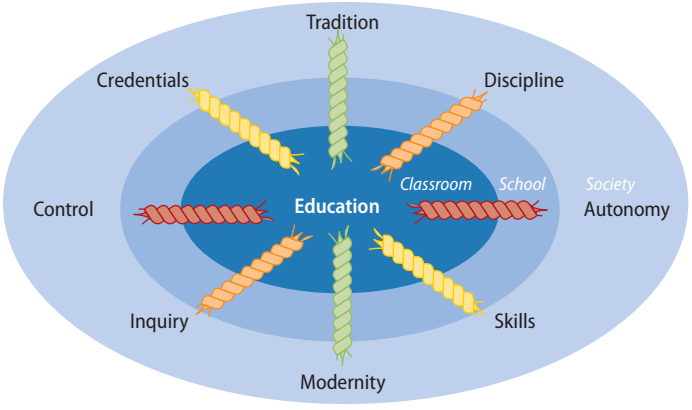
The education process consists of a complex set of factors and actors at multiple levels. Factors outside the education system—political,

economic, and social—formally and informally interact with the education system and shape its outcomes. Behavioral norms and ideological polarization among governments, interest groups, and citizens can hold countries back from delivering public goods (World Bank 2016b). In MENA, education has been held back by these complex interactions, behavioral norms, and ideological polarization, which can be captured in four sets of tensions: credentials and skills, discipline and inquiry, control and autonomy, and tradition and modernity (see figure O.1).

These tensions are deeply embedded in the region's history, culture, and political economy. They are reflected to varying degrees in all countries in the region, and to a large extent they define social and political relations. They have informed and shaped education policy in MENA countries since independence, and they are at the heart of current national discourses on education reforms. These tensions have held education systems from evolving and delivering the skills that prepare students for their future. Schools and classrooms are the platforms where these tensions are exercised through curricula, pedagogy, and the norms that define interactions among principals, teachers, parents, and students. These tensions ultimately shape the education outcomes of young people in MENA and affect their lives, as well as the economies and societies in which they live. In an increasingly connected world, the effects of these tensions can reach beyond the region's borders. Unless these tensions are addressed, MENA will not be able to reap the full benefits of education, no matter how much money is invested.

Four features of these tensions are noteworthy. First, they are not mutually exclusive, and they coexist along a continuum. The challenge for countries is to determine where they want to be on the continuum and what balance would be optimal to deliver the desired outcomes. Second, the four tensions overlap in some areas and can reinforce each other. For example, notions of control and autonomy could also be associated with discipline and inquiry or tradition and modernity. Third, the tensions are neither unique to MENA nor time-specific. Throughout history, countries across the world have struggled with these tensions in defining their goals and policies. Fourth, no one position applies to every country or region. Each country, based on its national development goals and vision, needs to decide where it wants to place its education system within these tensions.

FIGURE O.1 Four tensions are holding back education in MENA



Source: World Bank.

Credentials and skills

The tension between credentials and skills has been a source of debate for almost 50 years. Since the 1970s, economists and sociologists have argued about the links between education, skills, and the labor market, using numerous theories and models, such as Becker's human capital theory (Becker 1962), Collins's credentialist theory (Collins 1979), and Spence's signaling model (Spence 1973). A credential in the form of a degree, diploma, or certificate is usually associated with the acquisition of a specific set of skills or knowledge. In the labor market, credentials signal productivity, based on the assumption that more years of education are associated with higher productivity (Page 2010). Credentials also bestow a certain status in society, where a higher degree is associated with higher status and figures in matters such as marriage.

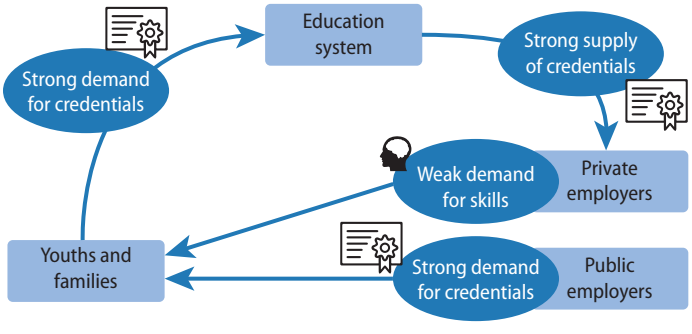
The history of education as a tool to generate bureaucrats for the public sector shaped the current structure of the education system and labor market in MENA. Public sector employment was typically guaranteed for anyone who had a sufficient education credential—diploma or degree. The requirement was more for the credential—the diploma or certificate—than for the skills. As a result, MENA countries have become societies in which there is little or no link between education credentials and skills (Assaad, Krafft, and Salehi-Isfahani 2018). In the meantime, little pressure has been placed on education institutions to ensure that credentials mean that the graduate possesses the relevant skills.

Although the size of the public sector as an employer has declined in many MENA countries, its legacy continues in the form of a "credentialist equilibrium" (Salehi-Isfahani 2012). In such an equilibrium, public sector employers communicate a strong demand for credentials, and the private sector's signals for skills are weak. Responding to market signals, students and families focus more on the credential (degree or diploma) and less on the skills and competencies that these credentials would ideally represent (see figure O.2).

The credentialist equilibrium in MENA countries has been created in part by imbalances in the labor market, where the large public sector is the preferred employer (Barsoum 2015; World Bank 2013a). In addition to higher wages, the desire for public employment is motivated by greater prestige, more generous benefits, and a better work environment, particularly for women (Barsoum 2015). Expectations of the public sector are also high because employment opportunities are often treated as a right, further disconnecting these opportunities from education. Several regional constitutions include the "right to work," engendering a common attitude that employment should be provided by the government and not by the private sector (Barsoum 2015). That attitude is a legacy of the government employment guarantees that were part of the region's social contract (Assaad 1997, 2014). The high wages and outsized role of government employment in MENA crowd out the private sector (Behar and Mok 2013; Nabli 2007), and government strategies to increase high-quality private sector employment have largely failed, resulting in poor or limited opportunities for new graduates (Dahi 2012; Salehi-Isfahani 2012; Springborg 2011) and reducing the demand for skills.

The notion of reducing public sector employment, a key aspect of a new Arab social contract, has gained little traction in the region (Devarajan and Ianchovichina 2017). Since the Arab Spring, calls for a new social contract have not yielded meaningful change in the role of the public sector. In fact, Egypt, Jordan, and Tunisia have all raised public salaries to stem further protests (Capital Economics 2017). While placating social discontent and temporarily supporting the economy, this approach also reinforces the notion that public sector employment is the only path to high salaries, career growth, and status within society—and so it will keep the region stuck in a credentialist equilibrium.

FIGURE O.2 **MENA is stuck in a credentialist equilibrium**



Source: Adapted from Assaad, Krafft, and Salehi-Isfahani 2018.

Discipline and inquiry

The terms *discipline* and *inquiry* have multiple meanings and uses. Here, *discipline* is defined as "the practice of training people to obey rules or a code of behavior" (*Oxford*) or "training that corrects, molds, or perfects the mental faculties or moral character" (*Merriam-Webster's*). *Inquiry* is defined as

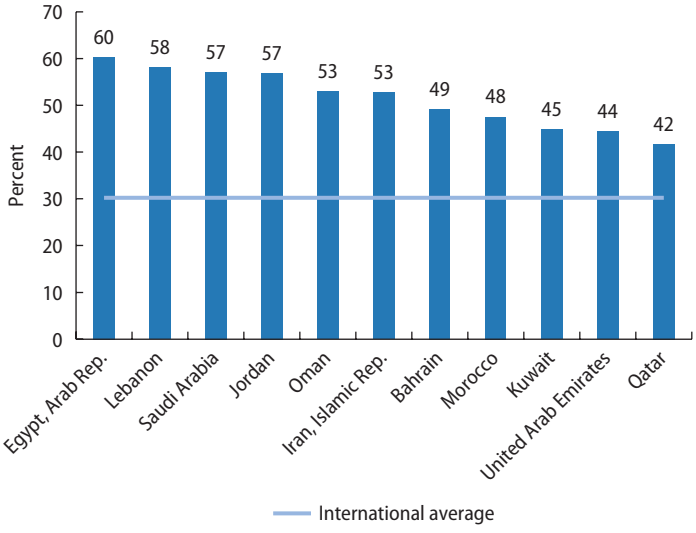
"an examination into facts or principles" (*Merriam-Webster's*). In societies with strong social norms, discipline is a key factor in ensuring adherence to norms. Although discipline in respect and self-restraint is important, too much restraint may constrict students' ability to learn, think, explore ideas, or question concepts. Inquiry, by contrast, allows students to understand their surroundings or contextualize concepts through questions and experimentation.

Some degree of discipline is important and necessary, but violent discipline[5] negatively affects children's physical, psychological, and social development and hampers their learning and school performance, ultimately reducing human capital development (El-Kogali and Krafft 2015; UNICEF 2010). Violent child discipline is widespread in MENA. In a study of 50 countries, UNICEF (2013) found that MENA has the highest percentage of children ages 2–14 years who are violently disciplined, ranging from 79 to 95 percent in Algeria, Egypt, Iraq, Morocco, Syria (pre-conflict), Tunisia, West Bank and Gaza, and the Republic of Yemen (El-Kogali and Krafft 2015).

Concepts of discipline and inquiry are closely linked to pedagogy and curricula, as well as to the day-to-day interactions of students with teachers; the emphasis on discipline leads to passive learning and memorization. Across MENA, curricula focus heavily on rote memorization, leaving little time for the development of critical thinking skills. According to teachers, the share of grade 8 students required to memorize mathematics and science rules, procedures, and facts for all or most lessons in many MENA countries is almost twice the international average (see figure O.3). The share exceeds 50 percent in Egypt, the Islamic Republic of Iran, Jordan, Lebanon, Oman, and Saudi Arabia, which is far above that in many high-performing countries. For example, only 10 percent of grade 8 students in Canada and New Zealand are required to memorize during most mathematics lessons, 11 percent in Sweden and the United States, and 14 percent in Ireland and Singapore. Because of the emphasis on memorizing rules, procedures, facts, and principles, students are unable to show a basic understanding of everyday applications. In the 2015 Trends in International Mathematics and Science Study (TIMSS), fewer than half of Morocco's grade 4 students could read a basic graph. And only about 55 percent of Egypt's and Saudi Arabia's grade 8 students could interpret a basic pictogram (Mullis et al. 2016).

FIGURE O.3 MENA students are more likely to be asked to memorize

Percentage of grade 8 students asked to memorize science facts and principles for every lesson or almost every lesson, 2015



Source: Martin et al. 2016.

The overemphasis on memorization of facts, principles, rules, and procedures does not negate the fact that some knowledge needs to be retained. Rather, it is a question of the degree of emphasis and the overall experience of the child in the classroom. Cognitive science provides information that allows a more nuanced understanding of the balance between rote memorization and higher-level processes such as discovery learning. The capacity to solve problems and to think critically about new material depends on background knowledge retained in one's memory (Kirschner, Sweller, and Clark 2006). Repeated reflective practice is fundamental to building flexible knowledge and skills. In addition, students need guidance from teachers to develop the knowledge and skills that

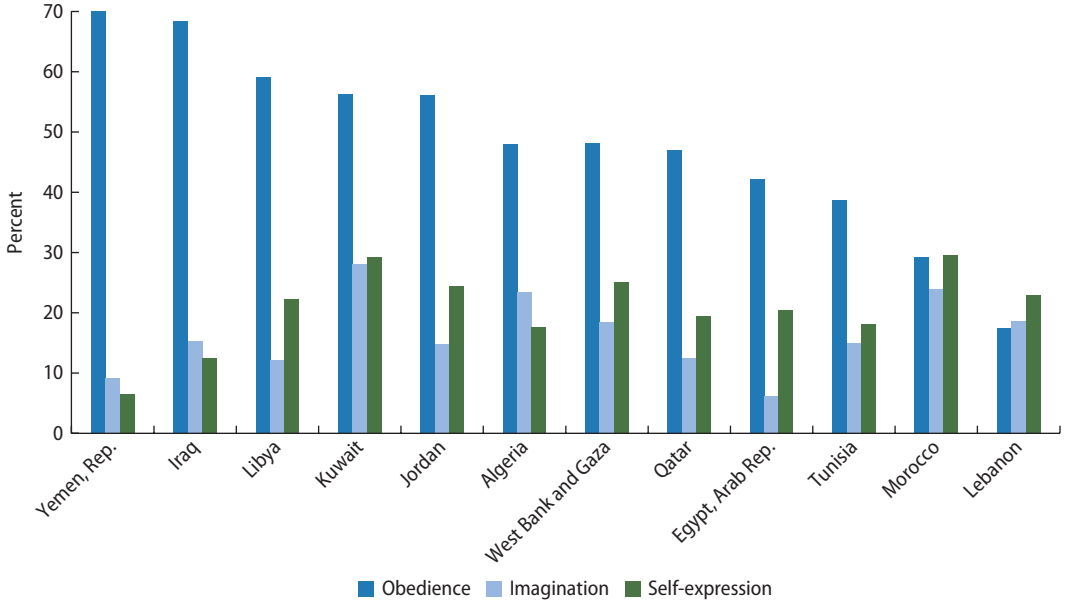
can facilitate independent, complex cognitive work. Therefore, ideally there is a balance between rote memorization and high-level problem-solving, and, depending on the task and level, it is a matter of striking the appropriate balance.

The tension between discipline and inquiry also reverberates in higher education, where it may hamper the push for solution-focused, multidisciplinary, high-impact research (World Bank 2017a). Effective postsecondary education programs emphasize practical training instead of theoretical knowledge. Mounting evidence provided by the cognitive and learning sciences indicates that interactive approaches facilitate an effective learning experience (Barkley, Cross, and Major 2005; Prince 2004). This combination allows future graduates to broaden their perspectives and equips them with the skills to enter the labor market. But postsecondary education programs in MENA are skewed toward theory over practice; they tend to have outdated curricula focused on theory and memorization, as opposed to practical knowledge and analytical reasoning (El Hassan 2013).

The tension between discipline and inquiry also applies to relationships such as those between teachers and principals and between parents and their children. In many MENA countries, obedience is viewed as an especially important quality that children should be encouraged to learn at home. Inquiry-driven qualities, such as imagination and self-expression, are emphasized less often (see figure O.4). Moreover, the tension between discipline and inquiry is also found in societies with strong social norms for class, gender, or hierarchy. For example, a recent comprehensive household survey of men and women ages 18–59 revealed that 90 percent of men and 58 percent of women in Egypt agree with the statement "A man should have the final word about decisions in the home" (UN Women

FIGURE O.4 Obedience plays a central role in children's education in MENA

Percentage of survey respondents who mentioned obedience, imagination, or self-expression as especially important qualities that children can be encouraged to learn at home



Source: World Values Survey, Wave 6 (2010–14), from Inglehart et al. 2014.
Note: These results are drawn from the following question: "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five." Potential answers included independence, hard work, feeling of responsibility, imagination, tolerance and respect for other people, thrift/saving money and things, determination/perseverance, religious faith, unselfishness, obedience, and self-expression.

and Promundo 2017). Results were similar in West Bank and Gaza (80 percent of men and 48 percent of women) and Morocco (71 percent of men and 47 percent of women). These social norms may negatively affect the attitudes of girls and women toward inquiry and their right to ask questions both at home and in other settings such as school, university, or work.

Control and autonomy

The tension between control and autonomy is usually associated with the debate on decentralization of services and the balance of power between central ministries, regional offices, and schools. The goal of decentralization is typically to improve governance by fostering autonomy, accountability, and responsiveness to local conditions and needs. These attributes can improve student learning. Over the last few decades, several MENA countries experimented with some aspects of decentralization, deconcentration, and devolution of authority from the central to the regional and school levels, but their education systems remain highly centralized. The success of attempted decentralization has varied. In some instances, the decision-making power was authorized but was not supported by the resources needed to implement decisions. For example, decentralization in Egypt in 2002–07 was not supported by sufficient financial resources (Ginsburg et al. 2010). Decentralization in Saudi Arabia in the 2000s appears to have been adequately funded, but the tasks and duties transferred to the local level were more administrative than geared toward the development of local schools (Almannie 2015). In other instances, a decentralized model was rolled out in a policy without putting in place the capacity to carry out the decentralized functions at the regional or school level. For example, Morocco's regional academies for education and training (académies régionales d'éducation et de formation) were only granted autonomy to manage some logistical and financial decisions based on guidelines provided by the central government (World Bank 2015d).

There is no magic formula for balancing centralized control and autonomy in education. It must be determined within the country context, with size, geography, and population distribution playing important roles in the decision. What is important is finding the balance in defining the roles and responsibilities of institutional actors (for example, the central government, local government, and communities) and defining the locus of control of the education processes and mechanisms used to steer the system (World Bank 2005). In other words, the balance between central control and autonomy should reflect the roles and responsibilities of central versus local governance and political versus professional power and accountability.

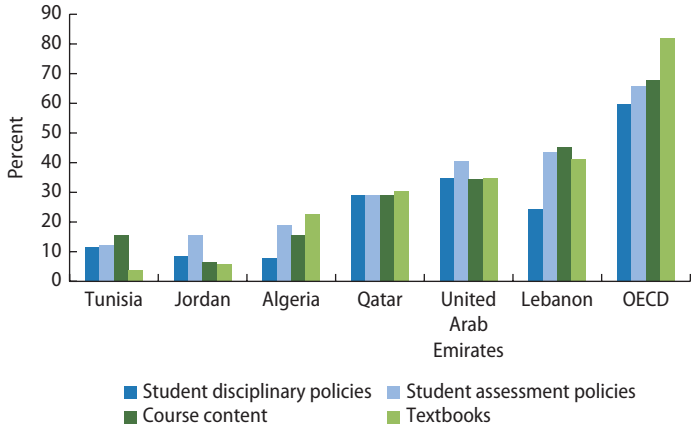
Limited autonomy at the school and classroom levels can constrain efforts by principals and teachers to be proactive in the learning process and prevent them from taking responsibility for student learning outcomes if they consider themselves as merely implementing a centralized approach (Karami Akkary 2014). Teachers in MENA have far less decision-making responsibility than those in member countries of the Organisation for Economic Co-operation and Development (OECD) (see figure O.5). Studies in the Islamic Republic of Iran, Jordan, and Kuwait have found that central authorities maintain strict control of curricular content and teaching practices, leaving little autonomy for teachers (Afshar and Doosti 2016; Al-Yaseen and Al-Musaileem 2015; Namaghi 2009; World Bank 2015a).

Limited autonomy among teachers compromises job satisfaction and the development of student skills, in part because it impedes the ability of teachers to teach to the right level for their students, a critical element of effective teaching (Evans and Popova 2015). Limited autonomy at the regional, provincial, and school levels for the hiring and deployment of teachers also limits the ability to match teacher characteristics better with teaching needs.

Greater autonomy in higher education institutions tends to be associated with better

FIGURE O.5 Teachers in MENA have less autonomy than teachers in OECD countries

Percentage of 15-year-old students attending schools in which teachers have considerable responsibility for instructional decisions, PISA 2015



Source: OECD 2016a.
Note: OECD = Organisation for Economic Co-operation and Development; PISA = Programme for International Student Assessment.

performance (Aghion et al. 2009; World Bank 2011). However, most universities in MENA have very limited autonomy over academic, staffing, and financial matters. In 2012 the World Bank benchmarked the governance practices of 100 universities in Algeria, Egypt, Iraq, Lebanon, Morocco, Tunisia, and West Bank and Gaza (World Bank 2013c). Institutional autonomy was very low among public universities, with the local or central government making decisions about matters such as the academic program, hiring teaching faculty, and fundraising. Private universities, by contrast, enjoyed much greater autonomy across all seven MENA economies surveyed (World Bank 2013c). In a follow-up survey in 2016, autonomy did not seem to have changed much for both public and private universities (World Bank 2017b).[6] A comparison of self-assessment and actual scores revealed that public institutions perceive their autonomy to be higher than the autonomy score in the external evaluation, whereas private universities have a more accurate perception of their autonomy (World Bank 2017b).

Greater autonomy at a decentralized level requires capacity, resources, and accountability mechanisms. When autonomy and accountability are combined well, they tend to be associated with better student performance (OECD 2011b). Schools with more autonomy over teaching content, student assessment, and resource allocation tend to perform better than those with less autonomy. Ultimately, MENA school systems must find the balance between control and autonomy that will best support learning and provide schools with the resources and flexibility to establish and achieve ambitious goals for student learning.

Tradition and modernity

According to some scholars, the greatest challenge MENA countries face is aligning the development needs of a modern world and the moral imperatives of a religious society, resulting in tension between modernity and tradition (Cook 2000). The focus on tradition versus modernity, or the forces of change, can result in conflicts within education processes (Massialas and Jarrar 1987). This tension can be captured in the definition and purpose of education. In Arabic, *taaleem* (education) comes from the root word *ilm* (knowledge). The plural of *ilm* is *uloom,* which also means science or sciences. *Taaleem* encompasses both learning and teaching—the acquisition and provision of knowledge or science. Education in Arabic is also *tarbiya*, which refers to education in the sense of growing or rearing. Its root word, *rabba,* means raising or bringing up. *Taaleem* and *tarbiya* have meanings similar to those of the Latin words *educere*—to lead forth and to train—and *educare*—to rear and to educate (Bass and Good 2004; Cook 1999).

At the center of the debate on tradition and modernity is the extent to which education should focus on the acquisition of knowledge or science (*taaleem*) versus the acquisition of values (*tarbiya*). This question is reflected in the evolution of the names given to ministries of education in MENA countries. Names have shifted between ministries of *tarbiya* and ministries of *taaleem,* with some countries settling on both names as

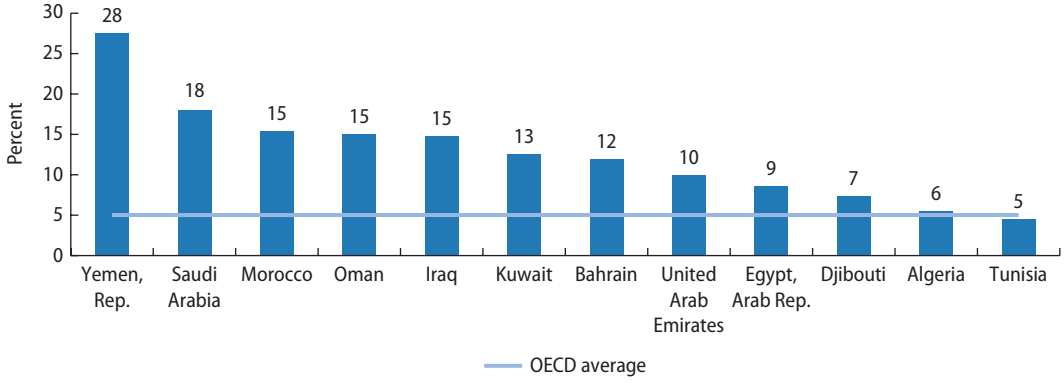
ministries of *tarbiya* and *taaleem*.[7] When education ministries were established in the middle of the 20th century after independence in most MENA countries, they were called ministries of *maarif*—plural of *maarifa* (knowledge). Egypt, for example, began with the Ministry of *Maarif* and then shifted to the Ministry of *Taaleem*. Currently, it is the Ministry of *Tarbiya* and *Taaleem*. The change was a deliberate decision made during the tenure of President Jamal Abdel Nasser, who regarded education as the process required to form the complete person and to shape the Egyptian identity (Ahramonline 2015).

The values and principles reflected in education in MENA are shaped by national discourses usually dominated by elites and powerful groups. Classrooms and curricula become the platforms on which the struggle between modernity and tradition are played out. The tension between tradition and modernity in defining the purpose of education is prevalent not only in MENA. Throughout history, countries worldwide have struggled to modernize while maintaining their cultural norms, values, and traditions, with education as the mechanism. In Japan, when the Meiji government (1868–1912) implemented reforms based on Western models of education, Japanese feared their identity and values would be lost. These fears led to the release of the Imperial Rescript of Education in 1890, emphasizing Japanese values and Confucian virtues. Since then, Japanese education policy has maintained a balance between retaining traditional Japanese values while adapting aspects of the world's best education systems (OECD 2011a). Ernst Friedrich Schumacher, a British economist in the 1970s, argued that the purpose of education is to transmit the values "through which we look at, interpret, and experience the world" and that science "cannot produce ideas by which we could live . . . and is completely inapplicable to the conduct of our lives or the interpretation of the world" (Schumacher 1973). He believed that education was of no value if it did not transmit fundamental convictions. In other words, the purpose of education could be better understood not as *taaleem* but essentially as *tarbiya*.

The traditional values and fundamental convictions of MENA countries were established in Islam, which represents the foundation of national identity.[8] These values and convictions are at the heart of education. The proportion of instructional time devoted to religious education in most MENA countries is well above the average time that OECD countries spend on religious, ethics, and moral education (see figure O.6). For example,

FIGURE O.6 Substantial time is devoted to religious education in MENA

Percentage of instructional time allocated to religious education in grade 1 of primary school



Sources: OECD 2017a for OECD average (refers to all grades of primary school); UNESCO 2011 for Algeria (2004), Bahrain (2004), Djibouti (2008), Iraq (2011), Kuwait (2004), Oman (2004), Tunisia (2008), and the Republic of Yemen (2004); World Bank calculations using various online sources for the Arab Republic of Egypt (2014), Morocco (2016), Saudi Arabia (2017), and the United Arab Emirates (2016).
Note: OECD = Organisation for Economic Co-operation and Development.

based on the most recent comparable information available, grade 1 students in Bahrain, Iraq, Kuwait, Morocco, Oman, Saudi Arabia, the United Arab Emirates, and the Republic of Yemen spend more than double the OECD average of 5 percent. Religious education also reflects traditional teaching practices that focus on memorization. The foundations of rote learning in MENA can be linked to the oral tradition among Arabs that predates Islam, which has also been used to preserve and spread Islamic teachings.

It it is up to countries to determine the values they want to bestow on their citizens. However, it is important to recognize the trade-offs in terms of the time distribution between subjects; more time on religious studies reduces the time allocated to other subjects such as math and science. It is also important to recognize the impact of traditional modes of teaching on learning. In many countries, attempts to reform the education system have been opposed as an attempt to change the national character. In Jordan, for example, the introduction of curriculum reforms sparked public outrage, mainly by conservative religious groups whose members characterized the reforms as an attempt to undermine the kingdom's Islamic values and character (Kirdar 2017). Similarly, in Kuwait various groups have protested ongoing curriculum reforms as the imposition of imported concepts.

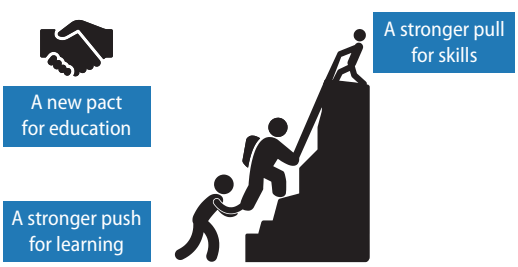
Modernity does not mean importing a specific model. In many MENA countries, modernity is associated with Western models and approaches and is used by both the proponents and opponents of change. Modernization is a process by which social norms evolve and are renewed; modernity can take multiple forms. The issue is not replacing tradition with one form of modernity. Rather, it is allowing review of the traditional practices and norms that are holding back the potential of education and engaging in a process of renewal. Modernity is inevitable as the world changes. MENA countries need to prepare their students with the knowledge, skills, and values to engage with, adapt to, and succeed in a changing world.

A new framework is needed to realize education's potential in MENA

To realize the potential of education, MENA countries need to tackle the four tensions and establish an education system that prepares all students for a productive and successful future. Such a system would be modern and flexible and would nurture a culture of excellence and creativity in learning. It also would leverage disruptive technologies and adopt modern approaches so it can offer young people the skills they need to define their trajectories in life and adapt to local, national, and global changes. Finally, it would be based on a shared national vision and would connect with the overall development goals of the country. All of society would be responsible for ensuring its success. To establish such a system, MENA countries need to adopt a new framework for education—one that includes a concerted *push* for learning, a wide-reaching *pull* for skills, and a new *pact* for education (see figure O.7). The remainder of this report describes the actions needed to implement this framework.

Related to this effort, the World Bank's *World Development Report 2018* highlights the global learning crisis (World Bank 2018e). It sheds light on the dimensions of the crisis and proposes a way forward that is well aligned with the push, pull, and pact framework described here. It further reinforces the importance of all stakeholders working together to promote a focus on learning and skills (see box O.2).

FIGURE O.7 "Push, pull, and pact" offers a new framework for education in MENA



Source: World Bank.

Box O.2 *World Development Report 2018: Learning to Realize Education's Promise*

There is nothing inevitable about low learning in low- and middle-income countries. When improving learning is a priority, great progress is possible, as evidenced by success stories such as Korea. To do better, a nation must (1) assess learning, to make it a serious goal; (2) act on evidence, to make schools work for all learners; and (3) align actors, to make the whole system work for learning. Together, these three policy actions can deliver a system in which the elements cohere and everything aligns with learning. The payoff to these efforts is education that delivers for growth and development. Countries have already made a start by getting so many children and youths into school. Now is the time to realize education's promise by accelerating learning for all.

Source: World Bank 2018e.

Push for learning

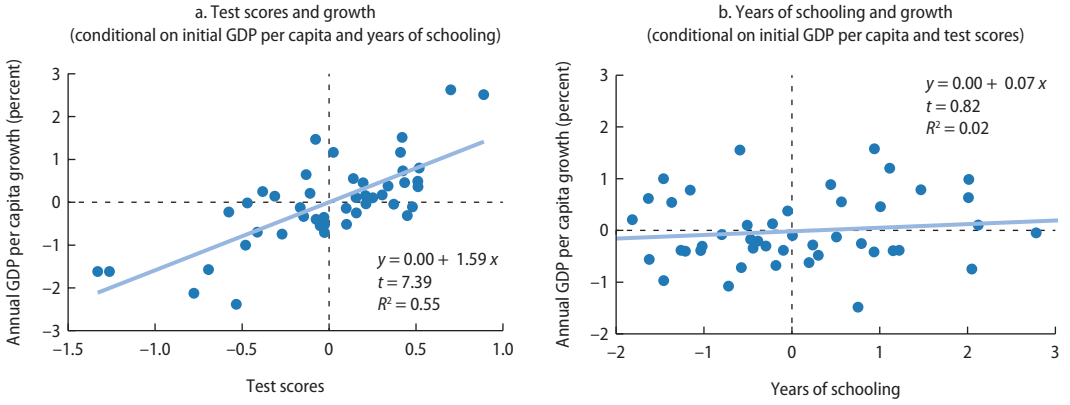
Focus on learning, not just on schooling

The potential of education is achieved only when it confers the skills and knowledge that constitute human capital. In fact, the skills conferred through learning—not the years of schooling—are what determine education's contribution to economic growth (see figure O.8) (Barro and Lee 2013; Hanushek and Woessmann 2008; World Bank 2018e).

MENA has succeeded in providing schooling; now it needs to achieve learning. The number of actual years of schooling has increased across MENA, with several countries reaching an average that is close to a full cycle of primary and secondary education. However, when the number of actual years of schooling is adjusted for learning, the number of effective years of schooling in MENA is on average 2.9 less than the number of actual years of schooling. In other words, the poor quality of education in MENA is equivalent to approximately three lost years of education. For example, in 2010 young adults in Jordan had on average 11 years of schooling, the same as Kazakhstan and New Zealand (see figure O.9). After adjusting for learning,

FIGURE O.8 What matters for growth is skills

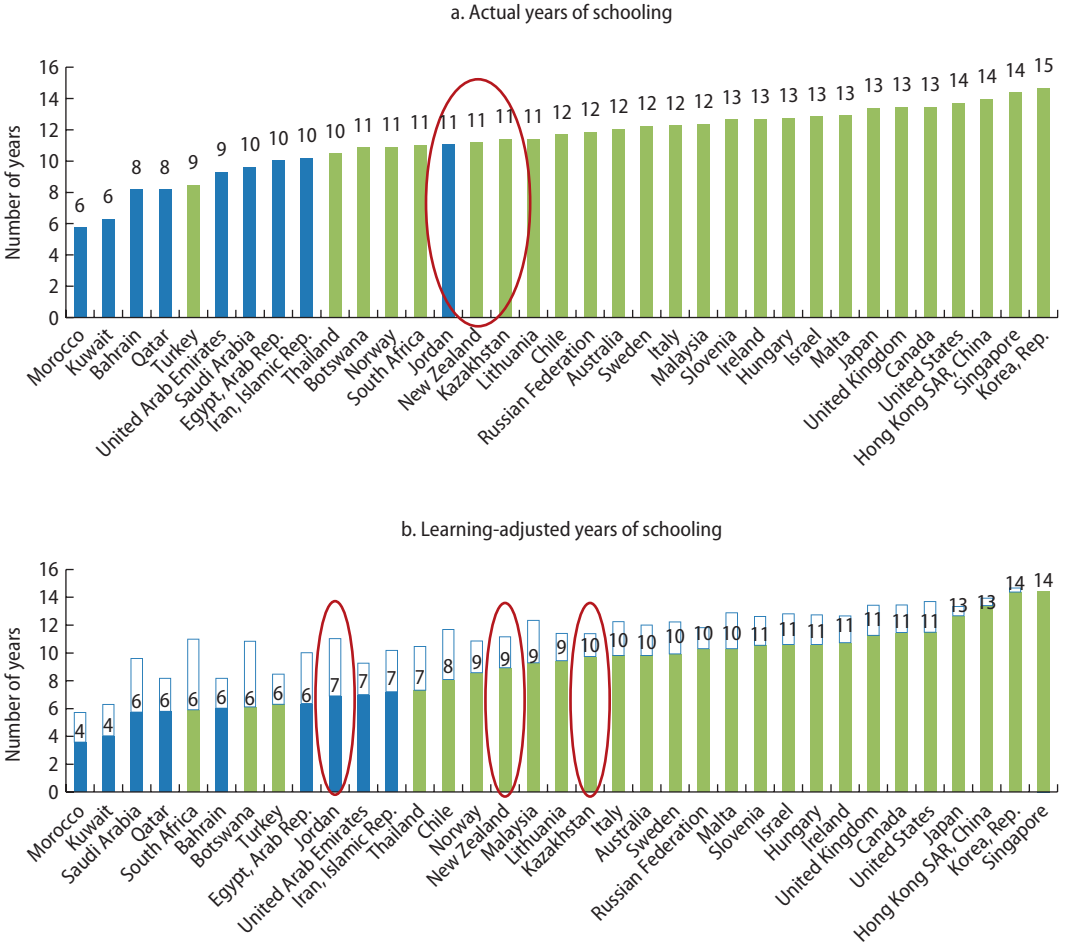
Annual average per capita growth in GDP, 1970–2015, conditional on test scores, years of schooling completed, and initial GDP per capita, selected countries



Source: World Bank 2018e, fig. 1.5.

FIGURE O.9 When adjusted for learning, the number of years of effective schooling in MENA drops substantially

Actual years and learning-adjusted years of schooling of young people, ages 25–29



Sources: World Bank 2018e, based on 2010 data from Barro and Lee 2013 and TIMSS 2015 (Mullis et al. 2016).
Note: For the purposes of this illustration, years of schooling are adjusted using the grade 8 mathematics results from the 2015 Trends in International Mathematics and Science Study (TIMSS). Results are compared with those of Singapore (highest-scoring economy). The figure highlights, as an example, that Jordan has actual years of schooling similar to those of Kazakhstan and New Zealand (around 11 years in each country), but students in Jordan attain 2 to 3 fewer years of learning in these 11 years than students in the two other countries.

Jordan had two to three years less learning than New Zealand and Kazakhstan.

MENA's learning crisis is apparent across primary and secondary grades and across different subject areas. No MENA country came close to the international medians for the percentage of students reaching the low international benchmarks of the recent TIMSS and Progress in International Reading Literacy Study (PIRLS)—see table O.1. Only 42 percent of grade 8 students in Egypt had a basic understanding of science (Martin et al. 2016). In Morocco, only 36 percent of grade 4 students reached minimum levels of reading literacy. According to the results of the 2015 Programme for International Student Assessment (PISA), students age 15 in Algeria, Jordan, Lebanon, Qatar, Tunisia, and the United Arab Emirates are on average

TABLE O.1 MENA countries have some of the lowest results on international student assessments

Percentage of students reaching low international benchmarks of performance on TIMSS 2011 and 2015 and PIRLS 2011 and 2016

Mathematics (TIMSS)					
Grade 4			*Grade 8*		
Country	*2011*	*2015*	*Country*	*2011*	*2015*
International median	90	93	International median	75	84
Bahrain[a]	67	72	Bahrain[a]	53	75
United Arab Emirates[a]	64	68	United Arab Emirates	73	73
Iran, Islamic Rep.	64	65	Lebanon	73	71
Qatar[a]	55	65	Iran, Islamic Rep.[a]	55	63
Oman[a]	46	60	Qatar[a]	54	63
Saudi Arabia[b]	55	43	Oman[a]	39	52
Morocco[a]	26	41	Egypt, Arab Rep.	n.a.	47
Kuwait[b]	30	23	Jordan[b]	55	45
			Morocco[a]	36	41
			Kuwait	n.a.	37
			Saudi Arabia[b]	47	34

Science (TIMSS)					
Grade 4			*Grade 8*		
Country	*2011*	*2015*	*Country*	*2011*	*2015*
International median	92	95	International median	79	84
Bahrain	70	72	United Arab Emirates	75	76
United Arab Emirates[a]	61	67	Bahrain[a]	70	73
Qatar[a]	50	64	Iran, Islamic Rep.[b]	79	73
Iran, Islamic Rep.[b]	72	61	Oman[a]	59	72
Oman[a]	45	61	Qatar[a]	58	70
Saudi Arabia[b]	63	48	Jordan[b]	72	63
Morocco[a]	16	35	Lebanon	54	50
Kuwait[b]	37	25	Kuwait	n.a.	49
			Saudi Arabia[b]	68	49
			Morocco[a]	39	47
			Egypt, Arab Rep.	n.a.	42

Reading (PIRLS)		
Grade 4		
Country	*2011*	*2016*
International median	95	96
United Arab Emirates[a]	64	68
Qatar[a]	60	66
Iran, Islamic Rep.[b]	76	65
Saudi Arabia	65	63
Oman[a]	47	59
Morocco[a]	21	36

Sources: Mullis et al. 2016, 2017.
Note: The international medians for 2011 and 2016 cannot be compared because the set of countries in each year is not the same. PIRLS = Progress in International Reading Literacy Study; TIMSS = Trends in International Mathematics and Science Study; n.a. = not applicable (the Arab Republic of Egypt and Kuwait did not participate in TIMSS for grade 8 in 2011).
a. Statistically significant increase between 2011 and 2015/2016.
b. Statistically significant decrease between 2011 and 2015/2016.

two to four years of schooling behind the member countries of the OECD in applying their knowledge and competencies in reading, mathematics, and science to real-world situations. Algeria and Lebanon, both participating in PISA for the first time in 2015, found that more than two-thirds of their students did not meet a basic proficiency level in science, reading, and mathematics.

Low learning outcomes in MENA countries call for a push across several aspects of the educational process. To undertake a push for learning, countries need to focus on seven key areas:

1. Building the foundational skills—from early childhood development through the early grades of school—needed for future learning and success.
2. Ensuring that teachers and school leaders, who are the most important inputs to the learning process, are qualified, well selected, effectively utilized, and incentivized to continue to develop professionally.
3. Modernizing pedagogy and instructional practices to promote inquiry, creativity, and innovation.
4. Addressing the language of instruction challenge given the gap between spoken Arabic and modern standard Arabic. The close connection among language, religion, and national identity makes it difficult to make a regional recommendation. Even though this phenomenon is a regional one, it manifests itself in many different ways in different countries. Hence, it needs to be addressed with a very specific formula in each country.
5. Applying learning assessments that regularly monitor student progress to ensure that students are learning.
6. Giving all children, regardless of background or ability, an opportunity to learn—a requirement for raising learning outcomes at the national level.
7. Leveraging technology to enhance the delivery of education and promote learning among students and educators and preparing students for an increasingly digital world.

Prioritize the early years to build the foundations for learning

Start from early childhood

The period from before birth to approximately 6 years of age, when the brain undergoes its greatest development, is critical to children's development (Berlinski and Schady 2015; Heckman 2006; Leseman 2002). In these years, more than 1 million new neural connections are formed every second. It is also during this period that the building blocks of the brain are formed and the child's environment stimulates brain development (Center on the Developing Child 2009; Shonkoff and Garner 2012). Children's early environments and experiences, particularly the parenting they experience, are major contributors to their early cognitive development (Paxson and Schady 2007). Parenting and developmental interventions, especially those targeting disadvantaged children, can have large (arguably the largest) impacts on human capital (Hamadani et al. 2006; Heckman 2006; Temple and Reynolds 2007). Early childhood development (ECD) programs—including in-home programs, centers, and preprimary (kindergarten) education—can play an important role in human capital accumulation prior to primary school. However, the impact of ECD programs depends on their quality and may be greater for disadvantaged children (Berlinski, Galiani, and Gertler 2009; Berlinski, Galiani, and Manacorda 2008; Bouguen et al. 2013; Hazarika and Viren 2013; Jung and Hasan 2014; Temple and Reynolds 2007; Vegas and Santibáñez 2010).

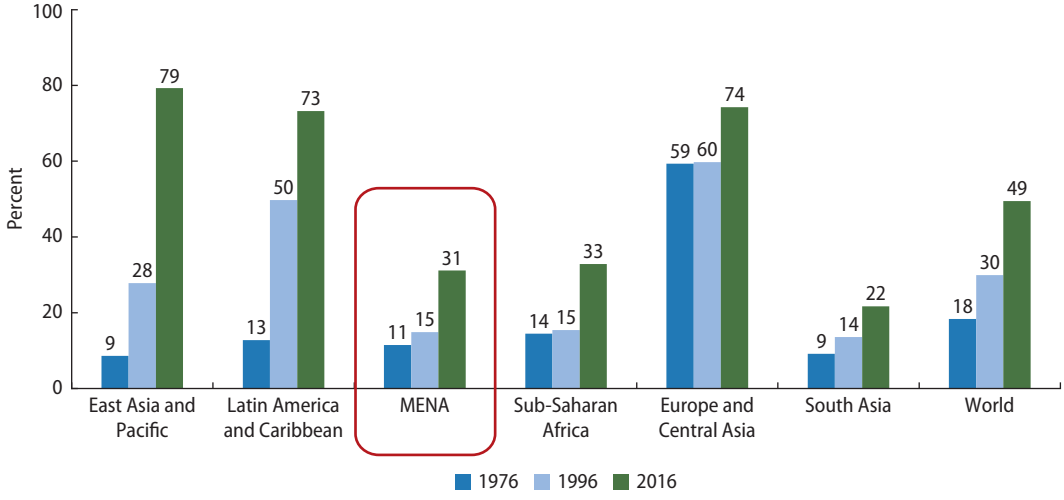
Because of the importance of early development, the largest and most cost-effective impacts of public investment in education can be realized in the early stages of life. Investments made during the early years yield the highest return in terms of future productivity by laying the foundation for cognitive and socioemotional skills (World Bank 2018a). By contrast, if developmental growth is not supported from an early age, children may arrive at school well behind their peers. The opportunity costs of making up lost

ground in later years through remedial education can be high. To take full advantage of the high returns to ECD, governments need to expand access to high-quality ECD programs, which include prenatal and neonatal nutrition, health, and parenting interventions as well as socioemotional and cognitive stimulation.

MENA has not invested sufficiently in ECD. As a result, most children begin school unprepared to learn. Gross enrollment ratios in preprimary education are just 31 percent, lower than in many other regions and with wide differences between countries (see figures O.10 and O.11). Moreover, MENA also has the lowest public provision of

FIGURE O.10 Preprimary enrollments are lower in MENA than in many other regions

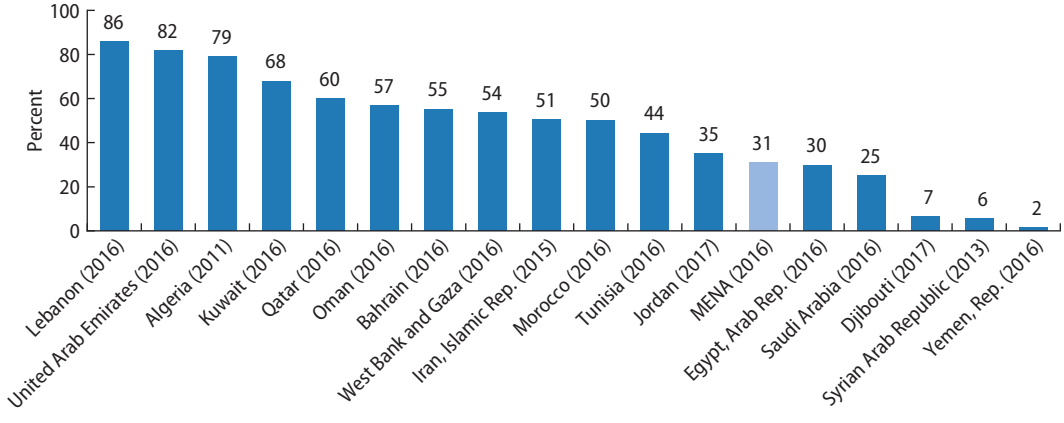
Preprimary gross enrollment ratios, 1976, 1996, and 2016



Source: World Bank EdStats database (http://datatopics.worldbank.org/education/), based on data from the UNESCO Institute for Statistics.

FIGURE O.11 Large differences in preprimary enrollment ratios are found across MENA

Preprimary gross enrollment ratio



Sources: For all except Jordan, World Bank EdStats database (http://datatopics.worldbank.org/education/), based on data from the UNESCO Institute for Statistics. For Jordan, Queen Rania Center at the Jordan Ministry of Education, provided in August 2018.
Note: Data are for the latest available year between 2011 and 2017.

preprimary education, with only 29 percent of preprimary enrollment in public programs, compared with 71 percent in private preschools and nurseries (El-Kogali and Krafft 2015).

Expanding ECD coverage is not enough; quality matters. High-quality ECD programs can boost children's intellectual and social development, preparing them to enter primary school ready to learn (Heckman 2006). Ample evidence shows that quality preschool education programs geared especially toward disadvantaged children have a positive impact on beneficiaries' earnings and even reduce crime (Elango et al. 2015; Schweinhart et al. 2005). These programs are also more cost-effective than other education interventions, such as reductions in class size, and help to close performance gaps in socioeconomic status, ethnicity, and geographic origin (Glewwe 2013; Heckman 2006).

MENA countries should accelerate the expansion of access to high-quality preprimary education. Because few data are available on early childhood education (ECE) programs implemented in MENA countries, it is difficult to determine whether the existing services are of high quality. Governments should focus on measuring child development outcomes and early learning environments to identify drivers of ECE quality in their respective contexts. Building on rigorous evidence, they can make informed decisions on the piloting and scaling up of early learning programs.

The expansion of compulsory preprimary education in Argentina in the 1990s is a good example of how a country can successfully raise student learning outcomes in the early years (by grade 3). A study revealed that adding one year of preprimary school in Argentina increased the average grade 3 test scores by 8 percent of the mean (Berlinski, Galiani, and Gertler 2009). Examples of excellence in expanding quality ECE provision can also be found in MENA countries. For example, in the United Arab Emirates universalization of preschool education is among the top key performance indicators of its ambitious Vision 2021 national agenda. The country is on pace to reach a goal of enrolling 95 percent of its children in preschool by 2021, an increase of more than 30 percentage points since the 1990s (see box O.3).

Children also develop their socioemotional skills and behaviors during the early preschool years. Their attitudes are shaped by their environment at home and school and by their interactions with parents, siblings, and teachers. Children develop cognitively, socially, and emotionally by engaging in development activities with their families. Reading, playing, looking at picture books, singing songs, and other activities all help children grow and learn and have been shown to have a positive link to cognitive test scores

Box O.3 Prioritizing early childhood education in the United Arab Emirates

Embedded in its national goal of developing a first-rate education system, the United Arab Emirates is expanding access to preschool so that all children receive a solid foundation for learning from an early age. As part of its ambitious Vision 2021 national agenda, the country has set a target for 2021 of 95 percent enrollment in preschools for the country's children, and it is well on track to reach that target. As of 2016, the gross preprimary enrollment ratio in the United Arab Emirates was at 82 percent. The United Arab Emirates is therefore at the top of MENA in terms of preschool enrollment and shows a vast improvement from enrollment rates of less than 30 percent in the 1970s and 60 percent in the 1990s.

Sources: United Arab Emirates National Agenda and Vision 2021, presentation, http://www.rwadubai.com/media/2578/uae-national-agenda.pdf; World Bank, Education Statistics (EdStats) database.

in young children and to promote school readiness (El-Kogali and Krafft 2015). Various interventions have proven to be effective and scalable in helping parents to engage with their children and promote their development. Jordan's Better Parenting project engaged parents and communities—including imams—to raise awareness of better parenting. In Turkey, a program targeting mothers addressed parent-child interactions and provided lessons on positive discipline. In Brazil, workshops involving mothers and home visits showed positive results. Outreach through different media—such as radio, television, and print—to communicate about ECD can help to reduce violent discipline and promote children's development (Eickmann et al. 2003; Kagitcibasi, Sunar, and Bekman 2001; Naudeau et al. 2011, cited in El-Kogali and Krafft 2015).

Build foundational skills in the first three grades of school

Because many children in MENA have a poor start to their formal education by not being developmentally on track in prereading skills, it is vital that the early grades of school emphasize these important foundational skills. Basic reading, writing, numeracy, and socioemotional skills lay the foundation for learning throughout a child's life and into adulthood. Children lacking these skills are at risk of falling behind, becoming disengaged from school, and not acquiring the more advanced skills increasingly demanded in today's labor market. Ultimately, if children lack the foundational skills that should be developed in the early grades of school, they cannot take advantage of the benefits that their education could provide.

Many children in MENA remain illiterate and innumerate after two or three years of schooling. The Early Grade Reading Assessment (EGRA) revealed that more than one in three grade 2 children in Iraq, Morocco, and the Republic of Yemen could not read a single word of connected text. By grade 3, this proportion had dropped, but still more than one in six children could not read a single word of connected text after more than two full years of school (USAID 2018). In Kuwait, Morocco, and Saudi Arabia, less than 50 percent of grade 4 students in 2015 had basic mathematical knowledge as measured by TIMSS, while across all participating countries 93 percent of grade 4 students had mastered these basic mathematical skills (Martin et al. 2016; Mullis et al. 2016, 2017).

Early grade reading interventions can make a substantial difference. A review of 18 early grade reading programs found that almost all were effective, and many were highly cost-effective (Graham and Kelly 2018). Several countries in MENA have made concerted efforts to address literacy during the early grades. Piloting early childhood and early grade interventions to identify which successfully boost children's foundational skills is an effective strategy to maximize the use of scarce resources. Measuring early childhood development outcomes using early grade literacy and numeracy assessments can shed further light on the key drivers of early learning and help to identify gaps in the development of key foundational skills from a young age.

To enhance children's readiness to learn, education policies in MENA could aim to align preprimary schooling with primary education to ensure a smooth transition for young children. Entering primary classrooms where a different educational philosophy (or language of instruction) is practiced can be a difficult transition for young children. Moving from play-based, collaborative, child-centered learning—often conducted in a child's mother tongue—to traditional teacher-centered instruction—often in modern standard Arabic (MSA)—can undermine the positive impacts of even the most successful ECE programs. Therefore, aligning preschool and primary grade instructional styles is important, with both focusing on developmentally appropriate teaching and learning techniques. For example, the United Arab Emirates is in the process of aligning grades 1 and 2 of primary school with preprimary education, which consists of two years of kindergarten, to create a holistic ECE cycle covering all

children from ages 0 to 8. Finland, New Zealand, and various other OECD countries have undertaken similar efforts to align early childhood education with learning in the early grades (OECD 2012b, 2017c).

Select, prepare, support, empower, and motivate effective teachers and school leaders

Effective teachers and school leaders have a profound impact on students' learning and their educational and career aspirations. Effective teachers are those who are knowledgeable in both pedagogy and their subject areas, who adapt and innovate their teaching practices to facilitate students' critical thinking, and who support learning for students with different learning styles (Hightower et al. 2011; Metzler and Woessmann 2012; OECD 2012a). School leaders have an indirect but powerful effect on student achievement through their interactions with teachers and their role in shaping school culture (Pont, Nusche, and Moorman 2008; Witziers, Bosker, and Kruger 2003). Evidence shows that teacher effectiveness is the most important school-related factor influencing student achievement (Darling-Hammond 2000; Hanushek 2005; Mourshed, Chijioke, and Barber 2010), and among school factors school leadership is second only to classroom teaching in its impact on student learning (Jensen, Downing, and Clark 2017a; Leithwood, Harris, and Hopkins 2008; Leithwood and Mascall 2008).

Select and support the best teachers and school leaders

It is paramount that education systems recruit, train, and support those men and women who have the greatest potential to be effective teachers and school leaders. These systems must also provide for ongoing career development and upskilling to ensure that the best teachers remain in the classrooms and that classrooms and schools are providing the most up-to-date and effective teaching practices and learning environments.

Attracting and selecting highly qualified candidates to enter initial teacher education programs are the first step in the long-term process of building an effective teaching force (see box O.4). International experience points to the importance of establishing high standards to ensure that the best candidates are selected for initial teacher education programs and that these candidates have a reasonable opportunity to be hired after graduation (Barber and Mourshed 2007; Bruns and Luque 2015). In most MENA countries, the screening process for initial teacher education

Box O.4 Attracting the best students to teaching depends on the right policies and programs

Attracting and retaining the best students into the teaching profession depends on policies and programs such as scholarships and tuition support, opportunities to progress and grow in the teaching career, competitive salaries, and other benefits such as housing assistance (World Bank 2013d). Moreover, it is critical to attract the candidates who want to make teaching a profession rather than use it as a ticket for a public sector job.

In some MENA countries, teachers are offered competitive starting packages, but the increase in salaries over time is relatively modest. After 15 years, teachers can expect to earn only between 1.2 and 1.5 times their initial salaries (World Bank 2015e). Such compressed salary scales within the teaching career in MENA may negatively affect how appealing the teaching profession is to talented candidates. In such instances, policies that address wage compression could be fundamental to improving the quality of teaching. Recognizing this link, Jordan has embarked on a reform to decompress the salary scales for teachers (World Bank 2016a).

is dependent on test scores from secondary school graduation examinations (World Bank 2015c). However, the scores needed to accept students in the education field are lower than those in other fields. In Egypt, for example, the required secondary school passing grade on the national examination for admission into education and literature majors is 75–85, whereas it is 80–88 for science and mathematics majors and 96–98 for medical school (World Bank 2010). Although test scores are necessary, they are not a sufficient basis for selection. Other criteria—such as creativity, engagement with education issues, and ability to work well with others—are important traits to consider.

Many MENA countries are raising the qualifications to enter the teaching profession by requiring a bachelor's degree, with some raising the required level to a master's degree. However, most MENA countries do not apply hiring criteria and processes that look beyond academic degrees to assess candidates' subject knowledge and pedagogical and other skills. A teaching credential should signify strong knowledge of subject-matter content *and* the teaching skills to deliver this content effectively while addressing specific learning challenges (Loughran, Berry, and Mulhall 2012; Shulman and Shulman 2004; Thames and Ball 2010). Only 4 of the 10 MENA countries that participated in TIMSS 2015 required teacher candidates to pass qualifying examinations for selection to teaching posts (Mullis et al. 2016).

Developing effective school leadership starts with the selection and preparation of skilled, well-equipped new principals. Most MENA countries employ a variety of criteria for selecting principals, and, as in teacher selection, a strong emphasis is often placed on academic qualifications and teaching experience (Mullis et al. 2016).[9] In Oman, for example, school principals are chosen according to seniority and experience in teaching and classroom management. Potential school principals in Bahrain are required to have experience as a teacher, adviser, or education specialist. Some principals in Oman and Saudi Arabia have degrees in educational leadership in addition to teaching qualifications. In Lebanon, leadership training programs are the main preparation route to becoming a principal. Principals must pass an interview and a yearlong training program in leadership and supervision. Egypt has rigorous professional requirements: all school principals must have a minimum of 15 years of teaching experience and a minimum of five years of administrative experience. Candidates for the position of principal must hold a degree in tertiary education and are required to complete specific training. They also must pass a written test, successfully complete a supervised internship, and participate in an induction and mentoring program (Mullis et al. 2016).

Where credentials do not appropriately capture skills—one of the four tensions in MENA—the risk of not selecting the most qualified teachers and school leaders is high. This disconnect could jeopardize student learning. In many developed education systems, rigorous processes are in place for selecting the best-performing graduates of initial teacher education programs for teaching positions, often requiring them to hold certificates or licenses. Some of the oldest and most established licensing systems are in the United States, where state teaching licenses ensure a consistent set of standards with a certain level of teaching proficiency recognized by all schools. Several MENA countries are beginning to explore the introduction of licensing and certification requirements for teachers as a mechanism to raise and maintain standards.

Because technology, research, and labor market needs are changing rapidly, teachers and school leaders must be able to update their knowledge and skills regularly. Intensive, content-focused professional development programs can improve teachers' subject matter knowledge and their ability to use this knowledge in their teaching (NCEE 2016). Professional development programs for teachers should focus on content and on improving teaching skills so that teachers can effectively deliver content to all types of students (Loughran, Berry, and Mulhall 2012; Shulman and Shulman 2004; Thames and Ball 2010). Training programs that teach

Box O.5 School principals also must act as instructional leaders

School principals also serve as instructional leaders who can lead, guide, and monitor instructional practices related to pedagogy and curriculum (Jensen, Downing, and Clark 2017a; OECD 2016a, 2016b). Instructional leadership fosters a school environment that focuses more on academic success, which in turn enhances student learning. For example, higher average mathematics achievement is associated with principals' reports of a greater school emphasis on academic success (Mullis et al. 2016). Because of the degree and importance of skills transfers between principals and teachers, investing in the transformation of all principals into instructional leaders is one of the most effective steps a country can take to improve student learning. In MENA countries, such a change for school principals could improve teaching practice and student learning. Successful change depends on how principals are appropriately selected, supported, and given the needed blend of autonomy and accountability to perform.

pedagogy specific to subject areas—such as how to teach a mathematics class effectively, with follow-up visits in which trainers observe and support teachers in the classroom—are highly effective (Darling-Hammond et al. 2009). Some MENA countries have put in place promising professional development programs for teachers.

Professional development is most effective in changing classroom practice when teachers work collaboratively (Brown, Smith, and Stein 1995; Darling-Hammond et al. 2017; Evans and Popova 2015; Yoon et al. 2007). Collaboration allows teachers to benefit from one another's knowledge and skills and creates opportunities for best practice sharing and mentoring (Angrist and Lavy 2001; Borko 2004; Darling-Hammond et al. 2017). High-performing countries in East Asia and elsewhere have practiced collaborative approaches in professional development for decades, with positive results (Evans and Popova 2015; World Bank 2018a; Yoon et al. 2007). Technology and social media can be powerful tools in promoting peer-to-peer learning and collaboration between teachers. Many teachers in MENA are using groups on Facebook or WhatsApp to exchange information. Moreover, lessons on platforms such as Nafham, the Arabic version of the Khan Academy, not only help students to learn but can also help teachers to learn how to conduct a lesson effectively.

Professional development is equally important for principals who have been in the position for a long time because a principal's role and the demands of schooling change over time (Jensen, Downing, and Clark 2017a; OECD 2012a). Although professional development for principals needs to be tailored to the local context and needs, a few core elements are shared by many high-performing systems (Jensen, Downing, and Clark 2017a; World Bank 2018e). These elements include structuring leadership development around a vision for the school, whereby the school leader manages and oversees implementation of this vision. Other elements include linking leadership development to practical problems by means of action learning in a real school environment that is supported by mentors. Furthermore, school leadership programs should develop leaders' resilience, critical thinking skills, and ability to adapt practices to new situations. In high-performing systems, principals are often instructional leaders (see box O.5). Finally, leadership development programs should continue over the course of a leader's career through a systematic and comprehensive approach that is career-long and systemwide.

Assign the best teachers to where they are most needed

Decisions on teacher recruitment in most high-performing systems are made at the

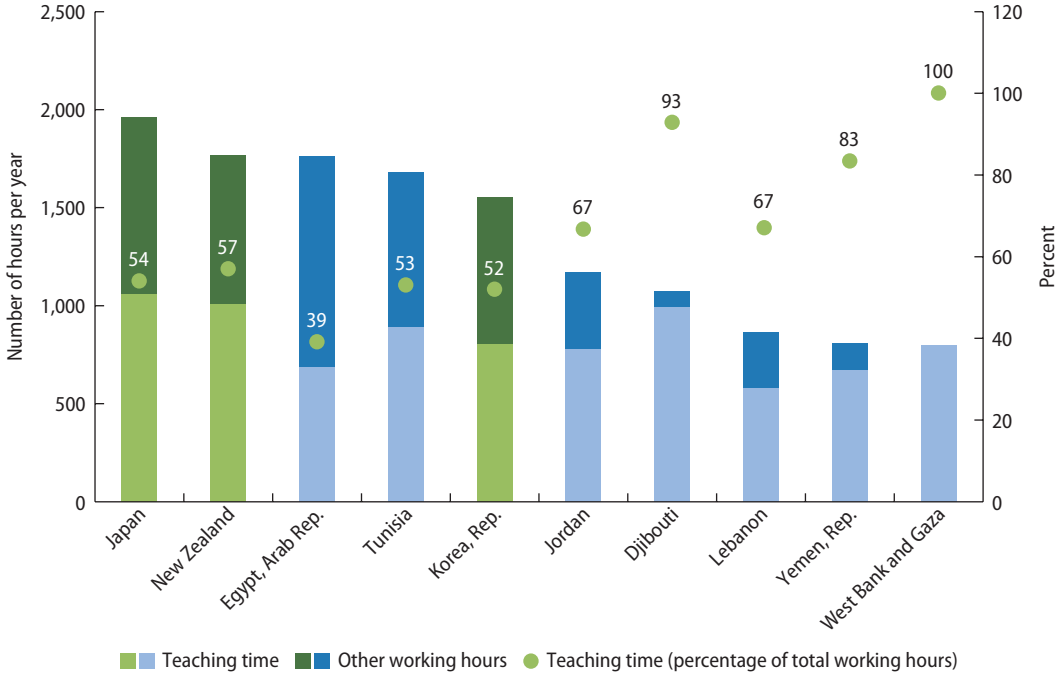
school level (Barber and Mourshed 2007; Bruns and Luque 2015), which allows a better match between teacher characteristics and teaching needs, as identified by the school. In MENA countries, however, teacher hiring and assignment in the public system generally take place at the central level and usually by a civil service ministry. This arrangement has been a key challenge in enhancing performance because schools do not have the autonomy to hire good teachers or fire poorly performing ones. Managing performance then becomes a long bureaucratic process, which ultimately limits student learning as well as teacher motivation. As noted earlier, decentralized decision making requires capacity, resources, and accountability mechanisms. Ultimately, MENA school systems must find the balance between autonomy and accountability that will best support learning and provide schools with the resources and flexibility to establish and achieve ambitious goals for student learning.

Having an adequate number of qualified teachers in the classroom is a basic prerequisite for learning. However, students in some MENA countries are in classes so large that effective instruction can be difficult. Egypt, Jordan, and Morocco have some of the largest classes among TIMSS participants, while class sizes in Gulf Cooperation Council (GCC) countries are generally in line with the international average of TIMSS participants and those found in East Asia—though still higher than in countries such as Australia and Sweden (Mullis et al. 2016).

Even in countries in which teachers are recruited and assigned in adequate numbers, they are often not used efficiently. In MENA, low teacher working hours are common (see figure O.12). Only half of the MENA economies in 2010 required working hours for teachers that were comparable

FIGURE O.12 The required working hours for teachers in MENA are well below those in top-performing countries

Statutory teaching and working time required for teachers in primary education in selected MENA (2010) and OECD (2007) economies



Source: World Bank 2015c.
Note: OECD = Organisation for Economic Co-operation and Development.

to those of the top-performing countries (World Bank 2015c). Egypt and Tunisia were within the range of top-performing countries such as Japan, Korea, and New Zealand. Others—such as Djibouti, Jordan, West Bank and Gaza, and the Republic of Yemen—were all well below the threshold of 1,200 working hours a year for teachers in primary education. In Lebanon, the working hours required of primary and secondary education teachers were less than half of those observed in top-performing countries.

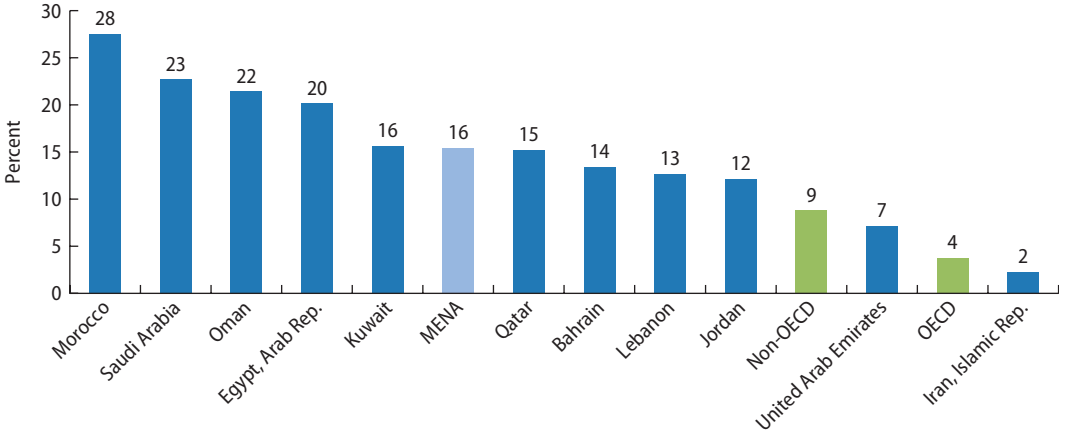
Teacher absenteeism is a chronic problem plaguing MENA school systems. Among MENA countries participating in TIMSS 2015, an average of 16 percent of students in grade 8 were enrolled in schools whose principals reported teacher absenteeism to be a "serious problem" (see figure O.13). The problem is most acute in Morocco (affecting 28 percent of students), followed by Saudi Arabia, Oman, and Egypt. By comparison, only 4 percent of grade 8 students in OECD member countries were enrolled in schools with serious problems with teacher absenteeism. Similarly, low levels were observed in the Islamic Republic of Iran (2 percent) and the United Arab Emirates (7 percent).

Encourage instructional practices that maximize children's potential

Teaching and learning are multifaceted and complex. Children arrive at school with diverse backgrounds, life experiences, and individual characteristics. Teachers interact with children in a multitude of ways because they have a variety of backgrounds, life experiences, and teaching styles. The experience of students in the classroom rests on decisions teachers make about delivering the curriculum. How teachers prepare and engage with students of various abilities has an impact on their students' learning. Teaching at the right level, or adaptive instruction, is important to support student learning (Evans and Popova 2015)—see box O.6. Between 2013 and 2015, at least six systematic meta-analyses examined interventions that improve learning outcomes in low- and middle-income countries (Conn 2014; Glewwe et al. 2013; Kremer, Brannen, and Glennerster 2013; Krishnaratne, White, and Carpenter 2013; McEwan 2015; Murnane and Ganimian 2014). Across the reviews, pedagogical interventions (including computer-assisted learning) that tailor teaching to student skill levels ranked among the most

FIGURE O.13 Teacher absenteeism is prevalent throughout MENA

Percentage of grade 8 students attending schools whose principal reports that teacher absenteeism is a "serious problem," TIMSS 2015



Source: IEA Trends in International Mathematics and Science Study—TIMSS 2015.
Note: OECD = Organisation for Economic Co-operation and Development; TIMSS = Trends in International Mathematics and Science Study.

Box O.6 Teaching at the right level benefits students

Various models for instruction take into account the different abilities of students, ranging from grouping students by ability in the classroom for part of the school day or after school (Banerjee 2012) to giving screening tests to students at the beginning of the school year to identify student abilities and target support accordingly (OECD 2011c). In Canada and Finland, extensive personalized support is available to any student who is struggling with the expected levels of learning, especially during the formative years of primary school (World Bank 2018e). Evidence suggests that such targeted interventions and remedial lessons are more effective than other models of level-appropriate instruction, such as grade repetition and between-class ability grouping. Grade repetition, which is practiced in some MENA countries, requires students who do not pass the year-end examinations to repeat the prior school year rather than moving into the next grade with their peers (OECD 2016a). Between-class ability grouping entails grouping students in the same grade into classes based on prior achievement, so that classes are homogeneous in learning levels. A meta-analysis of 100 years of research on ability grouping found that such between-class grouping did not, in fact, benefit students (Steenbergen-Hu, Makel, and Olszewski-Kubilius 2016).

effective means of improving student learning in low- and middle-income countries.

Where the instructional capacity of teachers is low, structured pedagogy programs can be effective. Such programs typically include training courses for teachers and learning resources for both teachers and students. In addition to improving instructional quality on a topic, structured pedagogy programs can change existing classroom practice because they incorporate learning activities and pedagogical training. A review of 420 scholarly analyses of educational interventions in low- and middle-income countries found that structured pedagogy interventions had the largest and most consistently positive effects on student learning outcomes. Although none of the structured pedagogy interventions reviewed had taken place in MENA countries, some of the interventions were in countries performing at similar levels on TIMSS and PISA, such as Chile, Costa Rica, and South Africa (Snilstveit et al. 2015). A variety of scripted lessons and teacher coaching can help to overcome deficits in teacher skills in low-performing education systems (Mourshed, Chijioke, and Barber 2010). This can be an important short- to medium-term intervention until teachers' professional skills are further developed.

Address the language of instruction challenge

A key area that affects learning is the language of instruction (LOI). The LOI is normally shaped by culture, history, and current economic and political trends. For decades, choosing the language to use for instruction has posed a major challenge for MENA, with tension between tradition and modernity arising in several ways. The first tension is the question of whether to use modern standard Arabic—also referred to as classical Arabic—as the language of instruction. MSA differs from the language spoken daily in all Arabic-speaking MENA countries. Because MSA is the language by which the Quran was revealed and written, it has been kept sacred and has not changed with time, whereas the day-to-day language of societies has evolved, creating a large gap between everyday language and MSA. As a result, when children start school and encounter classical Arabic, they must learn it almost as a new language. They then struggle to acquire basic literacy skills and may feel substantial linguistic insecurity because of their lack of familiarity with MSA (Maamouri 1998). Research has shown that students in MENA may be considered at a linguistic disadvantage because they learn

MSA as if it were a second language (Bouhlila 2011; Ibrahim and Aharon-Peretz 2005; Salmi 1987).

Before students can learn in a language of instruction, they need to have learned enough of it. In every language, a vocabulary threshold must be met to understand simple text. For example, to understand English text, students must know at least 5,000 words in English. Typically, children come to school knowing 4,000–6,000 words in their mother tongue. On average, children can learn four vocabulary words per hour of second-language instruction. Thus 1,000 or more schooling hours are needed to build enough vocabulary to begin learning in a second language (van Ginkel 2014). If students fail to achieve both oral and written comprehension of MSA in early primary school, their future studies will be limited to memorizing and regurgitating information without achieving a synthesis of the information. Where teachers are themselves not comfortable operating in MSA, the problem is likely to be exacerbated.

Some MENA countries have addressed the MSA/dual-language challenge by designing curricular materials and providing additional support in the early grades. For example, a program introduced by the U.S. Agency for International Development (USAID) and the Ministry of Education in Egypt showed promise and is being scaled up. The program included eight days of teacher training in addition to curriculum inputs. Grade 2 students who received six months of intervention improved their performance by an entire grade level (Gove, Brombacher, and Ward-Brent 2017). In Jordan, the intervention included allotting daily time for low-performing students to practice foundational skills in reading and mathematics. Beyond an enhanced curricular emphasis on foundational skills, the intervention provided teachers with 10 days of training and additional in-school coaching on how to target remedial support where needed. As a result, not only did the number of low-performing students decrease, but schools also noted an increase in high-performing students (Gove, Brombacher, and Ward-Brent 2017).

The second tension in the LOI relates to the multiple languages used in some MENA countries. For example, in Algeria and Morocco a substantial proportion of the population speaks Tamazight; in Iraq and Syria there are Kurdish communities; and in Djibouti some communities speak Afar and Somali. Which language to use often becomes a political issue more than a technical one because language is closely associated with people's culture and identity. Because many of the MENA countries identify with Islam, they support the use of classical Arabic—the language of the Quran—as the language of instruction, even where large minorities are non-Arabic speakers, such as in Algeria, Iraq, and Morocco. However, there is substantial pressure from non-Arabic-speaking communities to use their language as the mode of instruction for their children.

The third tension occurs when opportunities for social and economic advancement are higher in a language that is not a student's mother tongue. Using a foreign language for instruction has been a topic of debate in MENA countries, with major implications for learning (see box O.7). Equity implications are a factor as well. In the 1980s, the movement of Algerian and Tunisian public education away from instruction in French and toward MSA resulted in greater inequality in education (elites pulled their children into private French-speaking schools) instead of the intended increase in classical Arabic skills. Furthermore, students who did not learn French were at a disadvantage in seeking future economic opportunities because higher-income positions continued to require French fluency (Benrabah 2007; Lefevre 2015). Addressing the language of instruction challenge is critical given the gap between spoken Arabic and modern standard Arabic. The close connection among language, religion, and national identity makes it difficult to make a regional recommendation. Even though this phenomenon is a regional one, it manifests itself in many different ways in different countries. Hence, it needs to be addressed with a very specific formula in each country.

Box O.7 Improving foreign language instruction is important

In Algeria, Morocco, and Tunisia, science and mathematics are taught in French at the secondary level. However, only 30 percent of Tunisians, most of whom live near the capital, are fluent in written and spoken French. In Algeria, urban populations are fluent in French, but only 55 percent of rural populations are fluent. A similar dynamic occurs in Morocco. Students in areas without French fluency have less access to education and less achievement (Lefevre 2015). In TIMSS 2007 and 2015, students being tested in their mother tongue performed better than those being tested in a language not used at home. If mathematics (or any other subject) is to be taught in a second language, adequate support for learning this language must be incorporated.

The language of instruction (LOI) has also been contentious and problematic at the tertiary education level, pointing to the need for improvement in foreign language instruction at all levels. Most Arab countries use either English or French as the LOI for mathematics, engineering, the medical sciences, and other sciences. Qatar's rapid expansion of higher education institutions in English generated resistance (MacLeod and Abou-El-Kheir 2016). Tunisia's system continues to embrace two languages, with Arabic used for all social sciences and French used for STEM (science, technology, engineering, and mathematics) studies. Recently, the Ministry of Higher Education in the Kurdistan Region of Iraq commissioned a study of its 13 state universities to assess the impact of English-medium instruction. The study found that 63 percent of instructors were satisfied with their own level of English, and, despite English being the official language of instruction, only 30 percent spoke English all the time or almost all the time in lectures. English was used for written materials and homework, but instructors widely stated that their students' language level was insufficient for English-medium studies, despite their 12 years of English-language instruction during their earlier schooling (Borg 2015). At any education level, employing an LOI that is not the students' mother tongue requires training teachers, providing adequate curriculum and classroom resources, and ensuring increased support for students.

Use assessments for learning, not credentials

Large-scale national and international assessments can catalyze education reform at the policy level. They are often used to measure and monitor student learning by tracking within-country trends in student learning, measuring what they have learned against learning targets, and providing points of comparison with other countries. MENA countries are increasingly participating in international large-scale student assessments (see table O.2). In addition, these countries are also conducting more national assessments, which have the benefit of being able to capture learning progress directly related to aspects of national education goals, the national curriculum, and national education policies (see table O.2).

Public examinations can generate powerful incentives for change at the school, teacher, and student levels. However, if used inappropriately, they can reinforce shallow forms of learning, and classroom assessments can consume valuable lesson time without enhancing student learning. In many MENA countries, students receive one of the only measures of their learning through high-stakes year-end examinations. These examinations are then typically used to determine whether students move to the next level. More regular feedback on their learning progress could be helpful to students and teachers. In addition, high-stakes assessments often lead to perverse incentives that negatively affect the behavior of teachers, students, and parents and limit learning outcomes.

Meanwhile, in MENA high-stakes examinations reinforce the focus on acquiring credentials rather than skills. As the sole determinant of whether a student moves on to higher education, passing high-stakes

TABLE O.2 **Participation in national and international assessments has surged in MENA since 2007**

MENA economies undertaking national and international student assessments, 1995–2019

Economy	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Algeria													○ ●								□				
Bahrain									●				●		◊	◊	○ ● ◊	◊	◊	◊	○ ●	▲			○ ●
Djibouti																			×					+	
Egypt, Arab Rep.									●			◊	● ◊	◊	× ◊	◊	×		×	×	●	▲			○ ◊
Iran, Islamic Rep.	○ ●				●		▲		○ ●			▲	○ ●	♦			○ ● ▲				○ ●	▲			○ ●
Iraq																		× +							◊
Jordan					●				●			□	●		□		●	□ × +		× +	○ ● □			□	● ◊
Kuwait	○ ●						▲					▲	○ ●				○				○ ●	▲			○ ●
Lebanon									●				●	♦			●				● □ ♦	×	◊	× □	●
Libya																									
Morocco					●		▲		○ ●			▲	○ ●	◊			○ ● ▲ × +				○ ●	▲ ◊		□	○ ●
Oman											◊		●				○ ● ▲				○ ●	▲			○ ●
Qatar												□ ▲	○ ●		□		○ ● ▲	□			○ ● □	▲		□	○ ●
Saudi Arabia									●				●				○ ● ▲				○ ● ◊	▲ ◊		□ ◊	○ ● × ◊
Syrian Arab Republic													●				●								
Tunisia					●				○ ● □			□	○ ●		□		○ ●	□			□				
United Arab Emirates															□[a]		○ ● ▲	□			○ ● □	▲		□	○ ●
West Bank and Gaza									●		◊		●				●			×				×	
Yemen, Rep.								◊	○		◊		○				○ ×								

+ EGMA × EGRA ◊ National or other assessment ▲ PIRLS grade 4 □ PISA ○ TIMSS grade 4 ● TIMSS grade 8 ♦ TIMSS Advanced[b]

Source: Compiled by the World Bank, based on information from country task teams and international assessment organizations.

Note: Includes participating countries for which results were not reported because of sampling or other issues. EGMA = Early Grade Mathematics Assessment; EGRA = Early Grade Reading Assessment; PIRLS = Progress in International Reading Literacy Study; PISA = Programme for International Student Assessment; TIMSS = Trends in International Mathematics and Science Study.

a. The 2009 PISA scores pertain to the PISA 2009+ reported score for the United Arab Emirates (Dubai participated in 2009, and the remaining emirates participated in 2010).

b. TIMSS Advanced assesses the advanced mathematics and physics knowledge and skills of students in their final year of secondary school who have taken courses in advanced mathematics and physics. TIMSS Advanced was administered in 1995, 2008, and 2015.

examinations is the object of learning, especially in the last years of secondary education, rather than acquiring broader skills and learning to learn. Moreover, secondary-level high-stakes examinations usually emphasize straightforward recall and procedural applications, leading to cramming, private tutoring, and rote memorization. In Egypt, 53 percent of students resort to private tutoring, and a further 10 percent join paid study groups (Assaad and Krafft 2015).

Even in the lower grades, year-end school examinations affect opportunities for children to progress through grades, which can negatively influence teaching practices. Lebanon's students are tested monthly in class, take two examinations a year, and sit for national examinations at the end of grades 9 and 12. In the Islamic Republic of Iran and Jordan, students may pass on to the next level provided they do not fail more than three subjects in their year-end examinations. These examinations, or summative assessments, are intended to measure whether students have mastered the necessary content. They also channel students into educational tracks. However, their high-stakes nature often results in teachers emphasizing memorization for examinations over problem-solving skills (Akar 2016; Shuayb 2012). Morocco's system of examinations at each level is intended to channel students into educational and vocational tracks, and so it poses the risk of teachers using didactic rather than dialogic teaching methods (Akar 2016; IEA 2015; Shuayb 2012).

Recognizing the inherent risks, several MENA countries have reduced the emphasis on high-stakes examinations, especially in the lower grades. Jordan, Kuwait, and Lebanon have abolished high-stakes examinations that ration progression between grades 1 and 3. Kuwait's education officials noted that this change represented a substantial reduction in the dependence on examinations. Their example may guide further reforms aimed at ensuring that high-stakes examinations are rationed, do not create perverse incentives for teachers and students, and test higher-order thinking skills in other MENA countries.

Recently, East Asian countries with historically high scores on the PISA and TIMSS assessments have tried to reduce high-stakes testing at the upper-secondary level by introducing more process-oriented and student-centered assessment measures. For example, in an effort to eliminate teaching to the test and support curricular reforms aimed at learning to learn, in 2014 Japan proposed the Prospective University Entrant Scholastic Abilities Evaluation Test, which is an alternative examination to be implemented from 2019 onward. The examination will deemphasize rote memorization while giving priority to students' thinking ability, expression, and reasoning skills. The new test format includes a written questionnaire (Kimura and Tatsuno 2017).

In a similar effort to promote student learning, Korea implemented an exam-free semester nationwide in 2016 after pilot testing it for two years (Cheng 2017). So that lower-secondary school students can discover their dreams and talents free from the pressure of midterm and final exams, Korea allows teachers to make flexible use of the curriculum for one semester. This arrangement encourages student participation through discussion and practice and enables various activities such as career exploration.

There is compelling evidence that formative classroom assessments—the types of assessment procedures teachers use during the learning process to modify their activities and approaches in response to student learning—can raise learning outcomes by giving students timely feedback on how to improve (Black and Wiliam 2010; Hattie and Timperley 2007; Roediger, Putnam, and Smith 2011). Classroom assessment techniques can include verbal questioning and feedback, written quizzes, students holding up response cards or miniature whiteboards to give the teacher a real-time snapshot of classwide understanding, or activities requiring students to retrieve and apply newly acquired knowledge.

Although teachers in MENA regularly assess students, these classroom assessments are rarely aligned with student learning

outcomes or used to adapt instruction to students' learning needs. Over 70 percent of students in MENA who participated in TIMSS 2015 had teachers who reported placing a major emphasis on monitoring students' progress in mathematics through students' ongoing work or classroom tests (Mullis et al. 2016). Yet across MENA countries, classroom assessments are rarely used to adapt instruction or provide students with meaningful feedback. For example, only one in four teachers in Jordan reported using classroom assessments to inform lesson planning (Rabie et al. 2017). Failure to do so limits the potential of classroom assessments to improve student learning.

Give all children a fair chance to learn

Countries reap the benefits of education when all children learn and develop their human capital. MENA countries have made impressive efforts to expand education, but millions of children are still out of school. In the 2014–15 academic year, 14 million children across the region were not in school. Among the unenrolled, 3.5 million were children of lower-secondary school age, 5.2 million of primary school age, and 5.3 million of preprimary age (UNICEF n.d.). A wide range of factors are associated with educational exclusion in MENA. These include disability, child labor, low maternal education, exposure to conflict (see box O.8), child marriage, migrant status, living in a rural or isolated area, and belonging to a nomadic group or a group that prevents children from attending school for cultural or religious reasons (UIS and UNICEF 2014).

Policies of inclusion mean that students with physical disabilities, learning difficulties, and other special educational needs are increasingly in school alongside their peers. An estimated 53 million persons with disabilities live in MENA, yet most countries in the region still have a limited supply of special education services (Alkhateeb and Hadidi 2015). This shortfall arises from limited funding, inadequate facilities, unqualified teachers, or negative attitudes toward disability and special education. Several MENA countries, such as Jordan, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates, have developed regulations and policies to create barrier-free accessible environments for students with

Box O.8 Conflict in MENA is depriving many children of education

MENA is host to about a quarter of the world's internally displaced persons (IDPs). As of May 2018, about 2 million people were internally displaced in the Republic of Yemen, 2 million in Iraq, and 0.2 million in Libya (IOM 2018; UNHCR 2018; UN OCHA 2018). Although there are few reliable data on school enrollment rates for this group, IDPs typically face high hurdles to access education services. Rough estimates place IDPs' school enrollment at just 28 percent in the Republic of Yemen and about 52 percent in Iraq (Ministry of Education, Republic of Yemen 2017; UNICEF 2017). Enrollment rates are often not disaggregated by level of education, but enrollment in upper-secondary and tertiary education is expected to be much lower than in basic education, similar to the enrollment patterns of refugees. In Syria and host countries, 7.7 million school-age Syrian children face great obstacles in accessing education services. Among Syrian refugee children, 46 percent are out of school (formal and nonformal) in Lebanon, 36 percent in Jordan, and 37 percent in Turkey (Brussels Conference 2019).

Beyond finding a political solution to the conflicts in Syria and the Republic of Yemen, more needs to be done to ensure that the generation of young refugees and displaced children is not left behind in education. This includes international support for countries that are hosting refugees, countries that are in conflict, and postconflict countries to help expand school infrastructure and provide the necessary inputs for teaching and learning. It is also important to help create safe learning environments and provide financial relief to displaced and refugee families. At the tertiary level, it is important to offer programs that enable refugee students to access higher education.

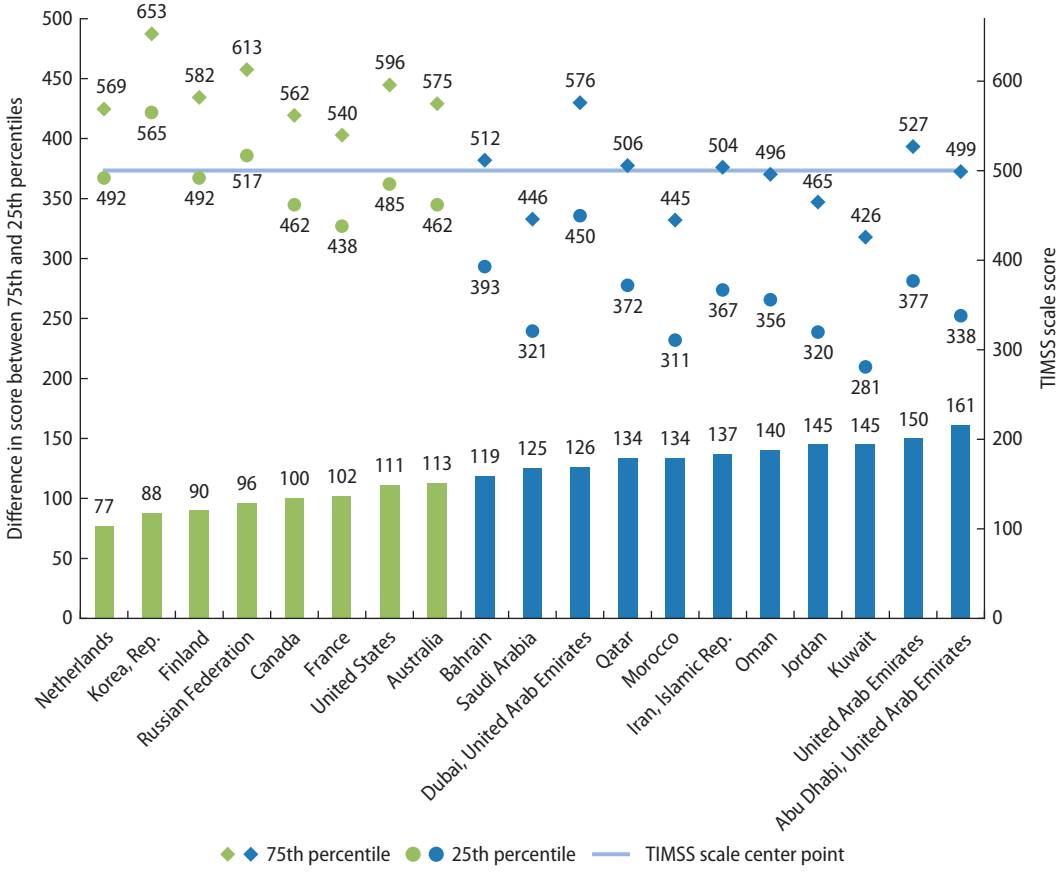
disabilities. However, inadequate school facilities and shortages of support personnel such as school psychologists, sign-language interpreters, speech and language pathologists, and physical and occupational therapists are a challenge (Alkhateeb and Hadidi 2015).

Mind the learning gaps and support the lowest performers

Although the average levels of student performance on international assessments have been low in MENA, there is a wide range of student performance within each country. Unlike in many advanced countries—such as Canada, Estonia, Finland, and Japan—where the link between test scores and socioeconomic status is generally weak, in MENA the learning gaps are substantial between students by socioeconomic level (OECD 2016a). Among 15-year-olds, the economic, social, and cultural status of their household correlates with substantial differences in student performance, as shown by the PISA 2015 results. In Lebanon, the gap is equivalent to a difference of more than two full years of schooling. Moreover, all nine MENA countries that participated in the 2015 grade 4 TIMSS mathematics assessment were among the 13 countries with the widest gaps between the top and bottom quartiles of performance (see figure O.14). Improving performance among those at the bottom would provide the most rapid improvement in overall levels of learning.

FIGURE O.14 MENA has the biggest gaps in student achievement between top and bottom performers

Difference in scale score between the 75th and 25th percentiles of grade 4 mathematics achievement, TIMSS 2015



Source: Mullis et al. 2016.

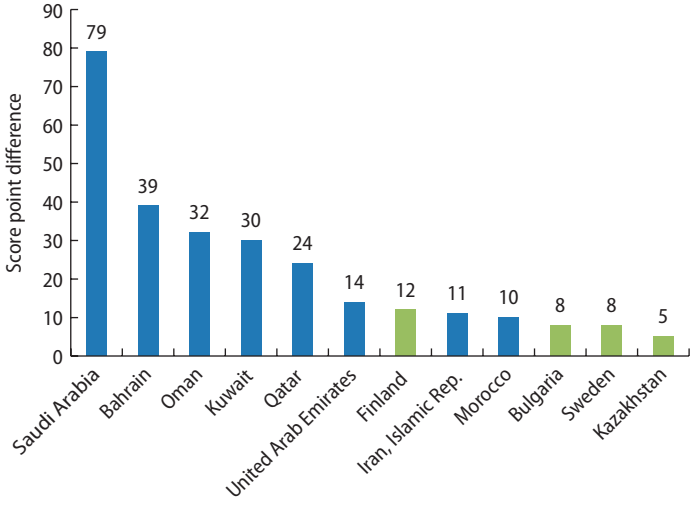
Note: Includes all participating MENA countries (blue) and a selection of other countries. The diamonds represent the 75th percentile scores, and the circles represent the 25th percentile scores in the selected comparison countries. The horizontal blue line represents the TIMSS scale centerpoint, which is the mean of the overall achievement distribution in 1995 (kept constant over the years). TIMSS = Trends in International Mathematics and Science Study.

TABLE O.3 MENA's student achievement gaps have both narrowed and widened
Change in grade 8 TIMSS average achievement, 10th and 90th percentiles, 2011 and 2015

	Average score		Change in		
Country	2011	2015	Average score	10th percentile	90th percentile
Mathematics					
Bahrain	409	454	45	72	19
Oman	366	403	37	54	22
Qatar	410	437	27	40	20
Iran, Islamic Rep.	415	436	21	20	23
Morocco	371	384	13	20	8
United Arab Emirates	456	465	9	–4	23
Lebanon	449	442	–7	–7	–7
Jordan	406	386	–20	–8	–22
Saudi Arabia	394	368	–26	–13	–35
Science					
Qatar	419	457	38	52	19
Oman	420	455	35	54	19
Morocco	376	393	17	18	16
Bahrain	452	466	14	12	18
United Arab Emirates	465	477	12	–3	22
Lebanon	406	398	–8	–13	–2
Iran, Islamic Rep.	474	456	–18	–16	–19
Jordan	449	426	–23	–15	–21
Saudi Arabia	436	396	–40	–59	–20

Source: Mullis et al. 2016, 72.
Note: TIMSS = Trends in International Mathematics and Science Study.

FIGURE O.15 MENA has the largest gender gaps in test scores
Highest score point difference in science (girls – boys), TIMSS grade 4, 2015



Source: Martin et al. 2016.
Note: The difference between girls and boys in the Islamic Republic of Iran is not statistically significant. TIMSS = Trends in International Mathematics and Science Study.

Some MENA countries are closing the achievement gap between their best and poorest performers, while others appear to have a widening gap (see table O.3). A notable case among all participating TIMSS countries is the United Arab Emirates, where the top students are performing better than in previous years, but the poorer performers are faring worse. Increasing retention through targeted programs can help bottom performers at risk of dropping out to stay in school.

Pay attention to the boys because they are falling far behind girls in learning outcomes

MENA has the largest gender disparities in student achievement, and they are consistently in favor of girls. Eight out of the 10 countries with the largest gender gaps in TIMSS are in MENA. Saudi Arabia has the largest gap, with boys significantly underperforming compared with girls (see figure O.15). Because the

Box O.9 MENA's gender paradox presents a dual challenge for human capital

The underperformance of MENA's boys is a phenomenon on a scale not seen elsewhere in the world. Education systems in MENA are clearly not meeting the learning needs of boys. And yet although girls are outperforming boys in education, MENA has the lowest female labor force participation rates among all regions in the world, according to the World Bank's World Development Indicators database. On average, across all MENA countries only 20 percent of women ages 15 and older participate in the labor force (World Bank, World Development Indicators database).

The inefficiencies and costs associated with the loss of learning among boys are substantial, economically and socially. Moreover, the underrepresentation of women in the labor market, despite the fact that women considerably outperform men in learning from the early years all the way to adulthood, represents a substantial underutilization of human capital.

learning outcomes for all MENA students are low, the pervasive gender gap amounts to a learning crisis for boys in the region. Gender gaps in learning appear early; by the second grade, girls are outperforming boys in reading. For example, in West Bank and Gaza there was a 10 percentage point gap between girls (17 percent) and boys (27 percent) who could not read a single word of connected text. Across the 18 countries that participated in the EGRA between 2010 and 2015, the gender gap is the most pronounced for MENA countries (USAID 2018). The early manifestation of gender gaps in foundational skills such as literacy and numeracy points to the need to address the specific learning needs of boys in the early grades. Indeed, interventions that are not targeting boys and students in need of additional support may exacerbate the gender gap (see box O.9).

Dedicate more resources to children from the poorest households

Inequality of opportunity[10] starts early in life. Therefore, efforts to address it must also start early. Children born into circumstances not conducive to their well-being are likely to fall behind in their health, nutrition, and physical, cognitive, social, and emotional development—all precursors to success in school. For example, at just 18 months of age, a child's vocabulary reflects the socioeconomic status of his or her parents (Center on the Developing Child 2009). By age 3, the vocabulary of a child whose parents have a college degree can be as much as three times larger than the vocabulary of a child whose parents have not completed high school (Center on the Developing Child 2009).

Access to early childhood education in MENA is highly unequal within countries. For example, in Djibouti and Egypt a child from the wealthiest quintile of households is six times more likely to attend an early childhood care and education (ECCE) program as a child from the poorest quintile (El-Kogali and Krafft 2015). In Iraq, Libya, and Tunisia, children from the wealthiest quintile are 17 times more likely to attend an ECCE program than children from the poorest quintile. What are the short- and long-term implications of inequalities in early childhood development, care, and education? When children start primary school, they are already set on different trajectories. Some children will have all they need for success in school and in adult life. Others will start their school life at a disadvantage, which will have subsequent effects throughout their years of schooling and beyond.

Finally, large enrollment gaps exist in MENA, particularly between the richest and the poorest children. For example, in Morocco more than half of lower-secondary school-age children in the poorest quintile of households are out of school, compared with

6 percent in the richest quintile. Gaps in rates of out-of-school children also occur by gender and location (urban versus rural).

Leverage technology toward a stronger push for learning

The rapid penetration of technology and the myriad opportunities it presents entice citizens and policy makers to invest in digital technologies. Across MENA, three underlying factors will keep access to technology at the forefront: (1) governments' desire to diversify away from an oil-dependent economy; (2) efforts by businesses to remain globally competitive by extending their reach on digital technologies; and (3) the opportunity offered by digital technology to support learning for all. A technology-driven future will require children to be technologically savvy, and education systems must support them in becoming so. Although many other sectors have already borne the brunt of technological disruption, the education sector has not changed substantially in its principal mode of delivery over the last 150 years—globally and in MENA. Technology offers a unique opportunity to deliver high-quality education in a more efficient and effective manner. If leveraged smartly, technology can help MENA countries to advance their education systems and support learning.

EdTech solutions hold promise to boost learning

EdTech—information and communication technology (ICT) applications aimed at improving education—have been growing fast globally. In 2017 revenue from the global EdTech market was estimated at US$17.7 billion (Business Wire 2018).[11] Several factors have fueled this growth: recognition of the importance of education to economic growth; a flattening or even decline in public financing of education, thereby creating space for private sector participation; and—perhaps most important—efforts to disrupt this sector through technology in the hope of increasing student learning and moving rapidly ahead in international education rankings. Several conditions in MENA today support greater adoption of EdTech, including a young, dynamic, and tech-savvy population; an education market valued at about US$100 billion (Al Masah Capital 2012); and a region in which countries on average allocate about a fifth of their budget to education (Trade Arabia News Service 2013; World Bank 2008). All of this points to an environment conducive to EdTech and its growth.

Many online platforms in MENA are providing Arabic learning content. Some of the English-language content from Khan Academy and others has been translated into Arabic. MENA-based content providers such as Nafham have followed the Khan Academy format with original content that uses curricula from several countries in the region, along with crowdsourcing to upload lessons. Others—such as Bibliotheca Alexandrina in Egypt, the Education Media Company in Morocco, and Talal Abu-Ghazaleh International University in Lebanon—have created digital content in different languages.

Some initiatives allow qualified refugees to access online courses. For example, the German distance-learning university Fernuniversität Hagen allows qualified refugees to access all online courses and provides language training. Kiron University has partnered with massive open online course (MOOC) providers in the United States to organize a two-year online course for refugees, with the possibility of completing their studies at a host university in Germany (Unangst 2017). In the United Kingdom, the Department for International Development's Partnership for Digital Learning and Increased Access (PADILEIA) aims to address the higher education needs of young people displaced in Jordan and Lebanon by the Syrian crisis through blended academic programs, including MOOCs, targeted online learning, and classroom-based learning for displaced students (SPHEIR 2017).

Leverage the strong public support for education technology in MENA

Families, students, and the broader community in MENA countries strongly support further

integration of digital technology in classrooms to change the nature of education and training systems. In a survey on social media and education reform across 13 MENA countries, most respondents supported ICT in the classroom (ASMR 2013). Of those surveyed, 84 percent felt universal Internet access should be a norm and that children in schools should be able to access the Internet on personal devices. More than three-quarters felt that social media should be part of the school curriculum; indeed, 61 percent believed students should be allowed to use social networking media in class. Responding to a question on whether students should be allowed to engage in a range of computer-related activities, almost 80 percent noted they would be happy to have their children use "collaborative web tools" in classwork. Nevertheless, those surveyed also recognized that some aspects of access to technology could have detrimental effects on student learning.

Expand ICT infrastructure for wider reach of EdTech solutions

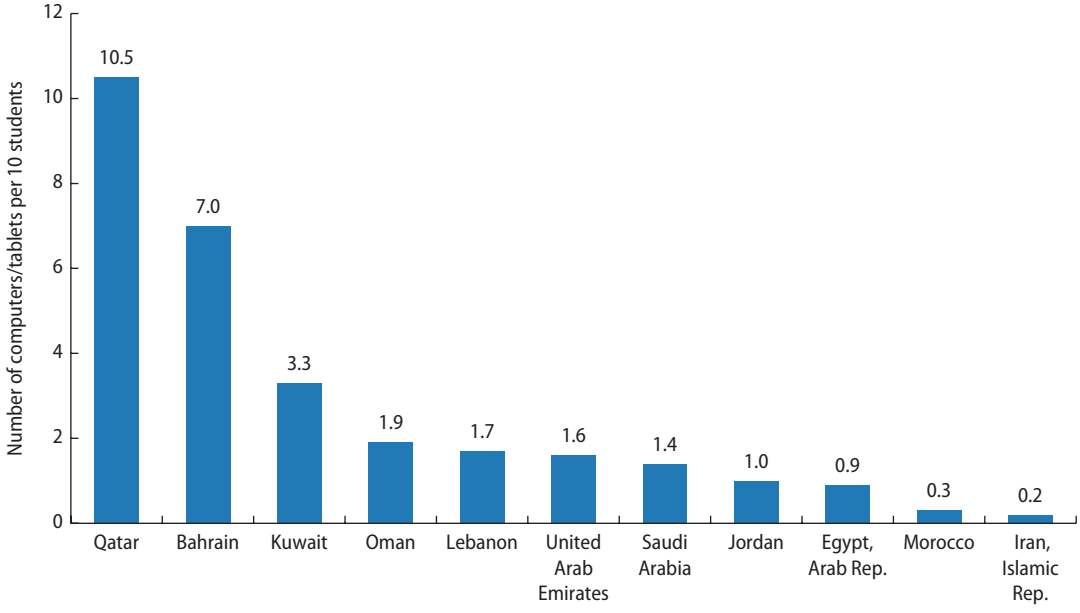
Accessing EdTech solutions and platforms requires ICT infrastructure. MENA countries have made substantial investments in school ICT infrastructure (Lightfoot 2011). ICT is available in most MENA schools, averaging about 2.7 computers for every 10 grade 8 students (see figure O.16). However, the international average is 4 computers for every 10 grade 8 students. Cross-country variability is quite wide, with 10.5 computers for every 10 students in Qatar, and only 1.0 computer for every 50 students in the Islamic Republic of Iran (Mullis et al. 2016).

EdTech is necessary but not sufficient to improve student learning outcomes

The evidence is mixed on the impact of technology on education. A recent study by the Massachusetts Institute of Technology's Abdul Latif Jameel Poverty Action Lab (J-PAL) evaluated more than 100 EdTech interventions and reveals important insights on the use of technology in education (Escueta et al. 2017). The study notes that online connectivity is a necessary but not sufficient condition for improving student learning outcomes aided by EdTech's most promising solutions. Teachers must be capable of guiding students on how to search online resources

FIGURE O.16 Computers are available in MENA's schools, although coverage varies considerably

Number of computers (including tablets) available for student use in school for every 10 grade 8 students, 2015



Source: Mullis et al. 2016.

Box O.10 EdTech offers opportunities to leapfrog learning

Computer-assisted learning (CAL) programs pair face-to-face classroom learning with online curriculum components. These programs work well when delivered to students through structured online and in-class settings in which teachers are trained to facilitate this interaction. CAL occurs any time a student learns through a combination of supervised school experiences away from home and online content delivery, with some element of student control over time, place, path, or pace (Horn and Staker 2011). With blended learning, classroom and online experiences are tailored to reinforce one another (Horn and Staker 2012).

Technology-based behavioral interventions (nudging) draw on insights from behavioral economics. These interventions are proving effective in a wide variety of education settings (Escueta et al. 2017). Nudging presents beneficiaries with choices without changing the costs of these choices in any real way. Typically, nudges reach users by text message, reminding parents to register children for early childhood development programs or review their children's secondary report card, or alerting university students that it is time to submit student loan materials (Economist 2017; Escueta et al. 2017; Pugatch and Wilson 2018).

Digital textbooks are interactive and allow unique learning experiences for students. At one end of the spectrum in MENA are mobile apps that provide online interactive libraries, such as Rawy Kids in Egypt or the Kitabi Book Reader in Lebanon. At the other end are those that use entertainment and games to encourage learning, such as Sho'lah and Loujee, a "smart" Arabic toy aimed at learning-through-play (Arab News 2016). Recently, two smartphone app–based games were shown to improve early grade reading in conflict-ridden Syria: Antura and the Letters and Feed the Monster, both of which showed positive learning results on initial impact evaluations and won awards at the 2017 EduApp4Syria competition (Comings 2018).

and supporting the growth of critical thinkers who can organize, prioritize, and synthesize along the way. The study also offers some options that could be applied in MENA countries (see box O.10).

A recent analysis of PISA results for MENA countries confirms these findings. Access to technology alone cannot solve problems related to student outcomes (McKinsey 2017). The impact of adding one more computer to a classroom is small, whereas supplying teachers with computers has a larger positive impact; adding a computer for the teacher in each classroom is six times more effective in terms of student PISA scores than giving a student a computer.[12] Although increasing access to computers and the Internet may not on its own measurably improve academic achievement, it has been successful in increasing the ease of technology use and the time spent learning to use digital devices. In this sense, online connectivity in the classroom could be a necessary but not sufficient condition for improving student learning outcomes aided by EdTech solutions.

To ensure learning for all, special attention should be paid to digital literacy skills. In many countries, youths from both advantaged and disadvantaged backgrounds spend roughly the same time online each week. However, there are significant differences in the way they use the Internet. Even in high-income countries, where access to the Internet is almost equal for children from different socioeconomic backgrounds, students from disadvantaged backgrounds are more likely to chat or play video games than their richer peers, who use the Internet more to search for information or read the news (World Economic Forum 2016). To turn "opportunities into real opportunities" (OECD 2016d, 3) for everyone and reduce (digital) inequalities, schools must teach literacy skills while actively promoting technology as a means of improving skills and knowledge, including learning about potential job markets.

Pull for skills

Complementary reforms are needed for education to achieve its potential

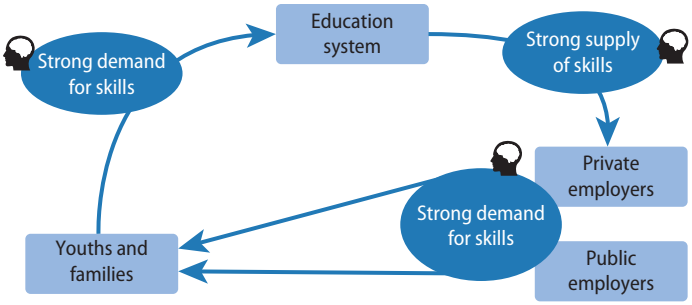
For education to reach its full potential, it must provide students with skills that satisfy the economic and social needs of each country. A push for learning would move education closer to fulfilling its potential, but it would be a second-best approach that would leave most of that potential untapped (Rodrik 2008).

A first-best approach involves multisystem reforms that align a push for learning with a pull for skills. It includes economic reforms to match the skills required in the labor market with those conferred by education and sought by parents and students. Multisystem reform would seek to address distortions in the education sector and beyond. For example, it would address signals and incentives from the labor market as well as implement reforms within the education sector. Without a realignment of the labor market that increases the demand for skills, the education sector's contribution to goals such as economic diversification will not be fully realized. Moreover, without civil service reforms that support hiring, motivating, and empowering the best teachers, the teaching profession would remain undervalued and learning would be compromised. It is therefore important to understand how the education sector interacts with the economic, social, and political environment to achieve expected outcomes and to implement policies that address both the education system and labor market challenges.

Improve signaling for skills

Distortions in the labor market in MENA countries have led to an emphasis on credentials rather than skills. To break out of the current credentialist equilibrium in MENA and move toward a skills equilibrium, employers need to send youths and families strong signals of the kinds of skills needed. For their part, these youths and families need to in turn demand the relevant skills from the education system.

FIGURE O.17 MENA needs a skills equilibrium



Source: Adapted from Assaad, Krafft, and Salehi-Isfahani 2018.

The education system needs to then respond by supplying the set of skills needed and signaling the skills acquired (see figure O.17).

However, employers in MENA are not effectively communicating (signaling) to the education system or students and parents what skills they need. This weak signaling is exacerbated by the fact that in most countries, private sector firms are disproportionately microenterprises, and these businesses lack the ability to send signals effectively to the region's education systems (Assaad, Krafft, and Salehi-Isfahani 2018). Nor are these firms well positioned to receive signals from the education system. Currently, the signals are essentially for credentials (see box O.11).

Address rigid labor policies

MENA's rigid labor policies also constrain the pull for skills. For example, labor laws make it extremely difficult for employers to fire employees (World Bank 2013a). This factor creates a disincentive for the private sector, and employers are therefore less likely to hire on a trial basis to learn about a candidate's skills, as is common practice in other parts of the world. That disincentive, coupled with the absence of information on the quality or productivity of graduates, means that firms tend to hire based on social networks.

Personal connections, not skills, drive labor market outcomes in MENA, further dampening the demand for skills. A Gallup

Box O.11 Signaling in education is communicating about skills

Countries across MENA are not in a skills equilibrium. The Gulf Cooperation Council is experiencing gaps between nationals and immigrant workers in terms of skills, labor prices, and labor mobility. There, policy makers are discussing the need for a fundamental reform of the skills system. For example, of the 23,000 annual new job seekers in Kuwait, some 10,000 would be unable to find suitable jobs. Placements for these job seekers would require the demand for labor to increase (employers wanting more of the kinds of workers currently produced by the education system) or education reforms to match skills more closely with the labor market (Sleiman-Haidar 2016).

Signaling is the process through which one party reveals some information about itself to another. For example, in the labor market employers do not immediately know the productive capabilities of their new hires. One prominent way in which applicants signal their abilities is through education (Arcidiacono, Bayer, and Hizmo 2010; Spence 1973). In the United States, the résumés of college graduates include information on grades, majors, and test scores. This information acts as a signal of ability and increases the likelihood that college graduates will be paid in line with their abilities. Most high school graduates have fewer ways in which to signal their abilities, although the financial returns to ability increase steeply with experience (Arcidiacono, Bayer, and Hizmo 2010).

In MENA, test scores do not currently appear to provide adequate information about ability (Assaad, Krafft, and Salehi-Isfahani 2018). In addition to making test scores more meaningful (by measuring skills more effectively), changes in labor policy could provide employers with the information and flexibility they need by, for example, encouraging trial periods of employment prior to long-term contracts. Together, these practices would send employers a more accurate signal of graduates' skills.

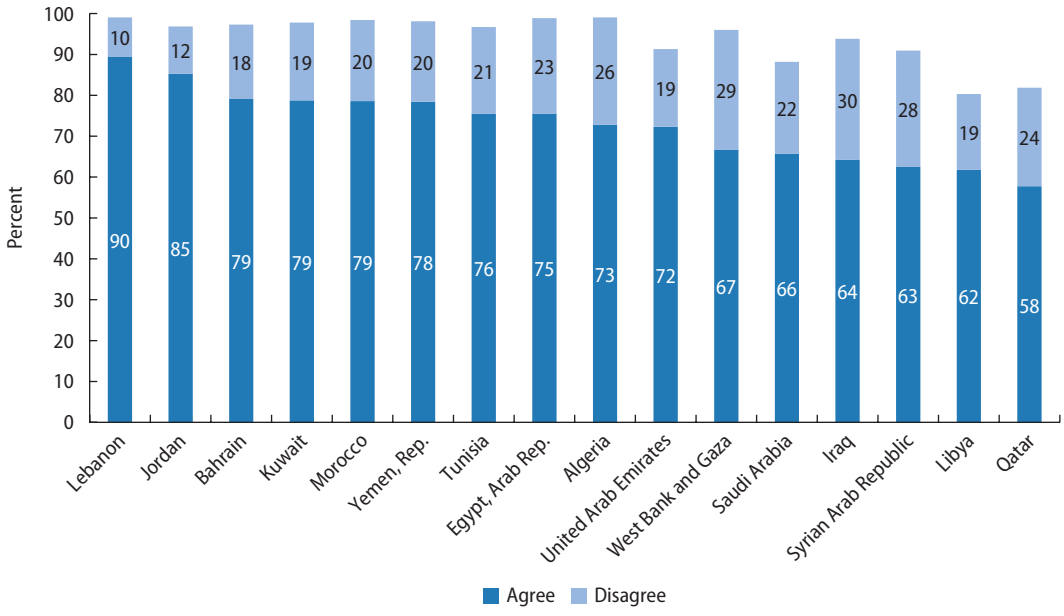
Signals from employers to students and educational institutions are important as well. National employer surveys, with widely publicized reports and results, could be one route to signaling the skills that employers need. Career academies or other models of employer-school partnerships can give students information on the jobs available and the skills required. Partnerships that facilitate internships, mentoring, and other informational experiences may be effective (Lerman 2013).

Poll conducted in 16 MENA economies found that, on average, 70 percent of respondents agreed that a personal connection is critical to securing a job (see figure O.18). Families and students also lack incentives to focus on skills; in the labor market, measurable skills from education are rewarded much less than, if at all, social background or credentials (Assaad, Krafft, and Salehi-Isfahani 2018; Krafft and Assaad 2016; Krishnan et al. 2016).

Effective reforms, such as those in China, address both rigid labor policies and the education-specific challenges that contribute to low skills and poor signals. Previously in China, strict regulations, a lack of competition, and an inability to fire unproductive workers resulted in low productivity (Morrison 2011). Within the command economy, workers were guaranteed lifetime employment and assigned a job from which their employer was unable to terminate their appointment, with wages determined by seniority and education level (Meng, Shen, and Xue 2013). In the late 1970s, China successfully implemented multiple economic reforms, including giving more wage flexibility to firms and introducing a labor contracting system that moved away from lifetime tenure and gave state-owned enterprises the right to lay off workers. Following China's first national work conference in 1980, enterprises were granted more autonomy in hiring, and job seekers were given more autonomy to find jobs, including in the private sector (Brooks and Tao 2003).Wage flexibility, including instituting bonuses, has been gradually increased, and the share of bonuses in total wages for all enterprises increased from 2 percent of the wage bill in 1978

FIGURE O.18 A personal connection (*wasta*) is critical to securing work in MENA

Percentage responding to the statement that a personal connection is critical to securing work



Source: Gallup Poll 2013.

to 16 percent in 1997, effectively giving employees the incentive to perform well (Brooks and Tao 2003). Since 1997, earnings have almost doubled (Meng, Shen, and Xue 2013). Meanwhile, the reforms have led to higher returns to schooling (Zhang et al. 2005). Students have greater incentives to learn skills that will allow them to earn higher wages based on their skill set and productivity instead of their education credentials.

Reform civil service to attract the best educators

A pull for skills requires civil service reforms to recruit, retain, and empower the best educators. No education system will be successful unless it provides meaningful incentives (financial or professional) for teacher effort (World Bank 2018e). Although the evidence is mixed on the effects of financial incentives on teachers, professional incentives appear to hold the potential for better student learning outcomes. Merit pay systems may be warranted in some contexts, but the international evidence is clear that well-chosen professional incentives have even greater potential. Changes to career ladders and other forms of recognition for teachers have had substantial motivational effects in several high-performing countries. These systems use appraisal processes to identify talent and accomplishment (Darling-Hammond et al. 2017; Liang, Kidwai, and Zhang 2016).

In most MENA countries, teachers' career advancement pathways depend mainly on years of service, not performance (World Bank 2012). Greater efforts are needed to reform teacher incentive systems to promote good teaching and learning and to provide rewarding career pathways. These types of initiatives may require reforming civil service rules and regulations to support incentive and accountability systems. For example, in Shanghai teachers can advance professionally through a five-level ranking system (Liang, Kidwai, and Zhang 2016; World Bank 2018a). Australia, Canada, and Singapore have similar career ladders or pathways that reward teachers' knowledge, skills, and contributions (NCEE 2016).

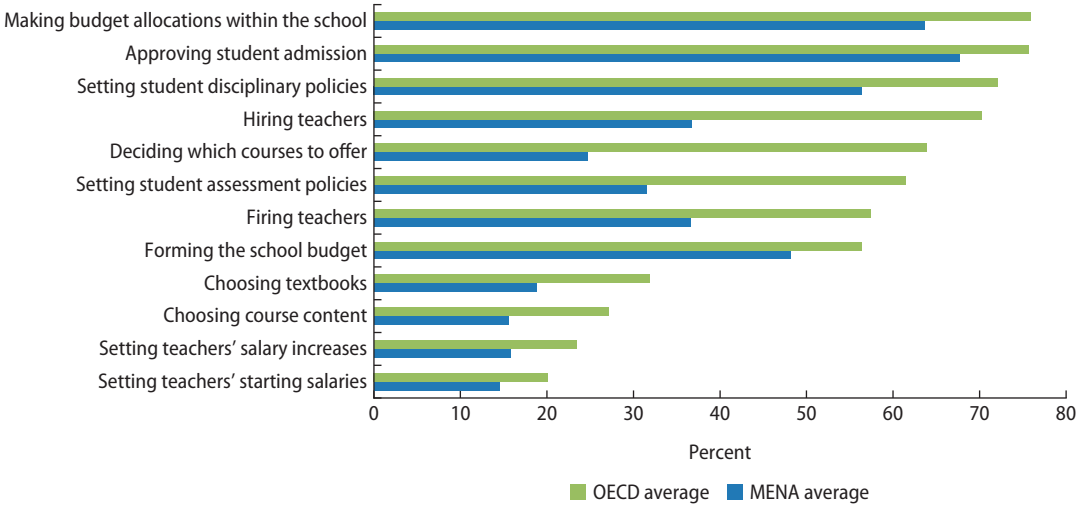
Useful examples of rewarding and flexible pathways for school principals can be found around the world. For example, in Flemish Belgium a former principal can serve as director of a community of schools that collaborates on issues such as career guidance for students, course provision, and special needs education (Pont, Nusche, and Moorman 2008). England has created a Leadership Development Framework that provides a pathway of programs and standards that extend across a school leader's career, including opportunities for experienced school leaders to support other principals (Pont, Nusche, and Moorman 2008). In Shanghai, the career ladder of school principals has four levels that are aligned with job performance (Jensen, Downing, and Clark 2017b; Liang, Kidwai, and Zhang 2016; NCEE 2016).

In MENA, a school principal's authority to determine resource needs, budgeting, and personnel management is relatively low (World Bank 2015c). Most principals in MENA's public schools do not have the authority to select teachers for their schools or to fire underperforming or chronically absent teachers. By contrast, many OECD countries (Denmark, Ireland, the Netherlands, New Zealand, Slovenia, Switzerland, the United Kingdom, and the United States) give the school principal a substantial role in hiring and firing teachers (see figure O.19). Of the six MENA countries participating in PISA 2015, the three with the highest mathematics scores (Lebanon, Qatar, and the United Arab Emirates) grant a level of responsibility to principals for school governance that is similar to that in OECD countries, although more studies are needed to demonstrate whether the correlation between school governance and student performance is causal.

Efforts are under way to improve school leadership in some MENA countries, although it has been a slow process. Tunisia's primary school directors have

FIGURE O.19 School principals in MENA have less authority than those in OECD countries

Percentage of students in schools in which the principal has considerable responsibility for ...



Source: OECD 2016a.
Note: OECD = Organisation for Economic Co-operation and Development.

little access to financial resources. Although they are explicitly required by law to provide guidance to teachers on curriculum and teaching-related tasks, in practice these tasks are often left to pedagogical counselors and inspectors who make periodic visits. Tunisia's school directors also do not have the authority to select or remove teachers in their schools. Likewise, they do not have the authority to reward strong performance. Recognizing these governance issues in primary education, Tunisia has designed a project aimed at empowering school leaders and strengthening school management that will be implemented in the coming years (World Bank 2018c).

Align curricula with the skills demanded

Official curricula determine what education systems intend their students to learn. Ideally, those curricula should reflect the skills that prepare students for social and economic life, and any reforms should be aimed at ensuring that what students learn aligns with the skills they need. In fact, curricula are the nexus where the multiple spheres of society, the labor market, and the education system should meet. The shift from a credentialist equilibrium to a skills equilibrium can be observed through curricula. Systems are aligned when official curricula reflect the skills demanded by society and the labor market. Conversely, when official curricula are outdated and disconnected from practical, real-life content, the result is a mismatch between what students acquire and what society and employers require.

Across the world, curricular reforms are moving toward expressing outcomes in terms of skills and away from defining curricular content only as subject material to be taught (UNESCO 2017b). This shift represents a greater pull for skills as the focus moves from the acquisition of facts and toward what students are able to do with their learning—that is, the skills students have acquired as a result of the education process.

Curricula in education systems across MENA reflect the belief that education should provide academic content, workforce preparation, and social and civic development. Recent reforms over the last few decades have added, for example, life skills, foreign languages, problem-solving approaches, and more science, mathematics, and information technology to curricula (Alayan, Rohde, and Dhouib 2012). The legislative rhetoric in MENA countries on what skills students should acquire in school aligns with 21st-century skills. Most emphasize mastery of Arabic and foreign languages, awareness of human rights, desire for international cooperation, awareness of environmental and conservation issues, critical thinking, and research skills. For example, Saudi Arabia's education legislation states that students should have the skills and knowledge to contribute to society economically and culturally and to build up their communities. The United Arab Emirates' curriculum document states that its education system trains students for physical, intellectual, and emotional development and prepares them for their future. Morocco's goals focus on language acquisition, developing appropriate social skills, understanding civic matters, and preparing students for future careers (UNESCO 2011).

Yet even though the legislative rhetoric may reflect a modern approach to education, the material studied, and the pedagogical approaches used, many MENA classrooms remain traditional and disconnected from students' everyday lives (Bouhlila 2011). Material is presented as a set of facts and processes to be memorized and in a manner that does not encourage independent learning and investigation. Connections between theory and practice are left unexplored, as are links between past and present (Alrebh and Al-Mabuk 2016). In addition to the

Box O.12 Reforming vocational education

In some MENA countries, the vocational education tracks are growing and include religious, technical, industrial, agricultural, and commercial education. Algeria has recently seen increased enrollment in vocational education. The nation has partnered with public and private companies to create programs in construction, public works, electricity, agriculture, and tourism (Oxford Business Group 2015). Bahrain began to introduce apprenticeships in 2007–08. After the 2011 revolution, the Tunisian Ministry of Education began to develop a reform plan that will include restructuring its vocational education tracks (Oxford Business Group 2017), and there is interest in other countries across the region in making vocational education work better for students and for the labor market.

Vocational education works best when schools collaborate with employers. In Egypt, vocational schools lack appropriate facilities and hands-on learning opportunities (Krafft 2013). Vocational education has also failed to adapt appropriately to the available jobs, and it may be too rigid in its structure, failing to provide students with a broad enough foundation for employment.

poor learning that results, a lack of relevance to real life makes students less interested and less prepared for the world beyond school. Relevance is particularly important in programs that are intended to relate closely to the workplace (see box O.12).

Internationally, economies take a variety of approaches to creating and implementing skills- or competency-based curricula. In U.S. public schools, competency-based systems use state learning standards to determine academic expectations and define "proficiency" in a given course, subject area, or grade level (although other sets of standards may also be used, including standards developed by districts and schools or by subject-area organizations). Several high-scoring East Asian education systems (Hong Kong SAR, China; Japan; Korea; and Singapore) have begun to legislate and implement competency-based curricula to help students develop 21st-century skills by reducing the relative weight of subject-centered education. Among these economies, some, such as Korea, prefer greater control and prescribe the curriculum. Others, such as Japan, set general guidelines and grant greater autonomy to schools and teachers to develop their curricula (Asia Society and OECD 2018; Cheng 2017; Moon 2007).

A few MENA economies have recently begun to explore competency-based learning. Through its Integrated Education Reform Program, Kuwait is transforming its curricula and instructional and assessment methods. This approach focuses on the student, emphasizes applied knowledge, and caters to different learning abilities. A national curriculum framework has been developed by local education professionals, along with curricular standards for all subjects and grades. Competency-based textbooks are being developed in line with the new standards, as well as a national assessment to gauge progress at the national, school, and student levels.

Recognize that context matters for learning and skills

Implementing education reforms in MENA through a push for learning and a pull for skills will not achieve the same results across all contexts. There are multiple models for transforming education. Finland and Korea were both top scorers in PISA 2015, a signal of strong learning. Yet the two education systems producing this learning are quite different (see box O.13).

Box O.13 Finland and the Republic of Korea rely on different successful education models

Both Finland and Korea have successful, high-performing education systems, and yet these systems differ greatly. Korea is known for its rigorous, test-driven system, whereas Finland has a more accommodating, flexible system with no mandated standardized tests, except for college entrance exams (Darling-Hammond, Wei, and Andree 2010). A high school student in Korea spends on average 10 hours a day at school and is under immense pressure from his or her family to do well (Ellinger and Beckham 1997). By contrast, Finland allows students to take courses at their own pace in their final years of schooling, enabling them to learn the material better with less stress and on their own time (Morgan 2014). There is no clearly "right" education system—both of these high-performing systems promote learning.

And yet despite their different environments, these systems have a few distinct similarities. Both countries are committed to providing students with equal learning opportunities. In Korea, teachers rotate to different schools every five to seven years, creating more chances for exceptional teachers to interact with disadvantaged students (Morgan 2016). PISA revealed that the opportunities to learn in Finland are essentially the same throughout the country (Morgan 2016). Finnish schools offer welfare services and free early academic support for students who have needs in reading, writing, or math (Morgan 2014, 2016), which helps to diminish preexisting inequalities among students, enabling them to learn.

In addition, both countries invest in and develop accomplished teachers. In Finland, teaching is a highly respected profession that is often perceived to be more important than medicine or law. Finland admits only the top 10 percent of students to the teacher education program. Teachers come out of the five-year intensive program well prepared, allowing them to have more autonomy to teach the way they feel is most effective (Morgan 2014). The program involves a wide variety of training, including observing teachers in the classroom, practicing teaching lessons with students, as well as preparing students to become researchers and practitioners. In Korea, teachers are required to take 90 hours of professional development courses every three years to enhance their teaching. One Korean professional development program offers an advanced certificate, which often leads to an increase in salary and sometimes to a promotion (Darling-Hammond, Wei, and Andree 2010).

MENA countries need to roll out reform efforts based on what is feasible in education, economic, or social reform. Successful reforms will depend on understanding the existing constraints (Rodrik 2008). For example, countries such as Jordan and Lebanon face a large influx of refugees from the civil war in Syria, so any reforms of their education systems must consider the need to accommodate refugee children in the system and the associated constraints. Another example is when coordination between the education sector and labor market is not feasible, and the information needed to provide specific in-demand job skills is not available. In this case, the education system could, in the interim, focus on important foundational skills in schools. When coordination between the education sector and labor market is feasible, the education system can emphasize the development of more targeted job skills because educators will know what skills employers need. Conditions that enable or hinder program success are a crucial aspect of successful reforms.

How reforms are designed, introduced, approved, and implemented within a specific country also determines their success. For example, in Mexico reforms were introduced after significant negotiations with teachers' unions, which resulted in their successful implementation. In Tunisia, the reform process became confrontational and was ultimately blocked (Grindle 2004; Kingdon et al. 2014; World Bank 2018c).

The effectiveness of different policy options often depends on whether complementary conditions are in place. For example,

school-based decision making can be effective in improving learning outcomes, but it may be less effective in disadvantaged contexts in which parents are less able to participate (Carr-Hill, Rolleston, and Schendel 2016). Meanwhile, early childhood development programs have enormous potential to improve learning outcomes, but they are ineffective when program quality is low (Bouguen et al. 2013; Jung and Hasan 2014; Temple and Reynolds 2007) or when they are not available for the highest-risk populations (Karoly 2017).

Sufficient resources and a sustained approach that stays the course to the end while continuously monitoring results are also important. In Morocco, a lack of adequate funding was a big obstacle to achieving the goals of education reform between 2005 and 2009 (European Commission 2010). High turnover among the top leadership of ministries of education and senior administrators also stalls reform efforts. Between 2010 and 2017, Jordan had six ministers of higher education, Egypt had seven, and Lebanon had four—all of whom were in office for less than three years.[13] Recent high turnover in ministers of education has also been noted in Kuwait, Morocco, and Saudi Arabia.

Tackle social norms that hold back education

To make any substantial changes in education, countries must tackle the inefficient social norms that inhibit reform. Changing social norms is not easy, but it can be done. Raising awareness about the costs or inefficiencies of certain norms or the benefits that would accrue to society from reforms can influence a shift in the social mind-set. However, such an effort would have to be based on credible evidence not connected to any ideological or political rhetoric and would have to focus on real, substantial reforms and not minor changes in policies (Khemani 2017). Changing laws can also lead to a shift in norms. For example, laws on wearing seat belts in cars led to a shift in the social norm for driving safety. However, it is not enough just to enact laws; they must be strictly implemented and encouraged. Meanwhile, a behavioral response to incentives in the short run can lead to longer-term shifts in behavior and social norms (World Bank 2015e). An example is nudging via text message to encourage parents to register their children for ECD programs (Escueta et al. 2017; Pugatch and Wilson 2018).

Another approach to influencing norms is to identify champions or norm entrepreneurs within social groups who could lead or demonstrate the change, thereby leveraging social influence to change behavior (World Bank 2015e). A good example is the Teachers First initiative in Egypt, which has developed a professional development program building on the UNESCO Competency Framework for Teachers. As of 2018, it had enrolled 10,000 teachers across eight governorates (Teachers First 2018). It trains school-based innovation teams to support teachers in adopting modern pedagogy in the classroom. Teachers First also aims to transform the teacher assessment system to capture changes in behavior over time, with the learner becoming more active in learning and assessment processes (Teachers First 2018).

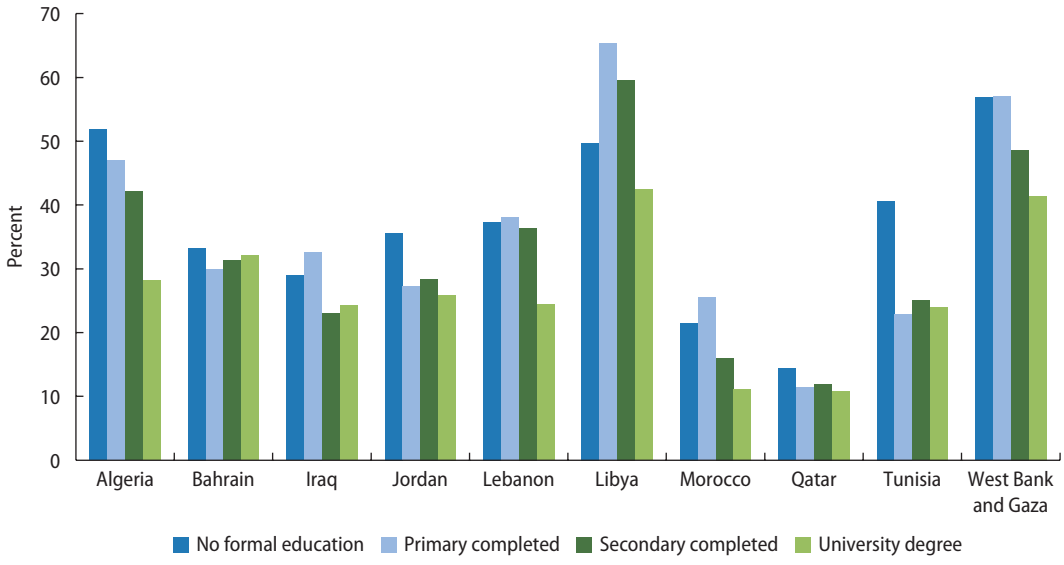
Promote tolerance through education

The prospects for peace and stability in MENA will be shaped by its citizens' ability to coexist with people of different nationalities, ethnicities, and religions. Education is one of the principal means of building a culture of peace (UNESCO 1999). It can help to promote tolerance by enhancing knowledge and reasoning skills and reducing prejudices (Coenders and Scheepers 2003).

In MENA, higher levels of education are generally associated with higher levels of tolerance for people with different backgrounds (see figure O.20). In Algeria, Iraq, Jordan, Lebanon, Morocco, Tunisia, and West Bank and Gaza, higher levels of

FIGURE O.20 Tolerance is associated with education, but intolerance is high even among the educated in MENA

Percentage of respondents who would not like to have "people of a different religion" as neighbors, by highest education level attained



Source: Inglehart et al. 2014.

education correspond to more tolerance for people of a different religion. However, the association between level of education and social values in MENA is weaker than in the rest of the world (Diwan 2016).

Even the most educated in MENA have levels of intolerance at or above the rates of other regions in the world. For example, 34 percent of MENA respondents to the 2014 World Values Survey said they disliked having neighbors who were immigrants or foreign workers (Inglehart et al. 2014). This rate of dislike is three times higher than that observed in high-income countries (12 percent). Furthermore, 32 percent of respondents in the region disliked having neighbors of a different religion. This rate is the highest across all regions and almost eight times higher than that of high-income countries.

Thus, although education may contribute to greater tolerance, its effect may largely depend on what is taught and how it is taught in the classroom, as well as political orientation, social interactions, historical experiences, and labor market dynamics. Modern curricula that promote noncognitive or "soft skills" (as well as cognitive skills) and instructional practices that promote inquiry, discussion, reasoning, and teamwork can promote greater tolerance. Conversely, traditional curricula that are heavy in outdated content and narrowly defined concepts and emphasize knowledge recall, control, and discipline can lead to closed minds. In Rwanda, education has been an important part of a holistic, systemic approach to bringing about changes in attitudes leading to more tolerance and less violence (see box O.14).

In view of the conflicts MENA has been facing for almost a decade, there is an important role for education in the promotion of peace and social stability. However, education cannot do it alone. Improving political and economic conditions is also critical for the peace and stability of the region. This effort requires multisystem alignment as well as a wider social and political commitment.

Box O.14 In Rwanda, education has played a role in building peace

Education can be a crucial entry point for addressing the drivers of conflict. In Rwanda, education was recognized as the "vehicle for positive social transformation to reduce the likelihood of returning to violence." Schools became the common ground where parents could meet, rebuild trust, and seek a common goal. To develop education policies that explicitly addressed social cohesion and to contribute to national reconciliation, curricula were modified to emphasize "a culture of peace" and promote positive national values, justice, tolerance, respect, solidarity, and democracy. Curricular reform and the removal of social barriers took patience and time because they required agreements on language, values, girls' access to education, and attention to children with special needs. To improve their impact, education leaders sought support from complementary health and social programs that enhanced the educational experience for children. In short, the implementation of these agreements required communal ownership, trust, and time to develop. Greater authority over implementation at the school and district levels was granted, accompanied by greater accountability and operational efficiency, more responsive and efficient management, and continued capacity building.

Source: World Bank 2013b.

A new education pact

Stakeholders' goals for education reflect the myriad roles that education can play in an economy and society. Many stakeholders have a shared sense of purpose around basic goals such as literacy; however, beyond these goals, groups have different views of the purpose of education. The dissonance across stakeholders' goals for education is a substantial obstacle. Education becomes a "battlefield" (Purpel and Shapiro 1995, 60) where the different stakeholders fight in pursuit of ideological hegemony.

In all countries, education is the subject of an ongoing national dialogue. In MENA, this national dialogue needs to be channeled toward a unified vision that takes into account the four tensions holding back education, the social norms that define them, and the local context. A shared vision also needs to take into account countries' development priorities, their economic opportunities, and their realities and resources so that the goals set are realistic and attainable.

To realize this unified vision, political will is critical. Moreover, the interests of a wide variety of stakeholders—including teachers, principals, inspectors, politicians, communities, employers, and students—need to be aligned through a powerful alliance. This effort would require strong leadership and shared accountability. It also would require bringing investments and resources in line with the vision's priorities. High-performing education systems—such as those of Japan, Korea, and Singapore—are champions of strong education pacts that underscore the role of a unified vision for education across stakeholders. That vision includes *consistent* and *coherent* reforms to achieve human capital–driven economic growth (Wong 2017).

National leaders must lead the change

Political will and leadership are critical to rallying MENA around a new pact for education. Political leadership can initiate shifts in behavioral norms to push for education reform (Acemoglu and Jackson 2015). The national leaders of Japan, Korea, and Singapore, in championing education reforms, made education a national priority with a vision and clear goals and cultivated a consensus among stakeholders (World Bank 2018e). Policies were built on the realization that the full potential of education can be achieved only through cross-sectoral policy alignment. The leaders succeeded in promoting a shared vision for education to which

parents can aspire for their children's future (World Bank 2018e) and a shared responsibility among all stakeholders for assuming their role in educational outcomes (Wong 2017).

MENA has produced many great leaders whose charisma and vision have led to remarkable progress. For example, Egyptian educator Taha Hussein, who became blind as a young child, went on to become one of the preeminent thinkers of his time, leaving his mark on an entire nation (Cachia 2014). Serving as minister of education in the early 1950s, he worked to massively expand public education and to abolish school fees. Considering education essential to human existence, Hussein famously said, "Education is like water and air" (Cook and El-Refaee 2017).

Reconcile interests in a unified vision for education

A new pact and shared vision require aligning political will and multiple interests in society. Perverse behavioral norms and ideological polarization can hold countries back from delivering public goods (World Bank 2016b). Moreover, human sociality, whereby people associate and behave as members of a group and establish norms and patterns of cooperation, can also block reforms (Khemani 2017; World Bank 2015e). Some groups impede reforms that they perceive would reduce their power or ability to extract benefits (Khemani 2017; Kingdon et al. 2014). One example might be the teachers who are benefiting from the industry of private tutoring. This group could try to obstruct any reforms in assessment systems that would jeopardize the additional income they receive for holding private classes for students preparing for national examinations. This could also be true of teachers' unions that do not want to see reforms that would require teachers to work additional hours or to change their practice significantly. Resistance to reform may be driven not only by self-interest but also by peer pressure to comply with the norms and expectations of a group such as a teachers' union (Khemani 2017; World Bank 2015e).

Experience has shown that reforms can succeed if there is strong political will to implement them. This means that politicians and interest groups would have to refrain from using education as a tool to support their political views. An important step toward aligning political will and stakeholders' interests in education reform would be to reduce the number of policy makers who have the power to veto policy reforms for political interests and bring them in line with other stakeholders through a narrative of shared values (Acosta and Haddad 2014)—see box O.15 for an example of a successful use of this approach in Peru.

To rally support for education reform in 2008, Australia's deputy prime minister developed clear outreach strategies that engaged the news media. She personally briefed the media on new proposals in advance, using stories about schools and students to humanize the narrative around reform. She also communicated with the business community through "boardroom lunches," highlighting the business case for reforms (Bruns and Schneider 2016). The minister of education of Ontario, Canada, regularly visited schools and school boards across the province when he was shadow minister, meeting with about 6,000 people in an effort to spend time with teachers, students, and parents to engage them in policy dialogue and establish trust (OECD 2011c).

Recently, the president of Egypt has also been using the media and conferences to build support for education reforms. He has been advocating and supporting major reforms overhauling the education system, shifting from the traditional rote learning, high-stakes examination system that focuses on credentials to a modern system that focuses on learning and skills. He held several youth and education conferences to rally public support for the reforms, reassuring parents and students about the benefits of these reforms for them individually and for society and the economy as a whole. He announced that 2019 would be the year of education (Egyptian Gazette 2018).

Box O.15 Peru has found success in aligning interests

Through political will and alignment of stakeholders' interests, Peru succeeded in reducing the rate of stunted growth among children under age 5 in only six years. This was achieved by reducing the number of policy makers with veto power. These "veto players" were brought in line with other stakeholders through a shared set of values. Stakeholders were unified under a common policy platform and advocacy coalition, the Children's Malnutrition Initiative. This coalition was established to convene both government and nongovernment stakeholders to consolidate a single objective of making children's malnutrition central to the government's fight against poverty. During the 2006 presidential campaign, all candidates pledged to reduce malnutrition by 5 percentage points for children under 5 years of age within 5 years (5×5×5). Once elected, the president of Peru renewed his public commitment and set a target reduction of 9 percentage points and secured support from the prime minister, the minister for women and social development, and regional governors. Between 2005 and 2011, Peru reduced stunting by 10 percentage points.

Source: Acosta and Haddad 2014.

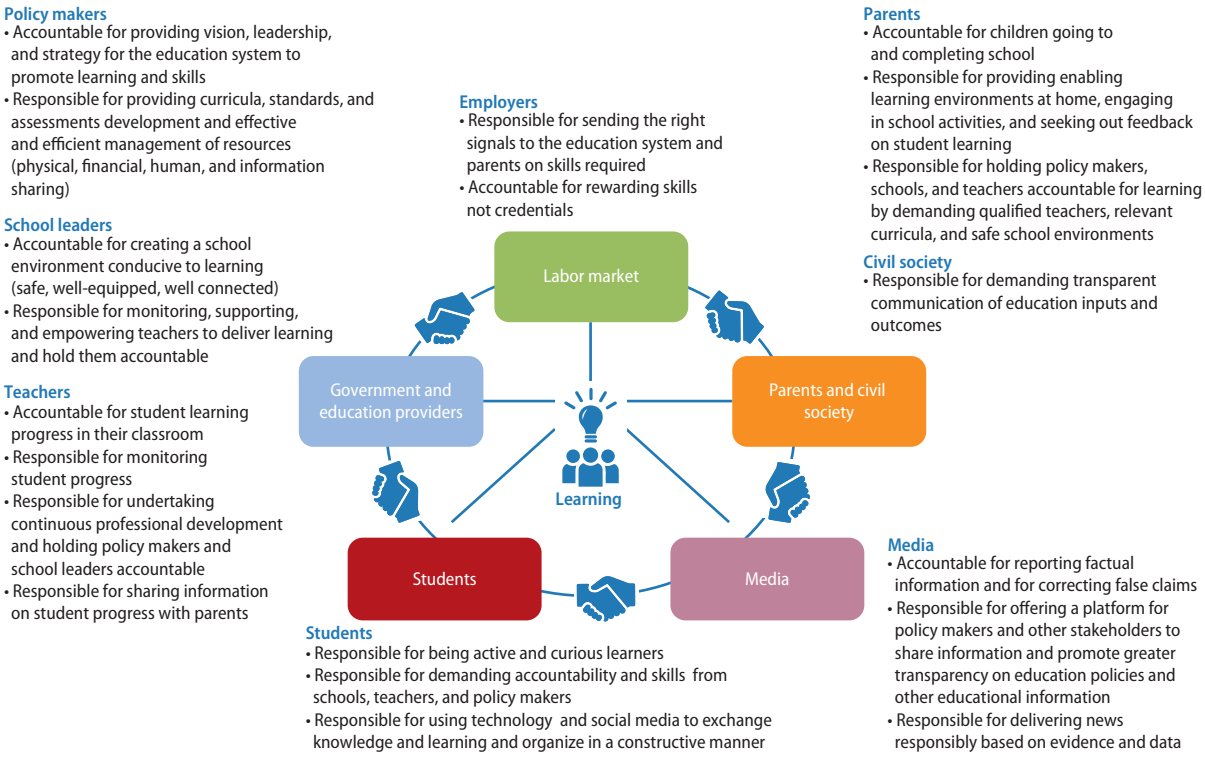
Share accountability to deliver results

Accountability is critical to improving learning. However, identifying who is accountable for learning outcomes is extremely difficult because different actors within and outside the education system interact to produce learning outcomes. Usually, educators, especially teachers, are the focus of accountability for student outcomes. Although teachers play a crucial role in student learning because they interact directly with students in the learning process, policy makers, school leaders, and parents, among others, also have an important role in shaping education outcomes. Therefore, accountability in education cannot be limited to any one individual or group (UNESCO 2017a; World Bank 2004).

In a new education pact for MENA, accountability needs to go beyond the education system. There would be multiple accountability mechanisms, whereby citizens hold governments accountable, policy makers hold schools accountable, and principals hold teachers accountable. However, if the system as a whole is not aligned, conflicts and distortions will arise between the stakeholders at various levels (Burns, Köster, and Fuster 2016). System alignment toward greater accountability means that all stakeholders work collectively within a common vision for education and share responsibility for learning. These stakeholders (policy makers, school leaders, teachers, parents, employers, and students) must first hold themselves accountable to ensure learning while demanding accountability from others. For MENA countries to reap the full benefits of education, responsibility and accountability have to be shared collectively (see figure O.21).

For accountability systems to be effective, the roles and responsibilities of the various stakeholders have to be clearly defined and understood. For example, a lack of understanding of the new roles for school administrators in Sweden resulted in varying approaches and structures, which made it difficult to evaluate and compare learning across municipalities (Burns, Köster, and Fuster 2016). Moreover, when accountability lines are not clear, blame could be shifted among service providers, and citizens would not be able to determine who is responsible (UNESCO 2017a). Without clearly defined roles and responsibilities, even well-designed accountability mechanisms can fail. On the one hand, parental monitoring in school can

FIGURE O.21 Learning is a collective responsibility, and everyone is accountable



Source: World Bank.

be counterproductive if parental involvement becomes too invasive and schools do not grant the teacher sufficient autonomy (World Bank 2008). On the other hand, if schools do not understand and recognize parents' role in the education system, they may be unresponsive to legitimate parental initiatives and suggestions.

At the level of the education provider, teachers are responsible for monitoring and assessing their students' progress and for giving parents regular feedback. Teachers also should pursue ongoing professional development. School leaders are responsible for creating a school environment conducive to learning and ensuring that teachers are delivering on learning by monitoring and empowering them. Policy makers have the overall responsibility for providing vision and strategy and developing, leading, and supporting the implementation of education policies, developing curricula and standards, introducing national information systems that effectively monitor learning, and allocating resources at the national and regional levels (human, physical, and financial).

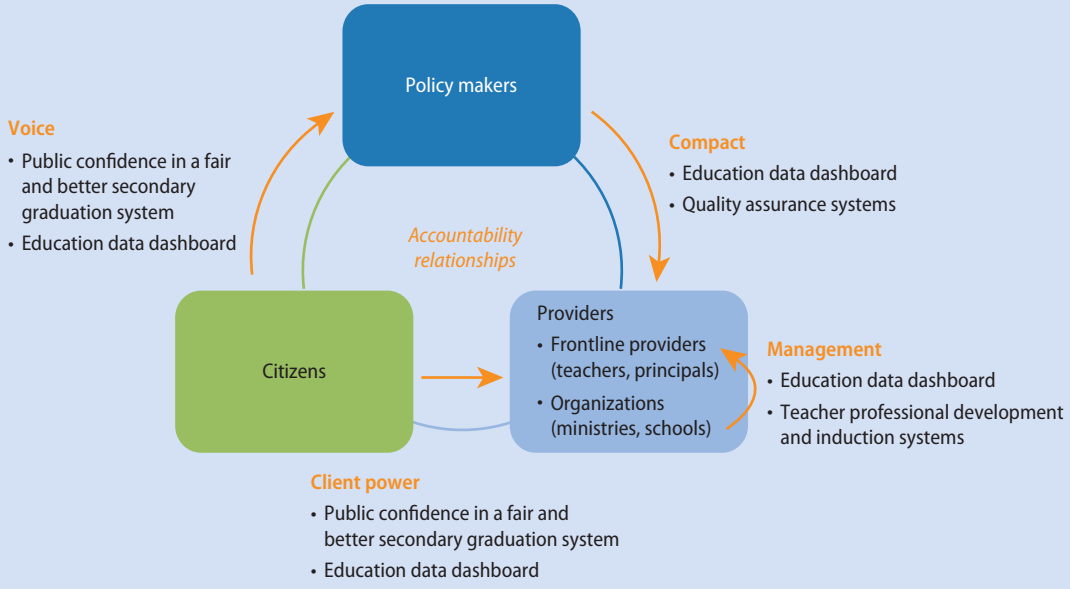
Parents are responsible for their children's education and for creating a supportive home environment. They are also responsible for engaging in school activities and monitoring their children's learning individually and collectively through parents' associations. Parents should also hold the education system (policy makers, schools, and teachers) accountable for their children's learning and demand qualified teachers, relevant curricula, and safe learning environments. Employers also have a responsibility in the learning process. They need to signal to parents, students, and the education system what skills are needed in the

Box O.16 Egypt's education sector uses technology to ensure accountability

The Arab Republic of Egypt has embarked on ambitious accountability reforms in the education sector using modern technology. It is enhancing accountability through the following channels:

- Increasing the amount of data and information available to policy makers and the public, thereby improving accountability for resource allocation and service delivery
- Enhancing transparency around student assessments and citizens' trust of assessment results
- Strengthening accountability across key stakeholders, giving the community and parents a greater voice in policy making
- Creating a better compact between the Ministry of Education and Technical Education and schools by improving district-level management.

FIGURE BO.16.1 Technology can shape accountability relationships



Source: World Bank 2018d.

labor market. Finally, students are also responsible for their learning; they must not be passive recipients. With their growing access to social media, students have access to massive amounts of learning resources. In many instances, they may have more access to information than their parents on global skills and knowledge and can demand these skills from the education system. Students can also organize themselves to support their schools and hold service providers and educators to account.

The media play an important role in holding stakeholders accountable and in explaining complex issues. Social media are a growing major source of information in the world and in MENA countries, especially for youths, and they can serve as a platform for policy makers wishing to share information and promote greater transparency on education policy reforms. Social media also provide citizens with a mechanism to hold policy makers and educators accountable. And yet social media can also be exploited by interest

groups to block important reforms and spread misinformation. In MENA countries such as Egypt, Jordan, and Kuwait, opponents of education reforms have launched strong social media campaigns against those reforms. Open channels for communication and debate are important to creating a pact around learning. Policy makers should engage with stakeholders through various channels to address concerns, correct information using evidence, and rally collective support for education reforms.

Beyond social media, technology can also be leveraged to establish accountability systems. Several countries are implementing education dashboards to facilitate open data and a move toward evidence-based policy making. The government of Egypt has effectively leveraged modern technology to promote accountability (see box O.16).

For its part, civil society is responsible for demanding transparent communication of education inputs and outcomes.

Prioritize investments to promote learning and skills

A new pact for education must include agreement on how and where resources are used. For decades, MENA countries have spent substantial shares of their income on education to meet the demand of growing populations over the last half-century. In fact, most MENA countries allocate far more to education than many wealthy countries. For example, Tunisia spends 20.6 percent of its national budget on education, which is nearly twice the OECD country average of 11.3 percent. Although the share of spending on education in MENA is relatively high, it has been declining since its peak at the turn of the century, from a median level of 20.6 percent in 2000 (and 5.9 percent of GDP) to 13 percent in 2016 (4 percent of GDP).[14] Spending adequate amounts on education is necessary but not sufficient for success. How resources are used is just as, if not more, important.

Spending needs to align with learning. MENA countries spend large shares of their education budgets on staff salaries—often more than 90 percent of all recurrent education spending. In doing so, they crowd out investment in other important inputs that contribute to learning, such as teaching and learning materials, professional development, and school rehabilitation and maintenance.

Countries everywhere are facing trade-offs when deciding whether to spend scarce resources on hiring additional teachers or financing other educational inputs. Investing in the professional development, working conditions, and salaries of current and future teachers often proves to be more effective for increasing student learning than employing more teachers. The same is true for greater investment in technology or the use of teaching assistants in the classroom (OECD 2017b). Investments in hiring additional teachers to reduce class sizes may have an impact on learning, but teachers should be targeted to areas in which class sizes are particularly large and act as a constraint on learning. A synthesis of more than 800 meta-analyses related to student achievement concluded that the value for money in raising performance is better achieved through interventions other than reducing class size (Hattie 2009). This conclusion is supported by research that finds that increasing teacher effectiveness has a greater value for money than reducing class sizes and suggests assigning the most effective teachers to the largest classes to maximize the potential benefit (Hanushek 2011; Rivkin, Hanushek, and Kain 2005).

Sufficient investment in early childhood education and in the early grades of schooling is also needed to ensure that students build foundational skills that enable them to learn effectively in the later stages of education. However, ECE has been the level that has received the least investment in MENA countries, resulting in enrollment rates that are closer to those in Sub-Saharan Africa and low-income countries, as indicated by the little international data available. No MENA country spends more than 0.4 percent of its GDP on ECE from the public budget. Most spend far less (well below 0.2 percent). By comparison, the average OECD country

invests 0.7–0.8 percent of its GDP on ECE, and some countries—such as Sweden—invest as much as 1.3 percent of GDP. Because the region's young and growing populations consistently exhibit low levels of foundational skills, public investment in high-quality early learning programs for all children should be a policy priority.

Even though MENA countries have been spending large shares of their national budgets on education, it is important that spending on education be sustained and in some countries increased. Equally important, the spending must target learning. This requires concentrating on outcomes and not just inputs and outputs. Results-based or performance-based budgeting (PBB) seeks to introduce explicit measures of performance or results directly into the budgeting process with specific indicators that can be used to measure the effectiveness of budget implementation. Ministries of education that receive budgets under a results-based budgeting system would receive allocations to achieve certain sectoral outputs (for example, increasing preprimary enrollment) rather than to finance certain amounts of inputs (such as salaries or capital costs).

In Jordan, Morocco, and Tunisia, the ministries of education have been early adopters of those countries' performance-based budgeting systems (Beschel and Ahern 2012). In Western Europe and other member countries of the OECD, PBB approaches have been employed for some time. The Netherlands, for example, introduced proto-PBB approaches as far back as the 1970s and moved its entire public sector to program and performance budgeting in 1999. Such a move shifts the focus of ministries so that their activities coalesce around the achievement of their strategic sectoral policy agendas.

Unleashing the potential of education is attainable

MENA countries can enjoy the full benefits of education only when a push for learning is coupled with a pull for skills and a social pact for education. Specifically, MENA will realize the potential of education when (1) it gives priority to learning; (2) it focuses on the early years of schooling and opportunities are equally distributed, including for those affected by conflict; (3) curricula are modernized and educators are empowered; (4) employers demand skills and communicate them; (5) all stakeholders agree on a common vision for education and jointly take responsibility for its outcomes and are held accountable for their roles, which are clearly defined; and (6) resources are aligned with priorities. These changes will require a joint effort to address the four tensions holding education back in the MENA countries.

Improving education is not the responsibility of educators alone; it also involves all members of society—politicians, businesspeople, and community and religious leaders, as well as parents, teachers, school principals, and students themselves. By far the most difficult task is dealing with varying and often opposing views, strongly held convictions, and divergent interests. But it is not impossible. Countries with high-performing education systems have succeeded in rallying support around a common vision and shared responsibility.

The role of technology as a demand shaper in the future of work is certain, but its role as a delivery catalyst holds great potential that the region has not yet tapped. Indeed, technology is changing how today's students are prepared to enter the future workforce—that is, it is influencing not only the ends of education but also the means. Technology presents a unique opportunity to help to deliver high-quality education in a more efficient and effective manner. If leveraged smartly, technology can offer an opportunity for MENA countries to advance their education systems quickly and to support learning.

MENA has the history, culture, and resources to leap into a future founded on a learned society and a knowledge economy. The region has great expectations and aspirations. Unleashing the potential of education is attainable, but it will take a new pact to elevate education not only as a national priority

but also as a national emergency. The question is: Are its leaders ready and do they have the will and grit to see through the implementation of policy reforms?

Notes

1. The World Bank defines MENA as including these countries and economies: Algeria, Bahrain, Djibouti, Arab Republic of Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia, the United Arab Emirates, West Bank and Gaza, and Republic of Yemen. This report excludes Malta from the analysis as it has little in common with the rest of the region.
2. The World Bank's Facebook poll (in both Arabic and English) asked residents of MENA about the state of education in their country. The question received 42,235 responses.
3. World Bank, Education Statistics (EdStats) database. Based on authors' calculations using data for 2007 (or closest) and 2016 (or latest).
4. World Bank, World Development Indicators database.
5. The definition of violent child discipline as used in the UNICEF Multiple Indicator Cluster Survey (MICS) is based on discipline by anyone in the household within the last month, and includes psychological aggression (shouted, yelled, or screamed at the child; called the child dumb, lazy, or another name like that); physical punishment (shook the child; spanked, hit, or slapped the child on the bottom with a bare hand; hit the child on the bottom or elsewhere on the body with something like a belt, hairbrush, stick, or other hard object; hit or slapped the child on the hand, arm, or leg); and severe physical punishment (hit or slapped the child on the face, head, or ears; beat the child with an implement—hit over and over as hard as one could).
6. In fact, the level of autonomy may have decreased; the overall score declined from 3.1 to 2.9 on a 5-point scale, with 5 representing the highest level of autonomy. A factor contributing to the lower overall autonomy score, however, may be that the sample of universities participating in the 2012 and 2016 assessments did not remain the same (more public institutions from centralized tertiary education systems took part in the survey), making it difficult to assess trends over time.
7. Seven economies use *tarbiya* in the official name of their ministry of education (Algeria, Iraq, Kuwait, Lebanon, Syria, Tunisia, West Bank and Gaza); three use *taaleem* (Libya, Qatar, and Saudi Arabia); and seven use both *tarbiya* and *taaleem* (Bahrain, Egypt, Jordan, Morocco, Oman, the United Arab Emirates, and Republic of Yemen).
8. Malta is the exception; it is classified as part of the Middle East and North Africa in the World Bank's regional classifications.
9. The information in this paragraph is extracted from TIMSS 2015 Curriculum Questionnaire Exhibits, http://timssandpirls.bc.edu/timss2015/encyclopedia/curriculum-questionnaire-exhibits/main-preparation-routes-and-current-requirements-for-principals/.
10. Inequality of opportunity exists where unequal outcomes are attributable to factors beyond an individual's control.
11. Estimates of global EdTech revenues vary considerably, depending on the source of this information.
12. The analysis also found that computers have a greater impact in countries in which ICT penetration is low. Providing a teacher with a computer in the North African countries that participate in PISA (Algeria and Tunisia) increased PISA scores by 24.5 points. Doing the same in the two GCC countries (Qatar and the United Arab Emirates), where classroom technology is more common, added just 1.1 PISA point.
13. These tenures for ministers of education were compiled from a variety of sources, including http://www.mohe.gov.jo/en/pages/FormerMinisters.aspx; http://www.culturaldiplomacy.org/academy/index.php?Minister-Dr-Hassan-B-Diab; https://live.worldbank.org/experts/elias-bou-saab; https://live.worldbank.org/experts/marwan-hamadeh; https://en.wikipedia.org/wiki/List_of_Ministers_of_Education_of_Egypt; https://dailynewsegypt.com/2015/09/19/tough-job-ahead-for-new-education-minister-el-sherbiny/; and http://www.dailynewsegypt.com/2017/02/14/parliament-approves-new-cabinet-reshuffle-nine-ministries/.
14. World Bank, Education Statistics (EdStats) database. MENA's regional median is computed as the median of all national data points available in a given year using the EdStats database.

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Education, which had been at the heart of the Middle East and North Africa region's (MENA) history and civilizations for centuries, has a large untapped potential to contribute to human capital, well-being, and wealth. The region invested heavily in education for decades but has not been able to reap the benefits of its investments. Despite a series of reforms, MENA has remained stuck in a low-learning, low-skills level.

Expectations and Aspirations identifies four key sets of tensions that are holding back education in the region: credentials and skills, discipline and inquiry, control and autonomy, and tradition and modernity. These tensions are shaped by society and reflected in schools and classrooms. If not addressed, MENA will continue to operate below its potential. This report outlines a new framework with a three-pronged approach that can help address these tensions and unleash the potential of education in MENA:

- A concerted *push* for learning that starts early for all children regardless of background, with qualified and motivated educators, and that leverages technology, uses innovative approaches, and monitors learning.
- A stronger *pull* for skills by all stakeholders in the labor market and society that involves coordinated multi-system reforms within and beyond the education system.
- A new *pact* for education at the national level with a unified vision, shared responsibilities and accountabilities. Education is everyone's business and not just the responsibility of the education system.

The push, pull, pact framework offers an opportunity for MENA to charge forward and reclaim its heritage of a learned region and meet the expectations and aspirations of its people. The current situation in MENA requires a renewed focus on education, not just as a national priority for economic growth and social development but as a national emergency for stability, peace, and prosperity.

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