

New Challenges Facing the Education Sector in MENA

So far, we have argued that the impact on development of the considerable education progress recorded in the region has been less than expected in terms of economic growth, the promotion of equality, and reduction of poverty. How much of this outcome is the consequence of particular characteristics of the region's education systems and how much is due to weak linkages between education and labor markets is difficult to discern. We nevertheless conclude that the continuing gap between education and development outcomes may lead policy makers to consider *alternative paths of educational development* in the future.

Furthermore, the conditions under which education systems contribute to economic and social development have changed and this also argues for considering alternative paths of education development. The "road not traveled for education reform" in the MENA region also refers to the fact that education systems must now travel over new and relatively unexplored terrain. Education systems have a tendency to spawn a new set of challenges for every problem resolved. Once everyone is in school, we must ensure that they do not drop out. Once they remain seated, we must make sure that they learn something. Once they appear to be ready to learn, we must make sure that the material is useful for their future and ours. Thus, some aspects of the new terrain that education systems must cross have been shaped by the education system itself.

In this context, MENA countries have succeeded in providing most eligible children with educational opportunities, thus narrowing gender, rural, and socioeconomic gaps in access to schooling. This has led to strains resulting from the maintenance costs of the established education apparatus; new demands for instruction at post-compulsory levels of education; and the consequent costs of ongoing inefficiencies: dropouts, low graduate employment, and ambivalent learning outcomes. Essentially, the question facing education authorities in many MENA countries is: What do we do now that we have almost reached education for all?

Whatever policy makers decide in answering this question, they need to take into account several new challenges. First and foremost are *globalization* and the increasing importance of *knowledge* in the development process. Since education is the main source of knowledge creation, the task is clear: the education systems must be changed to deliver the new skills and expertise necessary to excel in a more competitive environment.

Second, the clientele to be served by the education system has also changed. On the one hand, the number of eligible students seeking post-compulsory education is expected to increase considerably over the next decades, leading to added pressure on the education system to offer diversified educational opportunities. On the other hand, for reasons associated with globalization and the knowledge economy, a greater swathe of the population will need to obtain fundamental as well as specific skills: the education systems will need to become more effective in transmitting skills and competencies to all.

Finally, facing these new challenges will be costly. Thus, MENA countries will have to consider not only how education will be delivered but also how it will be paid for if they are to succeed. These three challenges are discussed below.

Globalization, Education, and the Knowledge Economy

Globalization poses challenges for the development of education systems in the MENA region. This section examines how globalization has changed the role of human capital formation in development. It explores the international trends in education that have developed as a consequence, while examining the degree to which education systems in MENA countries have adopted these trends.

Globalization and the Knowledge Economy

Whether framed as the cause of or the panacea for today's social, political, and economic ills, *globalization* is a phenomenon that changes the fundamentals of any development strategy. The authorities may avoid the phenomenon or fully embrace it—and both tacks have their reasonable adherents—but they cannot ignore its impact on policy making in every sector of the economy. Education is no exception.

One of the most important consequences of this overall trend is that *knowledge* (including education, skills, information, and know-how) and its renewal and application have become critical factors for sustaining competitiveness and economic growth. For many developing countries, an abundant supply of low-wage, unskilled labor used to be a route to rapid

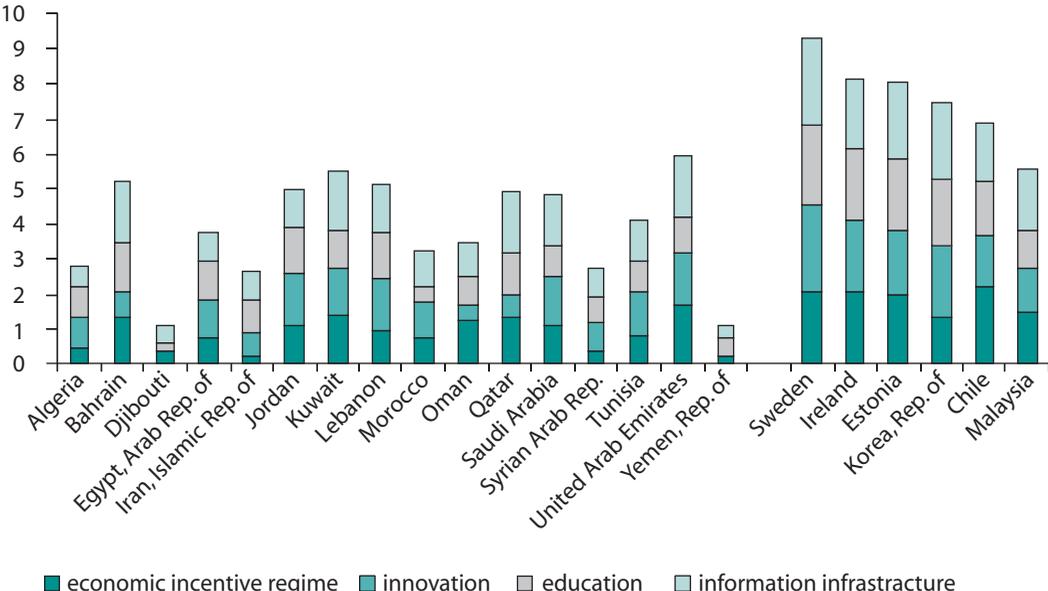
growth and national prosperity, but this is no longer so. In today’s world, characterized by intense global competition and rapid technological change, the key to prosperity is a well-educated, technically skilled workforce producing high-value-added, knowledge-intensive goods and services; in addition, they must be employed in enterprises that have the managerial capacity to find, adapt, and adopt modern, up-to-date technology and sell sophisticated goods and services in local and global markets.

To measure the extent to which economies possess this kind of knowledge, the World Bank has developed a Knowledge Economy Index (KEI) using four indicators. The indicators attempt to capture whether: (i) an economic and institutional framework that provides incentives for the efficient creation, dissemination, and use of knowledge to promote growth and increase welfare is in place; (ii) an educated and skilled population that can create and use knowledge has been established; (iii) an innovation network composed of firms, research centers, universities, consultants, and other organizations that can tap into the growing stock of global knowledge, adapt it to local needs, and transform it into products valued by markets (good and market effects) has developed; and (iv) a dynamic information infrastructure that can facilitate the effective communication, dissemination, and processing of information has been put in place.¹

Figure 3.1 presents the KEI “scores” of some MENA and non-MENA countries. It shows that MENA countries mostly fall below the

FIGURE 3.1

Knowledge Economy Index with the Breakdown of Index of Four Pillars



Source: World Bank “Knowledge for Development” (accessed in May 2006). http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBI_PROGRAMS/KFDLP/0,,menuPK:461238~pagePK:64156143~piPK:64154155~theSitePK:461198,00.html.

middle range on the index. They also fall below the scores obtained by OECD countries, most of the transition economies, and some East Asian countries. The contribution of education and human resources to the overall index is most significant in Bahrain, Jordan, Kuwait, and Lebanon. It is most modest in Djibouti, Morocco, and the Syrian Arab Republic. Thus, while the entire region needs to improve all components of the knowledge economy index, the latter group of countries needs to pay particular attention to the development of their education systems.

Education and the Knowledge Economy

For a country or a region to be competitive, the education system must be capable of providing two types of services. First, it must be able to produce the broadest possible human capital base. If knowledge is increasingly recognized as key to competitiveness, it follows that, the more people have a fundamental level of instruction, the better.² Second, if a country or region's "knowledge" endowment is to be ever elastic and growing, an individual's knowledge base must also continuously change and expand.

The notion of *lifelong learning* has the potential of meeting these objectives, at least from a technical point of view. Lifelong learning involves: (i) a formal education that provides all individuals with opportunities to acquire a fundamental level of instruction, however defined within national contexts; (ii) multiple opportunities for individuals to continually renew their knowledge, skills, and competencies; and (iii) an institutional set-up to quickly and smoothly adapt and respond to the changing educational demands of individuals, firms, local and regional political actors, and the international environment (World Bank 2003). Below, we discuss each of these characteristics from the perspective of international experience and the education systems of MENA.

A fundamental level of instruction for all. Levy and Murnane (2004) have identified a range of skill levels, each requiring a more extensive use of cognitive skills and decision-making capacity, which are usually needed in any productive process:

1. **Expert thinking:** solving problems for which there are no rule-based solutions, e.g., diagnosing the illness of a patient
2. **Complex communication:** interacting with humans to acquire information, to explain it, or to persuade others of its implications for action

3. **Routine cognitive tasks:** mental tasks that are well described by logical rules, e.g. maintaining expense reports
4. **Routine manual tasks:** physical tasks that can be well described using rules, e.g. counting and packaging pills
5. **Nonroutine manual tasks:** physical tasks that cannot be well described as following a set of “If-Then-Do rules”—instead, they require optical recognition and fine muscle control.

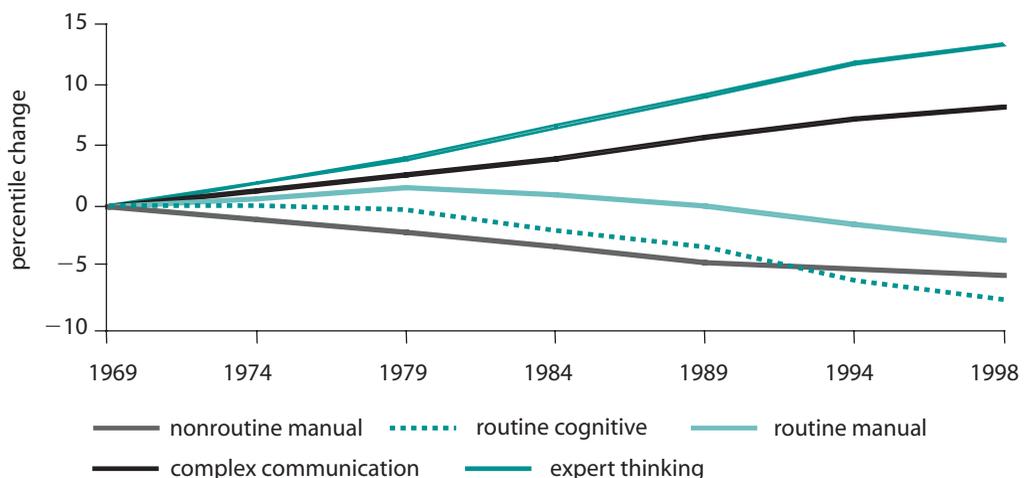
According to Autor, Levy, and Murnane (2003), the need for “expert thinking” and “complex communication” has grown, while the need to conduct more routine tasks has declined in most OECD countries (as illustrated in figure 3.2 below).

There are several implications of this trend. First, the configuration of subjects taught in school may need to change: certain academic areas previously reserved for more elite education opportunities must be made available to a wider range of students. Second, the kinds of competencies needed have changed, with a growing emphasis on *transversal skills* that enable citizens to better adapt to an evolving labor market, society, and polity.

With respect to the *range of subjects*, literacy and numeracy remain the foundation of all education systems: in a knowledge economy, the ability to communicate and analyze requires a solid mastery of these basic skills. However, the fundamental subjects now also include the teaching of science and foreign languages.

FIGURE 3.2

Demand for Job Skills is Changing Rapidly



Source: Autor, Levy, and Murnane 2003.

Science and technology have been promoted in many school systems because scientists, engineers, and technicians are considered the principal cadre of the knowledge economy. In addition, science and technology are thought to help teach complex problem-solving skills and practical knowledge that are essential to functioning in the labor market.

Similarly, there is growing demand for acquiring more than one foreign language in a more globalized world. To meet this demand, many countries and schools are adopting school curricula with teaching of at least two foreign languages (World Bank 2005). The acquisition of another language clearly expands the opportunity for an individual to work “borderless.” It is also a useful marketing and practical tool to increase one’s potential in the labor market.

In most MENA countries, while foreign languages are increasingly being taught, the composition of post-compulsory education programs continues to favor humanities and arts over scientific fields of study. As noted in chapter 1, on average, about two-thirds of university students in MENA countries major in these fields. This is higher than the averages of East Asia and Latin America. In Djibouti, Morocco, Oman, Saudi Arabia, and West Bank and Gaza, students in education, humanities, and social sciences are 71 percent, 75 percent, 75 percent, 76 percent, and 76 percent of university students, respectively.

As for *transversal skills*, pedagogical reforms implemented worldwide have emphasized two main ideas: (i) the introduction of inquiry-based learning and (ii) the adaptation of teaching to the learning capacity of individual students. Workers are expected to act more like professionals, taking responsibility for making decisions without turning to hierarchical structures. This in turn requires new sets of competencies.

In the late 1990s, several MENA countries adopted pedagogical reforms with many of the characteristics discussed above (e.g., student-centered learning, competency-based curricula, and focus on critical thinking). Despite these efforts, there is little evidence of a significant shift away from a traditional model of pedagogy. The main activities in the classrooms in MENA continue to be copying from the blackboard, writing, and listening to the teachers (El-Haichour 2005). Group work, creative thinking, and proactive learning are rare. Frontal teaching—with a teacher addressing the whole class—is still a dominant feature, even in countries that have introduced child-centered pedagogy. In the Arab Republic of Egypt, for example, teacher behavior in first- and fifth-grade classrooms was found to be as follows:

“Findings on use of interactive approaches to teaching are still mixed. Text books are the primary and only instructional material in the class for about 80 percent of all teachers. While teachers use

lessons plans and know the content, they do not use teaching materials when they are available. Observers reported that 98 percent of the students were paying attention to teachers and 90 percent seemed interested, but interactive learning was limited. While all Egyptian schools have a multimedia room, 56 percent of the classes do not use it.” (World Bank 2002)

The individual needs of the students are not commonly addressed in the classroom. Rather, teachers teach to the whole class, and there is little consideration of individual differences in the teaching–learning process. More specifically, current pedagogical practices lack support for weak students, although Tunisia, Jordan, and the Islamic Republic of Iran appear to be making additional investments in this area.

Finally, the few countries that have attempted to introduce higher-order cognitive skills as a pedagogical objective have not been successful in changing teacher practice in this regard. In 1995, a rare research study having a focus on education quality in the MENA region (Valverde, Schmidt, and Bianchi 1995) showed that students were instructed in how to learn and retain “answers to fairly fixed questions in problem situations with little or no meaningful context,” and that the education system mainly rewarded those who were skilled at being passive knowledge recipients. Although relatively out of date, many of the findings of this research appear to still hold: higher-order cognitive skills such as flexibility, problem-solving, and judgment remain inadequately rewarded in schools.

Thus, many MENA countries have introduced the kind of pedagogical innovations that have shown promise in other parts of the world; however, they are all in an early implementation phase. The overall philosophy and emphasis of these reforms are similar to those found elsewhere, but they have not yet found their way into the classroom.

Continuous learning for all and multiple paths to make this occur. Traditional education systems are usually portrayed as a pyramid, with the base as the compulsory education system. Subsequently, a subset of students is selected to continue their education at each higher level of instruction. To address the growing demand for education for the purposes of social mobility, individual levels of education have usually become stratified, with different sorts of secondary or higher education made available to students of different ability. Those who “fall off” the stairs of the pyramid are sometimes reclaimed by vocational education programs and other nonformal education endeavors. Usually, those who finish one level of instruction without meeting the requirements of the next are expected to join the workforce. Formal education is essentially a one-shot opportunity.

With the need for the continual renewal of skills and expertise, several elements of this traditional model are being modified to adapt to the demands of a knowledge economy. Although this has implications for compulsory education, with a new emphasis on educational success for all, the adoption of a lifelong learning paradigm is essentially a call for *the transformation of post-compulsory education*. Secondary, higher, and vocational education are increasingly expected to respond to the exigencies of competitiveness.

To achieve these objectives, post-compulsory education is developing the following characteristics: (i) a diversification of course offerings and more individualized learning; (ii) a greater possibility for transfer between and within levels of instruction to shape the education path to the specific interests and capabilities of the student; (iii) opportunities for continued learning for all by providing multiple entry points; (iv) a pattern of encouraging alternation between workplace and study; and (v) links with representatives of productive sectors to help formulate research agendas, academic programs, and individual course offerings.³

In many MENA countries, post-compulsory education is growing rapidly. However, this growth has not been accompanied by the flexibility depicted above. Once a decision is made regarding which field of study a student will pursue, there is no turning back. Typically, in MENA, decisions concerning one's path of instruction are decided at the lower secondary level and thus at a relatively young age. This translates into rigidities throughout the system: students at the upper secondary level can rarely change tracks or disciplinary emphasis. At the university level, reorientation during the academic year is not granted in any country in the region. Furthermore, there is a strong difference in the courses of studies offered at four-year universities and other tertiary education institutions. In fact, there are few opportunities for students to transfer from one four-year institution to another. Finally, it is rare for vocational education students to pursue studies at universities. Most countries have some tertiary education options in technical and vocational fields, although these are restricted to a narrow range of students (see box 3.1 for some examples).

In the above context, *secondary education* has become the gateway to lifelong learning, because it defines the interface between compulsory and noncompulsory education. Traditionally, the purpose of secondary education has been to select students for higher education. This has shifted to the preparation of students for a wide array of post-secondary learning opportunities, as well as for the workplace. Consequently, secondary education is no longer an institution of selection, but one responsible for preparing all youth for adult life—and, as discussed above, successful adulthood in a knowledge economy requires skills

BOX 3.1**Flexibility of Vocational Education and Training (VET) Systems in Selected MENA Countries**

Jordan—Jordan’s education system is one of the region’s most flexible, providing pathways between academic and vocational streams. Only those attending applied secondary schools (6 percent of students) are not provided the option of continuing education at the tertiary level.

Syria—Regulations limit the flexibility of the VET system. There are no options for reentering the formal school system or for lifelong learning. One recent study referred to vocational education in Syria as a “second-best type of education with only tenuous links to more promising career streams.” Fifty percent of students are tracked into vocational education following the final exams in primary school.

West Bank and Gaza—Graduates of vocational education have the option of pursuing tertiary education at community colleges and between 15–20 percent do so. Those who have participated in vocational training at the secondary level, however, are denied this option due to the lack of theoretical content in the curriculum.

Yemen—The education system of Yemen does not offer higher education at either community colleges or universities to vocational secondary students. Instead, vocational students either enter the labor market directly—the only option for those in vocational training—or continue with post-secondary technical education for up to three years more.

Source: Luinstra 2006.

and competencies that are markedly different from those of the past. Below are some examples of current international trends in secondary education:

- More emphasis on procedural knowledge (know-how) than declarative knowledge (“knowing about specific topics”)
- Expansion of course offerings (wide range of interdisciplinary studies) to maximize student potential and limit early specialization
- For instructors, more emphasis on teaching “learning knowledge” rather than subject-related knowledge (about classroom management, pedagogy, and evaluation and the school as a learning and knowledge-producing institution)
- Entrance examinations to secondary education are disappearing or are being used for counseling and orientation, rather than selection.

No country in the MENA region is currently engaged in an overall reform of this level of instruction along the lines discussed above. Although enrollments are expanding quickly, and most countries are faced with high dropout rates at this level of instruction, there has been no systematic attempt to develop a new approach to providing secondary education. Notions such as blurring the boundaries between vocational and general studies, greater emphasis on pedagogy over subject expertise on the part of teachers, the development of interdisciplinary course offerings, and continuous orientation of secondary school students have not yet been introduced systematically in MENA countries. Rather, all MENA countries continue to introduce initiatives to orient secondary students into vocational programs and rely on examinations to control access to and successful exit from secondary education.

Internationally, *tertiary (higher) education* is no longer confined to the production of elites, but has become the hub of the knowledge economy. As indicated above, the creation and adaptation of knowledge to local productive processes is the key to competitiveness, and tertiary education is the principal facilitator of this process. As a consequence, the following trends in tertiary education are observed:

- Institutions of tertiary education provide opportunities to gain additional skills and knowledge throughout one's professional life
- Development of different delivery models (community colleges, open universities, e-learning, etc.) to accommodate a more diverse clientele
- Growth in demand for degrees and credentials with international recognition
- Quality-assurance mechanisms to evaluate and accredit courses, programs, and degrees offered by various educational providers (both public and private)
- Emergence of "transdisciplinarity," organizing research and training around the search for solutions to complex problems rather than traditional academic disciplines
- Greater autonomy, with more freedom for tertiary education institutions to diversify revenues
- Increased partnership between universities and regional economic actors for the purpose of creating and adapting knowledge to increase competitiveness.

Against this background, there are some positive developments in the MENA region with regard to tertiary education. Some countries are granting universities greater autonomy, allowing them to reorganize

their curricula, introduce new types of programs for different populations (e.g., skills upgrading, alternative paths of study), and sometimes introduce fees for specific training opportunities. However, the degree of implementation of these changes varies widely among countries, with Jordan and Iran having gone the furthest.

In addition, a number of countries have introduced quality-assurance mechanisms, especially in light of the increasing number of tertiary academic institutions.⁴ Six MENA countries have so far initiated a national system for quality assurance, all within the past six years. While the quality-assurance mechanisms in certain countries (Egypt, Oman, Saudi Arabia, and West Banka and Gaza) evaluate and accredit both private and public institutions, other quality-assurance systems (Jordan, Kuwait, and United Arab Emirates) target only private institutions.⁵ Due to the infancy of these systems, the effectiveness of the quality-assurance mechanisms in the MENA region has yet to be assessed.

Technical and Vocational Education and Training (TVET) has traditionally been the “poor cousin” of the education family. In a knowledge-based economy, however, TVET’s role is quickly changing. Rather than the dead-end repository of school failure, TVET has become the revolving door for skill renewal and requalification. The key components for a successful TVET program include:

- An open and flexible structure, where access does not prevent students from continuing their education, even at formal levels
- Integration of technical/vocational and general education (introducing more academic subjects in TVET and more practical subjects in general education)
- Effective guidance for students and workers
- Programs for entrepreneurship and self-employment
- Quality assurance through a well-established national qualifications framework, assessment system, and accessibility of data
- Involvement of economic actors in the planning and evaluation process

In the MENA region, pre-service VET programs have been relatively unsuccessful in linking training with employment. Furthermore, as pre-service VET is usually the reserve of those who have not done well in compulsory education, many students do not have a firm grasp of the basic skills necessary to learn more challenging technical competencies. Also, pre-service VET largely fails to put students on a clear pathway to further education and training options.

Essentially, then, the components of post-compulsory education in MENA are only linked to each other in a linear fashion, and thus the objectives and content of each are dictated by the needs of subsequent levels of instruction, rather than the needs of students, the economy, and society.

Lifelong learning institutions. Lifelong learning must encompass all aspects of the education system so that expanding human capital needs can be addressed through innovation, adjustments, flexibility, and quick reorganization. This view stands in stark contrast with a more traditional notion of education systems that compartmentalize the different components of education: formal versus nonformal, compulsory versus non-compulsory, elite versus mass, and so forth.

To create and maintain this alternative vision of the relationship among education systems, society, and the economy requires a concerted effort to blur the boundaries between education institutions and to harness the education system to the ever-changing and complex demands of a host of stakeholders (including research institutions, employers, local authorities, and international economic actors). As a consequence, nations need to develop an institutional setup to develop the relationships necessary for the production of human capital in a knowledge economy. Some characteristics of lifelong learning that facilitate partnerships beyond the boundaries of the education system include:

- The establishment of a national framework for lifelong learning with institutional vehicles that link the education sector to economic and social actors
- The development and adaptation of national standards and other quality-assurance mechanisms (including certification and accreditation) in collaboration with economic, social, and political stakeholders outside the education system
- Improvement in articulation between different types of learning and recognition of informal learning
- Deepening linkages between education institutions and the labor market, with better signaling, partnerships, and collaborative teaching and learning endeavors with local, national, and international employers
- Development of a legal regulatory framework that creates a level playing field between public and private providers and provides information about institutional performance
- Diversification of the sources of finance to support a more complex and comprehensive lifelong learning education system.

Few MENA countries have developed lifelong learning. Education systems in most MENA countries only allow limited opportunities for individuals to obtain more skills and acquire more knowledge after completing their formal degree or beginning to work. Lifelong learning is only articulated among national objectives in a handful of countries. Only 5 out of 16 UNESCO National Reports for MENA countries mention the importance of lifelong learning in their national objectives and strategies (UNESCO 2004). Even then, the term “lifelong learning” is defined within the framework of formal education, and is linked to adult illiteracy, teacher training, or continuous education in the form of e-learning.⁶ In Egypt, for example, the term is used to refer to the opportunity for teachers to obtain practical specialized certificates that will lead to promotion. In Jordan, it is used to refer to the provision of professional development programs to school staff.

In sum, then, globalization and the emergence of the knowledge economy have given education a new purpose as a powerful force for the creation and adaptation of knowledge. As a result, many countries around the world have adopted lifelong learning, with its diverse components, to reorient their education systems to equip their populations with the skills and expertise to compete globally. Some MENA countries have begun to follow suit but have not gone far enough, while others have yet to start the process.

Demographic Changes in MENA and Education

MENA’s demographic profile and demographic changes will pose a significant challenge for education in the coming decades. This challenge takes on two specific dimensions. The first is related to the exceptional “youth bulge” (15–24 year olds), which will place added pressure on the education system to accommodate new students. The second is a byproduct of current enrollment and retention trends, which have resulted in high levels of dropouts and out-of-school youth. Both challenges are elaborated below.

The Impact of the “Youth Bulge” on the Demand for Education

MENA has one of the largest “baby boomer” cohorts in the world. The current “youth bulge” is due to the high fertility rates in the past. Although population growth rates are expected to decline in the future, the demand for education will increase as this bulge works its way through the system.

Population growth and the youth bulge in MENA from 1950 to 2050.

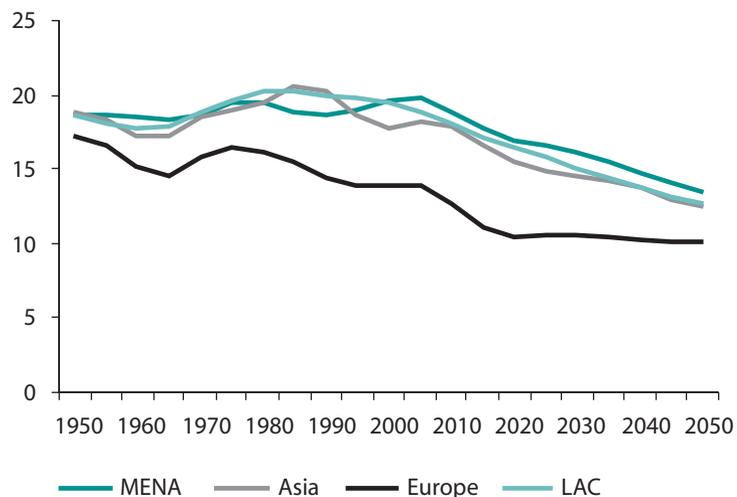
The MENA region has experienced a unique population growth pattern over the past 50 years. The total population increased 3.7 times during this period, from 100 million in 1950 to approximately 380 million in 2000. No other region of the world has grown as rapidly, and some estimates suggest that total population in MENA will reach 600 million by 2025 (Yousef 1999).

MENA's population growth is primarily the product of past fertility rates (rather than in-migration). During the 1960s, fertility rates were about seven children per woman; at such rates, the population typically doubles every 20–30 years. Fertility rates have gradually declined since the early 1980s, and so the population growth rates declined as well. However, the percentage of youth in the population in MENA will continue to be higher than in other regions of the world for decades (figure 3.3).

Currently, the population of 15-to-24 year-olds accounts for 21.5 percent (approximately 70 million) of the regional population, while another 45 percent is less than 15 years of age (U.S. State Department 2005). The region's population pyramid, shown in figure 3.4, indicates that the youth population represents an overwhelmingly large share in the total population. The “baby boomers” are set to join the adult population and can be expected to affect the region over the next 60 years. As this “bulge” works its way through the population, the profile of human capital they bring with them will ultimately determine how each country in the region will develop in economical, social, political, and cultural terms.

FIGURE 3.3

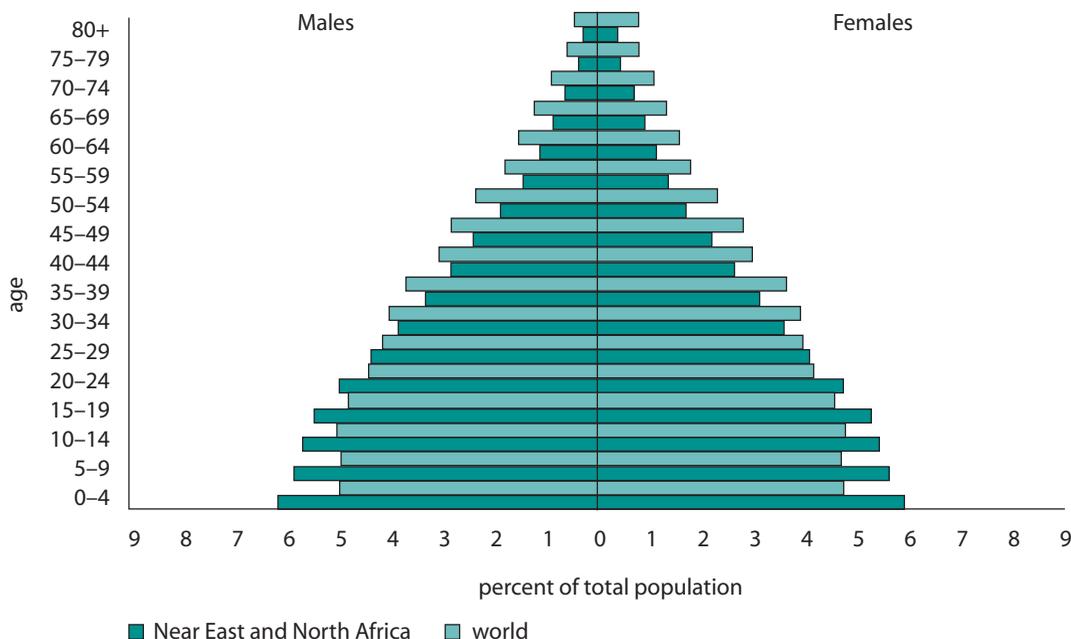
Percent of Youth Population by Region, 1950–2050



Source: UN Population Division 2006. <http://www.un.org/esa/population/unpop.htm>.

FIGURE 3.4

Population Pyramid of MENA and the World, 2002



Sources: U.S. Census Bureau 2002. Global Population Profile.

The impact of demographic changes on the demand for education.

MENA’s “baby boom” will affect demand for education in two ways. The first and most obvious is the increase in the demand for formal education. Countries that decide to raise the enrollment rates for different levels of instruction will face a steep rise of demand because of the “demographic bulge,” along with a steep rise in the cost of meeting this demand. The second is related to the demand for different educational outcomes, as per the above discussion on the knowledge economy. In sum, an increasingly large number of youth will require educational opportunities that do not yet exist in either quantitative or qualitative terms.

Likely increases in demand for education were projected for the approximate age group for the primary, secondary, and tertiary levels of instruction (6–11 years old, 12–17 years old, and 18–23 years old, respectively) during the period 1950–2050 in each MENA country. From this exercise, MENA countries can be categorized into three groups: the first group has seen or will soon see the size of its primary education cohort peak. Lebanon’s primary school cohort reached its highest level in 1975, well before others in this group; Algeria, Lebanon, and Kuwait reached this benchmark in the mid-1990s and Bahrain, Iran, and Jordan are expected to reach this point by 2010. For the second group—Libya, Morocco, Saudi Arabia, and Syria—this cohort will reach its maximum size

around 2020–2030. Finally, the primary education cohort in Djibouti, Iraq, Oman, Qatar, United Arab Emirates, and Yemen will continue to grow until 2050. (See figure 3.5 for the projections of the age group 6–11 years old for selected countries.)

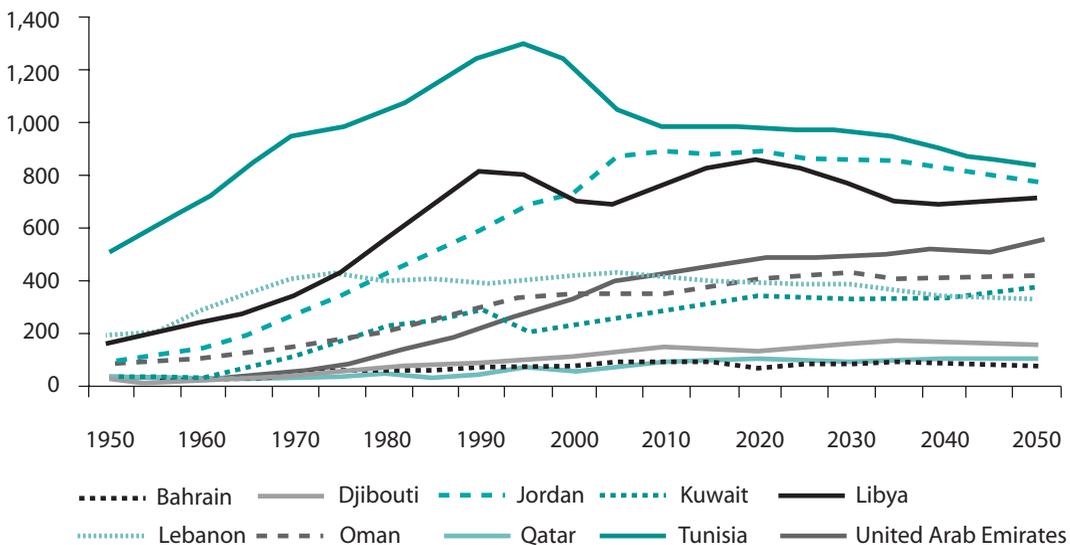
The same patterns will occur with a time delay of approximately 6 years for secondary education and 12 years for tertiary. For the first group of countries, the size of the secondary education cohort will have peaked by 2000 and the tertiary education cohort by 2035. For the second group of countries, the size of the secondary education cohort will peak in 2035 and the tertiary education cohort in 2045.⁷

We have also projected the enrollment demand that will result from the demographic trends and countries’ enrollment targets. The results for primary education suggest that countries in the first and second group are presently able to accommodate projected demand without a significant expansion of capacity, particularly as most have already reached 100 percent GER (gross enrollment rate) and have or will soon have a declining clientele at this level. Most countries in the third group, however, have not yet attained a 100 percent primary GER and will thus need to continue establishing capacity over the next 20 years. Many countries in this group also have primary education cohorts that will continue to grow.

In contrast, virtually all MENA countries will need to address a substantial jump in demand for secondary and tertiary education as they fac-

FIGURE 3.5

Changes in the Age Group (6–11) Population in Selected MENA Countries, 1950–2050



Source: UN Population Division (2006). <http://www.un.org/esa/population/unpop.htm>.

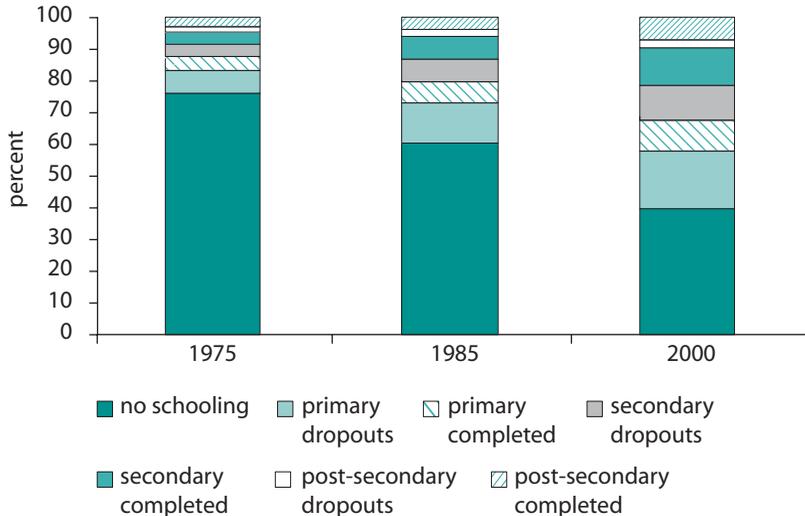
tor in both targeted enrollments rates and the expected growth of the relevant cohort. Only Tunisia has already developed the capacity to meet all secondary education demand, according to our estimations and projections. For countries in the first and second group, secondary education enrollments are expected to peak by 2025–2035 and tertiary education by 2040.

These trends translate into a tremendous growth in the number of students that will need to be accommodated at secondary and tertiary levels over the next 30 years. It is expected that the secondary education population in the region will increase by one-third during this period, and the tertiary education population will more than double.

Educational attainment and out-of-school youth and adults. As noted already, the MENA region has made considerable progress in bringing students to school, with evident impact on the education profile of the adult population (figure 3.6).⁸ The proportion of the adult population with no formal education declined by 40–50 percent over the last 30 years in the countries surveyed.

The decline in the proportion of adults who have not been to school has created two new cohorts. First, within our sample of countries, the proportion of adults who have at least completed primary education increased from approximately 10–20 percent in 1970 to 40–60 percent

FIGURE 3.6
Education Attainment in the Population in MENA (Weighted Average), Age 25 and Above, 1975, 1985, and 2000



Source: Barro and Lee (2000).

today. At the same time, the proportion of adults who dropped out of primary school has risen to 15–25 percent of the overall adult population from MENA average of 9 percent in 1970.

A similar dynamic occurred for the adult population who went on to enroll in secondary or tertiary education. On average, the countries in our sample have increased the share of the adult population with some secondary and tertiary education from 10–15 percent in 1970 to 40–50 percent in 2000. However, a significant proportion of those who went on to post-compulsory education did not complete the level of instruction in which they were enrolled. In 2000, approximately one-half of those who had some post-compulsory education dropped out before obtaining their degree.

Thus, the human capital profile of MENA's adult population is quite mixed. On the one hand, the overall level of instruction of the adult population has improved considerably. On the other, education systems have evidently produced a substantial amount of school failure along the way.

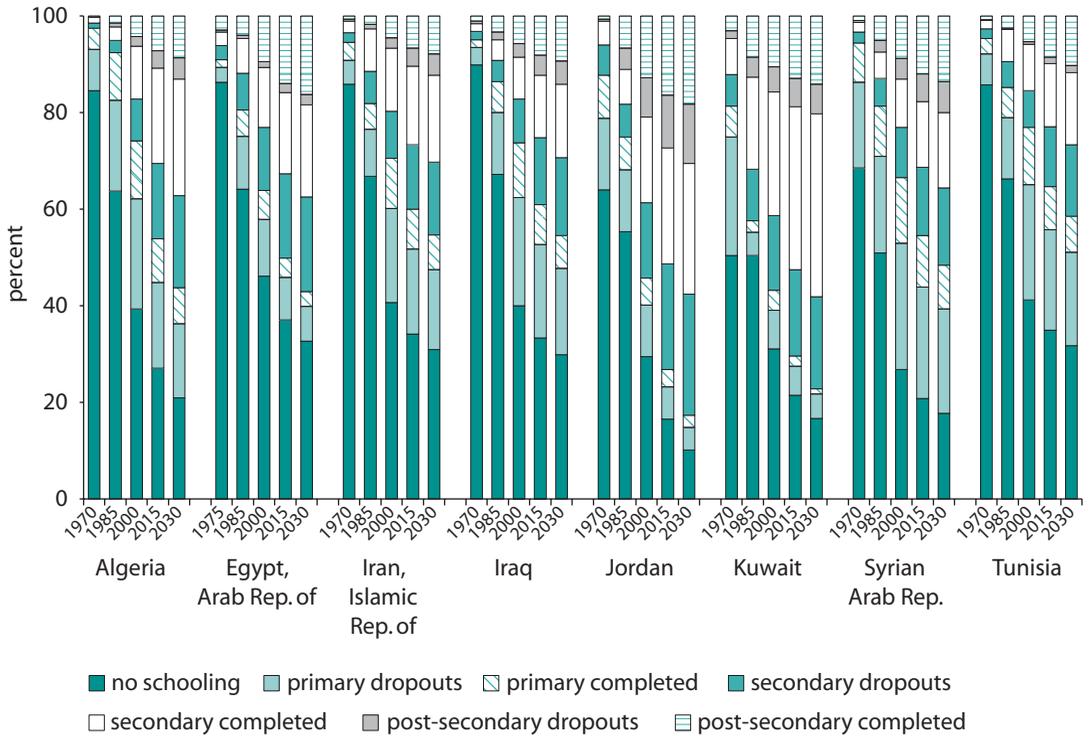
Does this matter? Those who drop out of school, particularly at post-compulsory levels, did obtain a certain amount of knowledge and skills. They can contribute to and participate in the economy and society with a fundamental level of instruction. However, with one-third of the adult population who go through their lives as school dropouts, MENA countries and their citizens must be losing some of the investment they made in education. The diploma in MENA, as in most of the world, has a “credentialing” value to the individual: (i) it signals to employers that a person has reached a particular level of competence, and (ii) it allows many to access continued opportunities of instruction. Without the diploma, an individual's options are more limited, and the probability of exclusion increases, particularly within a global labor market.

Education attainment in the adult population in 2015 and 2030. The possible education attainment profile of the adult population was calculated for 2015 and 2030, taking into account the current rates of educational access, internal efficiency, and changes in the demographic profile of the population. The results for eight MENA countries are shown in figure 3.7.

Overall, we expect the adult population profile to continue to show higher levels of education attainment over the next 25 years. There will be a greater proportion of adults with some post-compulsory education, replacing unschooled adults and those with some or only primary education. For most countries, the proportion of unschooled and primary dropouts will decline from 50–60 percent in 2000 to 30–40 percent in 2030 and the proportion of post-compulsory degree holders will consequently increase. However, the proportion of secondary and tertiary

FIGURE 3.7

Education Attainment of Adult Population for Selected MENA Countries, 2030



Source: Miyajima 2006.

dropouts will also grow by 10 percent by 2030. Overall, by 2030, 25 percent of the population will have dropped out of (or never attended) school, the same as in 2000. However, in 2030, secondary and tertiary dropouts will outnumber primary dropouts.

Out-of-school children and youth: an old and new challenge. Out-of-school children and youth (OSCY) are persons ages 6 years and up to about 20 years of age who should be in compulsory schooling, but are not. Overall, about 15–20 percent of school-aged children and adolescents are currently out of school because they: (i) have never attended school; (ii) have not completed primary school; and/or (iii) have not attended or completed compulsory secondary school.

About 9 million children—nearly 5 million children ages 6 to 10 and another 4 million children ages 11 to 15—were out of school in 1995. By 2015, these numbers are projected to increase to 7.5 million and 5.6 million, respectively, for a potential total of more than 13 million children and youth who are of school age and who will not be in school. Only significant policy shifts can turn around this serious situation of OSCY in MENA.

The prevention of school failure and dropout is the ideal “cure” for OSCY. The cost of training and reintegrating children for a return to schooling is considerably more expensive than retaining children in the formal school system. Fortunately, there are a variety of ways to help keep children in the school system, such as:

- Supporting remedial education that can address a dramatic loss of school time, if systems (including trained counselors) are put in place in time to reduce school dropout
- Redistributing qualified teachers to ensure a higher quality of education and to reduce difficulties in reaching schools given (at times) security and closure impediments
- Increasing the age limit for students to attend or complete their schooling
- Allowing married girls (or young women with children), who may have been prevented from attending school out of sociocultural considerations, to stay or be reintegrated in school
- Encouraging schools to manage dropout reduction through meetings with teachers and parents.

However, such remedial actions do not deal with the stock of OSCY, who are often poor children, rural children, children who speak nonmajority languages, mainly girls and young women, children with disabilities, children who have serious health and sanitation problems, or children caught up in conflict zones of violence. They also have no or minimum access to basic social and economic services. Furthermore, many OSCY start working at a young age, and may be malnourished, sick, disabled, living on the streets or in orphanages, or resorting to crime and delinquency. If they also have no compulsory education, they become a drain on economic development, while creating the possibility of increased political alienation and greater tensions between generational and social groups. These “last-mile” populations also include the *most disadvantaged and vulnerable* in the region. Reaching these children and adolescents requires innovative, multisectoral policies and programs that are low-cost and effective, and build on the strengths and interests (i.e., demand) of families and communities.

Education Finance

From the previous sections of this chapter, we draw two main conclusions: first, demand for post-compulsory education will grow quite ex-

tensively as current trends in the demographic profile of MENA countries and in school enrollments make their impact felt. This demand will increase even more if countries adopt the notion of lifelong learning that encourages all adults to continue to seek new skills and knowledge. Second, the nature of education is expected to change in fundamental ways as more students are expected to succeed, and succeed at higher levels of achievement.

The consequence of this trend is clear: MENA will require the development of more educational opportunities. Assuming that current cost trends continue, we expect the overall cost of education to increase significantly over the next decades. How will MENA pay for this, and how will the region ensure that the fiscal pressure does not lead to deterioration in quality? These are the questions and trade-offs that policy makers will face in the future.

In an attempt to answer the above questions, the rest of this section examines the current spending patterns on education. The implications of the demographic trends and emphasis on quality are also explored, in terms of financing. On the basis of both, suggestions are proffered to address the financial constraints of going forward.

Sources and Structure of Funding Education: A Historical Perspective

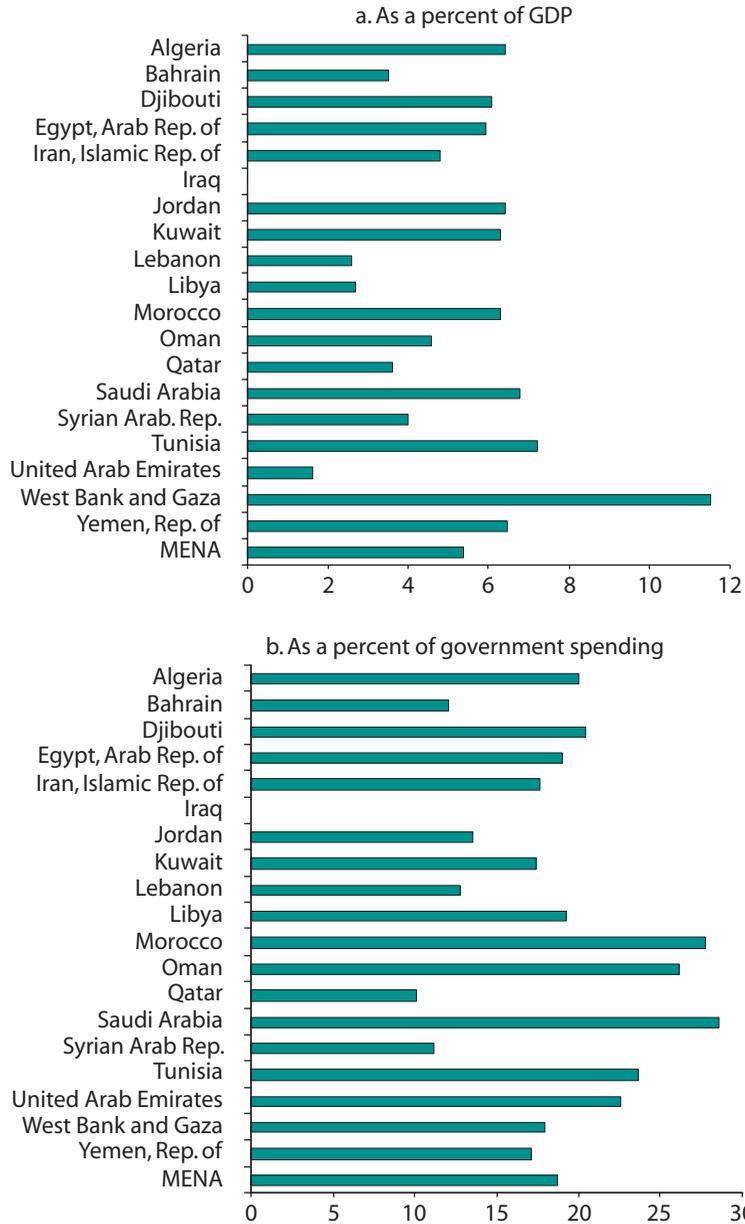
To better understand the possible options for funding future education opportunities, it is useful to look at how much governments in the MENA region contribute to education, how much the private sector provides, and how much it costs per student at each level of instruction.

The weight of public and private expenditures. As discussed in chapter 1, MENA countries on average spend approximately one-fifth of total public expenditures on education and a relatively high percent of GDP (figure 3.8). Most countries, rich and poor, allocate more than 20 percent of their budget to education, including, for example, Saudi Arabia, United Arab Emirates, Tunisia, Libya, and Algeria, on the one hand, and, Yemen, Morocco, and Djibouti on the other. A similar number of countries allocate less than 15 percent of their budget to education, including Oman, Jordan, Lebanon, Bahrain, Kuwait, Syria, West Bank and Gaza, and Qatar (in some of them, however, the private sector is more active, as will be discussed below).

Historically, spending on education increased faster than economic growth. Changes in economic growth were usually followed by a change in spending for education in essentially the same direction, but education spending almost always outpaced economic growth and was somewhat

FIGURE 3.8

Public Spending on Education in MENA, Most Recent Year during 1999–2003



Source: Statistical Appendix.

protected during periods of declining GDP. In Saudi Arabia, for example, education spending as a proportion of overall spending tripled from 1970 to 2000: neither economic growth nor the price of oil had much impact on this trend. In Algeria, economic constraints did appear to dampen spending on education, but education spending was at the highest levels (in the region 29 percent of public spending and 10 percent of GDP in 1980) before any decline.

Eventually, spending on education was brought down to 20 percent of government spending, but only 10 years after the 1986 plunge in oil prices. These examples indicate that spending on education in the MENA region, as in much of the world, is dictated by social demand for education rather than by the immediate state of public finances. Education remains a priority and a relatively protected public expenditure in most countries in the region. However, it would be difficult for most countries to increase spending beyond 20–25 percent.

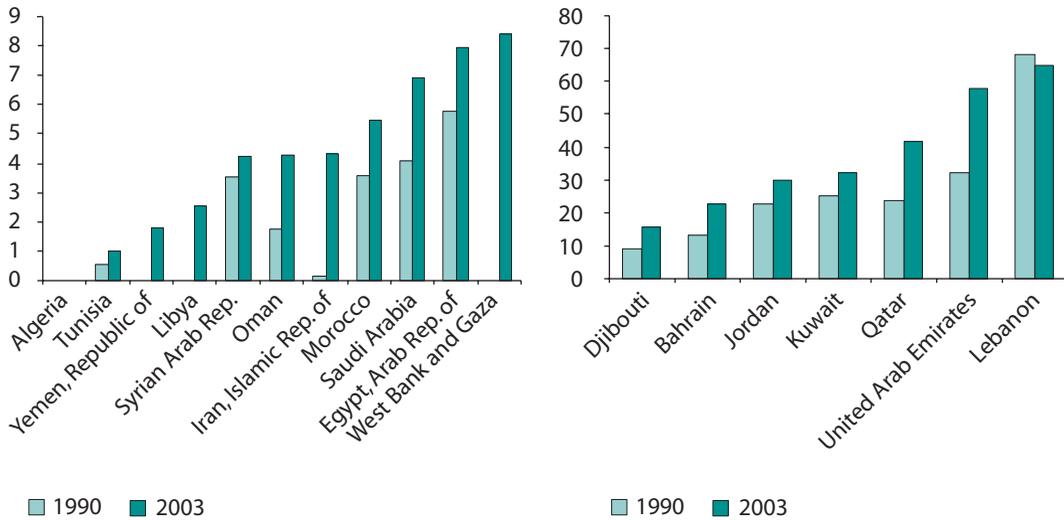
The contribution of nonpublic resources to education. The nongovernment financial contribution to education is difficult to discern in MENA, as few data are available. However, there is a widespread belief that this contribution is modest. In part, this is because enrollment in private education tends to be very low in some countries, for example, in Tunisia, Algeria, Yemen, and Libya (see figure 3.9). Although this pattern is changing and some countries have traditionally had large private enrollment (e.g., Lebanon), low private enrollment suggests that governments carry most of the financial burden of education.

In addition, most governments in MENA have followed a policy of essentially free education at all levels of public instruction. Usually, university students pay a symbolic fee, which covers an insignificant proportion of outlays. With the youth bulge and the expected increase in demand for secondary and tertiary education, *this is a crisis in the making*. Policy makers need to devise education funding strategies to sustain quality and meet rising demand.

This is not to suggest that household expenditure on education is insignificant. In Tunisia, for example, where private education is almost nonexistent, household expenditure on education has increased as a proportion of GDP from 0.5 percent in the 1980s to 1.4 percent today (Tunisia Institute of National Statistics). A similar trend most probably holds in other countries, especially in countries like Egypt where private tutoring is reaching new heights. To the extent that such a phenomenon is widespread, there is room for mobilizing some funding from households without necessarily increasing their financial burden. However, carrying out this policy shift constitutes a political challenge—specifically, the demand for mechanisms to address the needs of poor students.

FIGURE 3.9

Evolution of the Proportion of Private Primary Education in 1990 and 2002



Source: Statistical Appendix.

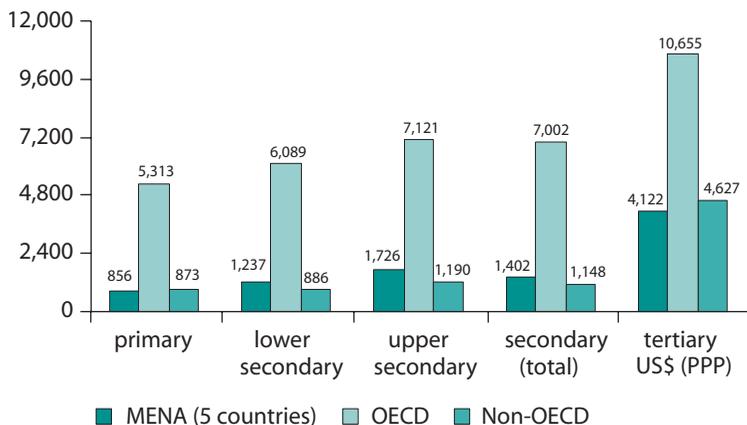
Unit cost at different levels of education. Looking at the absolute unit cost of a student at different levels of education in PPP U.S. dollars suggests that MENA countries' spending per pupil is comparable to that of middle-income countries, and significantly below that of OECD countries (figure 3.10). This observation is based on a sample of the following MENA countries: Algeria, Morocco, Tunisia, Egypt, and Jordan. If the sample were to include oil-rich countries, the comparison would have revealed higher unit costs in MENA.

The above conclusion is reinforced when we consider spending per pupil as a proportion of GDP per capita. In this case, we find that MENA countries, represented by the same sample as above, spend more than any other group, including OECD countries (see figure 3.11). The difference is relatively modest at the primary and lower secondary levels, but is substantial at the upper secondary and tertiary education levels. Indeed, *MENA countries spend approximately 50 percent more than the middle countries chosen for comparison on upper secondary education and twice as much as OECD countries for tertiary education, in terms of GDP per capita.*

In the 1970s and 1980s, capital expenditure accounted for one-quarter of total expenditures on education in the MENA region. This was a period of rapid expansion and construction of school infrastructure. From 1990, this percent was brought down to less than 13 percent, which is not much different from the share of capital in total expenditures in developing countries. Thus, the high unit cost in MENA is

FIGURE 3.10

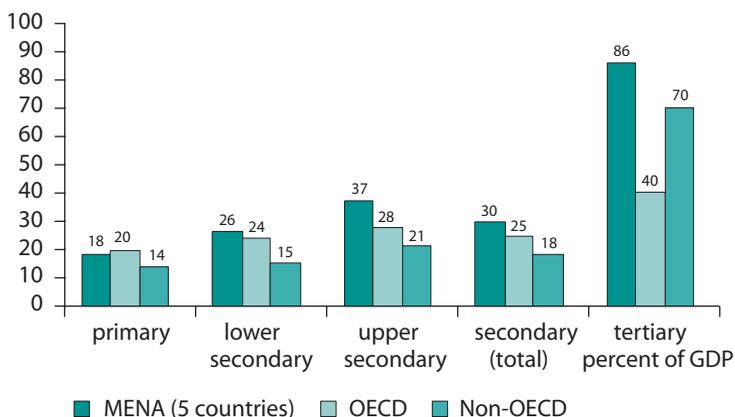
The Absolute Value of Average Costs per Student in MENA and Non-MENA Countries, US\$ (PPP)



Sources: OECD countries and Jordan: Education at a Glance (2005); Algeria and Tunisia: national source (2004).

FIGURE 3.11

Spending per Pupil as a Proportion of GDP per Capita in MENA and Non-MENA Countries, Percent

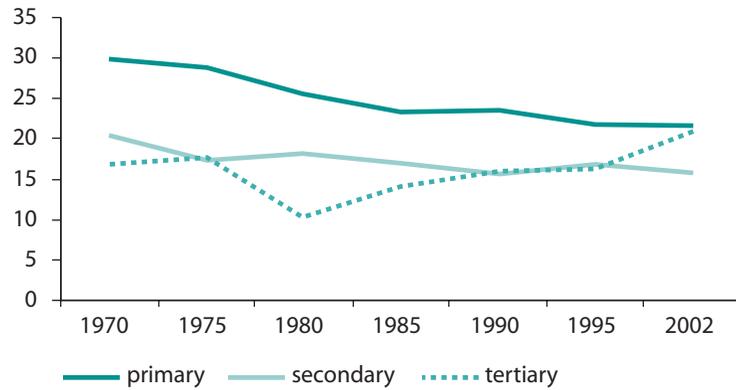


Sources: OECD countries and Jordan: Education at a Glance (2005); Algeria and Tunisia: national source (2004).

driven primarily by salaries, which are determined to a large extent by student–teacher ratios.

These ratios, shown in figure 3.12 for the period 1970–2002, clearly point out a reduction in the number of pupils per teacher in primary and secondary education, but an increase in the ratio in tertiary education

FIGURE 3.12

Pupil–Teacher Ratio by Level of Education, 1970–2002

Source: Statistical Appendix.

since 1980, following the massification of higher education in several MENA countries.

Overall then, we can make the following observations:

- The region spends a much higher amount per pupil relative to its per capita income than both developing and developed countries, particularly at the level of tertiary education.
- The region has steadily reallocated resources from primary to secondary and tertiary education, but not enough to offset the increased enrollment at higher levels of instruction.
- Much of the financing burden falls on the government budget, with households probably spending large sums of money that are not well documented.

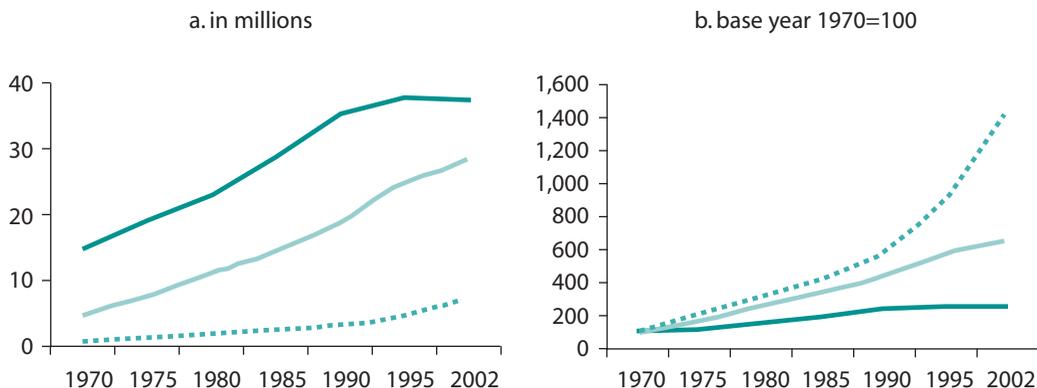
Thus, the region is likely to increasingly face a resource constraint in financing education, unless alternative policies are adopted.

Expansion of Secondary and Post-Secondary Education

In addition to the high unit costs relative to per capita income, the region will experience a significant expansion in post-secondary education in the future. Figure 3.13 shows the changes in the actual number of students in primary, secondary, and tertiary education as well as their index over the period 1970–2002. These trends indicate that the region has essentially stabilized enrollment in primary education, but there has been a rapid increase in the number of students in both secondary and post-secondary levels of instruction.

FIGURE 3.13

Historical Enrollment of Students in Primary, Secondary, and Tertiary Education

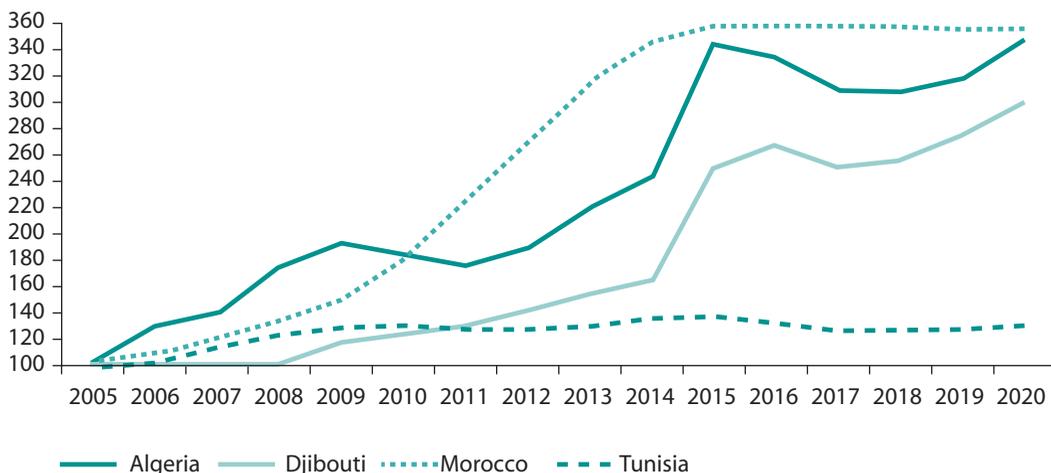


Source: Statistical Appendix.

These trends are likely to persist in the future. During the next decade in particular, the development of secondary education will continue and accelerate the pressure on the expansion of post-secondary education. These projections, shown in figure 3.14, hold for a sample of countries, including Morocco, Algeria, and Djibouti. The only exception is Tunisia, where enrollment is likely to stabilize shortly.

FIGURE 3.14

Projection of the Number of Students Completing Secondary School in Selected MENA Countries



Sources: Algeria: World Bank (2005) Étude sur la restructuration du post-obligatoire; Djibouti: Ministry of Education; Morocco: author's calculation and World Bank (2004) Étude sur l'enseignement collégial; Tunisia: World Bank (2006) Étude sur le financement de l'enseignement supérieur.

To be sure, the region is expected to continue to transfer some resources from primary to higher education, given that almost all countries have succeeded in achieving full enrollment at the level of basic education. But these savings, if overdone, could compromise the quality of education at this basic level of instruction and are not likely to be enough to meet the cost of expanding higher levels of education. After all, the expansion of higher levels of education is more expensive, as shown in the previous section. In addition, there is an increasing emphasis on the quality of education, which also requires resources. Moreover, public funding is already at relatively high levels, both as a share in the government budget and as a percent of GDP. Thus, there is limited room for increasing public funding for education without compromising other expenditure items or risking increasing fiscal deficits. All of these factors suggest that MENA countries are left with very few choices. In addition to seeking alternative ways for funding education (e.g., cost sharing, student loans, outsourcing of hostels and catering services), the other option is to improve the efficiency of the education system itself.

The Trade-off

To meet the expansion in demand for higher education and to maintain quality, the region faces a trade-off. The easy option for policy makers would be to continue to expand the education system with no change in the funding strategy. However, this option would be to the detriment of the quality of education and its contribution to economic development. Alternatively, meeting the increase in demand, especially at the tertiary level, could be accomplished by mobilizing private funding while ensuring that those who are qualified but cannot afford the costs of education have access to government funding. Such a strategy would be consistent with the international trends noted in chapter 2.

Summing Up

Even if past investments in education generated maximum returns in terms of economic growth, greater equality, and reduced poverty, the MENA region would still need to reshape its education systems to face up to a number of new challenges. The most glaring ones relate to globalization and the increasing importance of the knowledge economy in the development process, the youth bulge and out-of-school children and adults, and financing requirements.

With respect to globalization and the knowledge economy, the education systems in the region must produce competent and flexible human

capital to be able to compete. Lifelong learning and coping with out-of-school children and adults are no longer a luxury but a necessity. Both challenges require a shift in what is taught in schools and how it is taught, to enable students to acquire the necessary fundamental and transversal skills and to upgrade these skills over time.

Similarly, the region confronts the pressure of a youth bulge never before seen in the region or elsewhere. The baby boomers resulting from very high fertility rates in the past few decades will soon put enormous pressure on governments to expand the education system for decades to come. The bulk of the increase in demand will be at the secondary and tertiary levels of instruction, which tend to be more costly than primary education to provide.

Finally, meeting the above challenges requires financing, which is difficult to secure on the basis of the current patterns of expenditure and sources of funding. The challenge here is to find ways to mobilize resources without compromising equity and the quality of education.

Meeting the above challenges is fundamental to the ability of the education systems in the region to meet the aspirations of the population for a better life. The question we deal with in succeeding chapters is how policy makers may meet those challenges.

Endnotes

1. <http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/KFDLP/0,,menuPK:461238~pagePK:64156143~piPK:64154155~theSitePK:461198,00.html>.

2. The term “fundamental level” is used to refer to that minimum set of skills, competencies, and knowledge sets necessary to provide value added to economies. This fundamental level is always open to discussion, but at the very least includes numeracy and literacy in a national language.

3. A transformation of post-compulsory education does not entail an upending of the structure of education systems. The traditional levels of instruction—secondary, higher, vocational—continue to exist, albeit with new ways of functioning.

4. There were only 11 institutions of higher education in the region before 1950. Today, there are more than 200 universities, of which 76 are private higher institutions (UNESCO 2006).

5. Egypt: PAD for Higher Education: Mid-term Review of Higher Education Project (June 2005); Oman: http://inqaah.org/members_view_all.cfm?mID=3&sID=22; UNESCO (2003) Higher Education in Arab Region 1998–2003.

6. The team surveyed UNESCO National Reports from 2003 for 14 countries of the MENA and GCC countries.

7. On average, MENA countries have 100 percent primary gross enrollment rate (GER), 75 percent secondary GER, and 15 percent tertiary GER. It is ex-

pected that most countries will pursue an expansion of access equal to approximately 90 percent secondary GER and 40 percent tertiary GER over the next 20 to 40 years.

8. The calculations in this section are based on data collected by Barro and Lee (2000), which report the level of educational attainment throughout the world. Using this information, we report the trends in nine MENA countries: Algeria, Bahrain, Arabic Republic of Egypt, Iran, Iraq, Jordan, Kuwait, Syrian Arabic Republic, and Tunisia.

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