



## EDUCATION IN THE ARAB WORLD: SHIFT TO QUALITY IN MATH, SCIENCE & TECHNOLOGY FALTERING

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### MENA's Investment in Education and Its

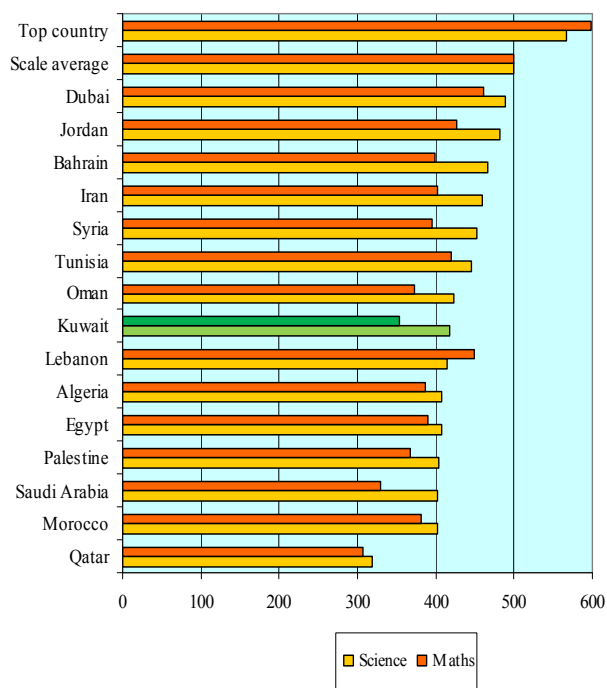
**Outcomes:** Impressive results still leave MENA with an education gap as compared to the rest of the world. With some exceptions, MENA countries have almost reached full primary education enrollment and increased enrollment in secondary schools almost threefold since 1970, and fivefold at the higher education level. The crowning achievement for the MENA region has been the closing of the education gender gap. Illiteracy rates have also been halved in the past 20 years and the absolute difference between male and female adult literacy rates is declining rapidly. These impressive quantitative achievements have contributed to improving the quality of life for citizens through longer life expectancy, lower fertility and infant mortality rates, and a more cohesive national identity.

Despite these improvements, the educational achievements of MENA countries remain below other countries at similar levels of economic development. In particular:

- The average number of years of schooling in MENA is below fast growing developing countries by more than one year<sup>2</sup>.
- Results on international tests indicate that outcomes remain significantly below that of the OECD<sup>3</sup> countries. The 2007 TIMSS test on 8<sup>th</sup> grade Math and Science capabilities resulted in none of the 12

participating MENA countries reaching the average scale. The scores were almost the same as 4 years ago. It is remarkable that most MENA countries do not have national standards for achievement in learning, and those that do, do not use the tests to promote accountability.

Grade 8 TIMSS scores (math and science)  
2007



- Rote learning still dominates teaching, and little emphasis is put on problem solving and interactive teaching methods that would demand initiative from students. Foreign language and science do not make up a sufficient share of the curricula. While pedagogical methods

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<sup>2</sup> We use China, Indonesia, Malaysia, South Korea, Philippines and Thailand as comparators.

<sup>3</sup> Organization for Economic Cooperation and Development.

adopted worldwide incorporate inquiry-based learning, most MENA countries continue to use a more traditional model of pedagogy (for example, copying from the blackboard, and little interaction between teachers and students).

- In more than half of the MENA countries, approximately two-thirds of secondary students major in the fields of social science and humanities rather than in science and mathematics. This enrollment pattern is the opposite of that observed in East Asia and, to a lesser extent, in Latin America. Given that technological innovation and adaptation is increasingly playing a prominent role in the economy, MENA schools are producing the wrong mix of competencies.
- In higher education, none of the MENA institutions has featured prominently in international university rankings or is producing significant research. Only 22.6% of MENA students pursue science, technical and engineering degrees, much less than in other fast growing developing countries. Finally, MENA countries do not have sound quality assurance and certification mechanisms for higher education.

While the above generalizations clearly do not apply to all countries in the MENA region, nevertheless, the region's countries on the whole do exhibit a number of similarities.

**The World Bank Report "The Road Not Traveled, Education Reforms in The Middle East and North Africa":** The report, which was launched one year ago, showed that countries in the MENA region have broadly followed similar paths of educational development, and concluded that future reforms need to focus on changing the incentive structure and reinforcing accountability measures.

Reforms in the MENA region have been dominated by the engineering perspective, i.e. putting in place buildings, teachers, and pedagogical materials based on a simple prediction of demand. The findings of the

Report suggest that achieving better quality will require additional incentive mechanisms as well as additional public accountability measures. While over time, MENA reform programs have exhibited a modest shift in focus from engineering toward incentives, this shift has not concerned all countries and has been insufficient to produce a change of paradigm, or to make a substantial impact on the quality of teaching and learning.

The emphasis on engineering may have been justified during the post independence period, because establishing a mass educational system required the "engineering" of everything; and furthermore, a command-and-control system may have also been the best way to manage the entire process. However, the world and MENA have changed, with educational systems facing new and complex challenges, and requiring that the approach to educational reform in MENA quickly evolve.

**The Road Ahead:** MENA educational systems need different types of incentive structures, and public accountability mechanisms. In order to improve science and technology performance, a number of policies are required to upgrade public education at all levels, and not solely in a few elite schools and universities. Key recommendations for future reforms are as follows:

1- *Set clear qualitative objectives and measure outcomes* - Every MENA country needs to adopt national performance standards and continuously monitor learning achievement. In higher education, quality assurance and certification mechanisms need to be developed at the national and regional level.

2- *Disseminate information about school outcomes* - An accurate, credible, regularly updated, and detailed information system is required to improve educational outcomes, as well as to ensure that all vehicles of public accountability function on the basis of a firm foundation. Educational information systems tend to be weak in the MENA region, as demonstrated by the many gaps in basic educational data available to the public: even basic information on student outcomes,

attendance, dropout, teacher absenteeism, and teacher training and qualification needs is not readily available to school, district, and national education managers on a timely basis. This weakness is rather the result of a lack of political will to disseminate information about school performance to parents and other stakeholders than a technical incapacity to measure outcomes. It is a major obstacle to successful reforms.

*3- Move from Engineering Inputs to Engineering for Results:* Education must produce appropriate skills for global competition and meet a growing demand for post compulsory education. This increased complexity requires a new kind of engineering based on partnership rather than hierarchical command. Regional governments need to abandon the idea that they need to control the allocation of all educational inputs and resources. Rather, they should set clear objectives and coordinate the contributions of an assortment of actors (public, private, local, non-governmental) to meet the expected objectives. Some of the tools for this type of engineering include quality control and public-private partnerships.

*4- Move From Hierarchical Control to Incentive-Compatible Contracts* - To promote the flexibility and performance of educational actors there are three areas in which MENA countries can further improve incentive structures. First, non-public provision of instruction and education should be further promoted, particularly in areas where it has an evident comparative advantage to meet diversified demand for educational services (for example, non-formal education, vocational training, and post-secondary education). Second, more decision-making responsibilities could be shifted to the school or university level to increase flexibility.

In parallel, (additional) public financing could be tied to outcomes and innovation, thus ensuring accountability for performance. Finally, new teacher incentive structures are needed. Although linking teacher pay or promotion to class outcomes is controversial, many countries are experimenting with incentives to teaching teams (sometimes

school-wide, sometimes specific departments) to work together to improve learning outcomes. Moreover, teacher licenses and promotion could require teachers to continuously upgrade their skills and competencies, rather than having them depend on seniority alone.

*5- Replace Accountability to the State with Accountability to the Public* - For educational systems to perform better, they must cater to the increasingly complex demands of a diverse clientele (parents, students, workers, employers). Ensuring better accountability to this public is of paramount importance. Institutional mechanisms must be put in place to promote a more level playing field for stakeholders to influence educational policy, resource allocation, and service delivery. In MENA, accountability has usually been organized by governments in the form of consultative events, parliamentary oversight committees, advisory committees, or non-governmental representation on oversight agencies. In many other regions, civil society has also created such mechanisms through advocacy and “watchdog” organizations, specialized journals, independent research institutes, and professional associations. Such instances are just starting to appear in MENA countries and need to be recognized and encouraged.

### **Is There a Role for Regional Cooperation?**

Despite the increased evidence pointing to the need to improve education, MENA countries still lack the critical capacity and human resources needed to conduct education research, to disseminate results and to inform policy-making. In this domain, national efforts can be effectively supplemented by regional approaches that promote the sharing of good practices and facilitate the emergence of regional networks of experts.

The region also needs cooperation to develop coherent qualification frameworks and quality assurance mechanisms at the higher education level, which will be essential to labor mobility in the future. While specialized regional institutions, such as ALECSO, have existed for a long time, they have not been focusing on building regional programs, and so far have

played a timid role. For the past year, the World Bank, within the framework of its Arab World Initiative, has been attempting to find ways to cooperate with dedicated regional institutions to launch a number of initiatives covering several areas, including the use of empirical evidence in the formulation, implementation, monitoring and evaluation of education policies aimed at educational improvement.

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