

Report No. 42863-EG

Arab Republic of Egypt Improving Quality, Equality, and Efficiency in the Education Sector Fostering a Competent Generation of Youth

June 29, 2007

MNSHD
Human Development Department
Middle East and North Africa Region



Document of the World Bank

Currency Equivalents
(Exchange Rate Effective XXX)

Currency Unit = LE (Egyptian Pound)
LE 1 = US\$ XXX
US\$ 1 - LE XXX

Abbreviations and Acronyms

CIDA	Canadian International Development Agency
ELMPS	Egyptian Labor Market Panel Survey
EU	European Union
GAEB	General Authority for Educational Buildings
GER	Gross Enrollment Rates
GTZ	German Agency for Technical Cooperation
HIES	Household Income and Expenditure Survey
ICT	Information and Communication Technology
KFW	German Reconstruction Credit Institute
MOE	Ministry of Education
PER	Public Expenditure Review
PIRLS	Progress in International Reading Literacy Study
PISA	Program for International Student Assessment
TIMSS	Trends in International Mathematics and Science Study
TVET	Technical and Vocation Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
WDR	World Development Report

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Preface and Acknowledgements

This report was written and prepared by Alec Ian Gershberg, Arun R. Joshi, Tomomi Miyajima, and Michel J. Welmond under the supervision of Mr. Joshi (Task Team Leader). Sherine El Shewarby and Yasser El Gammal provided guidance throughout the period of preparation of this report. Mahmoud Gamal El Din and Ahmed Dewidar provided analytic, organization, and other support in Egypt. Background papers were written by Dr. Mona El Baradei (Consultant), Aigli Zafeirakou (Consultant), Ahmed Dewidar, Christina Djemmal and Hannaa Gohary (Consultant). Dr. Mohammed Ragheb provided invaluable data input and insightful comments. Dr. Heba Laithy provided the analytic work from the 2004-05 Household Income and Expenditure Survey (HIES) as well as a background paper. Dr. Ragui Assaad (Population Council) provided very valuable data and insights on youth, the labor market, and connections to the education system, as did Jean Fares and John Blomquist.

We are especially grateful to our Ministry of Education (MOE) counterpart team—which was headed by Dr. Hasan Billawi and Dr. Mustafa Abdel Samie—and our donor partners, which included Elizabeth Warfield, Hala El Sirafy and Robert Davidson (USAID); Lynn Mortensen (Equip Egypt); Karin Johanssen, Paul van Schaik and Farid Hegazy (EU), Abir Salem (Population Council); Peter Schmidt (GTZ); Amr Aboul Azm (KFW). World Bank peer reviewers, Farukh Iqbal, Ernesto Cuadra and Mourad Ezzine (Education Sector Manager) provided helpful and insightful comments that improved the results. We are also grateful to Eric Hanushek for key insights and support regarding the analysis of outcomes, quality, and economic development vis-à-vis TIMSS results.

The current Minister of Education, H.E. Dr. Yossry El Gamal, has been mandated by the President of the Republic to reform the education system. He has led a strategic planning exercise with key donor partners and is engaged in numerous initiatives aimed at improving equity, quality, and efficiency in the pre-university education system. This report has been researched, shared, and written with the objective of providing support and input to these MOE initiatives. We have learned and benefited from the MOE's Strategic Plan as it evolved and hope we have also effectively added to the Plan.

This report was prepared through extensive consultations with the MOE and other relevant governmental and Parliamentary officials, as well as in partnership with key donors engaged in the education sector: USAID, EU, KFW, GTZ, CIDA, and relevant UN agencies. Four main group consultations were held in 2006 and 2007, starting with the review of the concept paper and ending with a review of the report. MOE counterparts and donors were present in all of these consultations. In addition, dialogue and discussions were also held with the MOE and donor partners on a bi-lateral basis. Overall, extensive comments have been sought and incorporated into the draft from all the key stakeholders and it is our hope that these findings are of value to all the donor partners in conceptualizing and tailoring their contributions in the sector.

Seven key sources of information were used in drafting this report: (i) 2005 Household Income and Expenditure survey provided a detailed picture of household education expenditure and some enrollment data, which allowed for some comparisons across households of varying income; (ii) MOE education data provided information on enrollments, dropouts, and repetition; (iii) Public Expenditure Review for Egypt (World Bank 2005) provided extensive information on efficiency and governance issues; (iv) review of the education policies and programs over the past 15 years provided information on what has been tried and lessons learned from past initiatives; (v) two separate analyses of TIMSS results—one specifically on Egypt (Carroll 2006) and the other a comparative study on the Middle East and North Africa (MENA) region (Abdul-Hamid 2005); (vi)

review of the teaching profession, teachers incentives, pedagogical approaches and teacher quality in Egypt; and (vii) the Population Council shared critical recent findings on youth and labor markets derived largely from the Egyptian Labor Market Panel Survey (ELMPS 2006) as well as previous similar labor market surveys.

The Arab Republic of Egypt
Education Sector Policy Note 2007

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CHAPTER 1. INTRODUCTION: QUALITY EDUCATION FOR THE NEXT GENERATION OF EGYPTIANS

1. Traversing many centuries of immense developments in culture, technology, and trade, Egypt now faces a great challenge: preparing its youth, the next generation, to be competitive members of the global economic community, thus putting the country on a trajectory for the well-being of its citizens—over 72 million at present—for the medium and long term. In short, Egypt must ensure that resources spent on education are, in fact, *investments* in human capital.

2. Human capital refers to “a broad range of knowledge, skills and capabilities needed for life and work, including those related to capability in successful living;’ engendered through quality education” (WDR, 2007). Inadequate human capital constrains productivity and growth and compromises the overall well-being of citizens. Significant investments in infrastructural development, such as dams, roads, and airports, will yield low returns in the absence of adequate human capital. Hanushek (2004, 2006), among others, shows convincingly that the returns to quality education in terms of increased growth are unequivocal. Nobel Laureate Michael Spence (2005) has made clear that even if education is not considered a binding constraint to development in a given country, those who fail to invest consistently in it over the long term do not have robust growth. Many developed countries such as Singapore and Japan have focused on a two-pronged strategy of growth and human capital formation. Building a strong human capital base, particularly through providing citizens with a variety of quality educational opportunities, is important not only for the present generation, but also to help reduce the intergenerational transmission of poverty and long-term economic stagnation. In this context, the challenge in Egypt, therefore, is how to achieve equitable, quality education for the next generation of Egyptians; and to accomplish this goal within a constrained fiscal environment.

3. The purpose of this report is to support the government of the Arab Republic of Egypt in reviewing the status of the pre-university education sector; and in identifying the key challenges it faces as it develops and implements a strategic plan to enhance its base of human capital. The key overarching finding—based primarily on the analyses presented in Chapters 2, 3 and 4 of this report—is that while significant progress has been made in providing more educational opportunities to Egyptian citizens, the quality of that educational experience is low and unequally distributed, leading to unequal educational outcomes. While inputs are important to quality, we also define quality in terms of specific outcomes that indicate learning at a level necessary to compete in a global marketplace. For instance, international test results, such as the Trends in International Mathematics and Science Study (TIMSS), are taken to be a strong indicator of educational outcomes that matter, and quality education is generally assumed to impact those outcomes. In addition, it is also clear that Egypt already spends a large share of its public and private resources (by international comparison) on education and, therefore, further improvements in equality of quality provision need to be financed to a great extent through efficiency gains.

4. **Inequality of educational outcomes:** socio-economic data on Egypt’s population exhibit inequality in education outcomes, particularly with respect to the two lowest income quintiles.¹ By some measures, inequality in Egypt is large both compared to other countries in MENA and compared more broadly to countries beyond the region.² These inequalities likely impact student

¹ The Egyptian MOE’s five-year strategic plan itself does a commendable job of highlighting this issue, and this current report adds some depth to that analysis.

² Increasingly, international evidence shows that such inequalities in outcomes in one generation are likely to perpetuate unequal outcomes in future generations. Thus Egypt policymakers are to be commended for taking on this

achievement and labor market outcomes. Many details are discussed in this report; however, we view the most important set of factors to be that: (i) the system is driven by an outdated curriculum and high-stakes tests that do not teach or measure skills needed by the labor market; (ii) the sorting that results from these tests creates a two-track system that corresponds roughly to those students who most often end up in general education and those in Technical and Vocational Education and Training (TVET), or who drop out; and (iii) the incentive environment created by these factors, coupled with low pay for teachers, leads to poor work incentives for teachers, poor accountability and a pervasive prevalence of private tutoring. Fortunately, the current leadership is beginning to take on system restructuring through the utilization of adequate incentives and/or “accountabilities”³; (iv) there has been too little focus on the learning outcomes necessary in a global economy and the development of a serious monitoring and evaluation framework is nascent. Each of the above concerns is addressed directly in the MOE’s recent five-year strategic plan for 2008-2012, and it will be important for annual operational plans to work towards achieving progress in each area.

5. Ironically, the inequitable outcomes in the Egyptian school system derive in part from national perceptions of what is fair: admission to free university education is the most sought-after goal of most middle class families, and it is generally rewarded in the labor market (even if graduates may have to wait years for their first official job). The perception that admission to university is objective and “fair,” based only upon performance on the high school leaving exam—called the *Thanawiya Amma*—is deeply ingrained. The fact that those with the ability to pay for expensive private tutoring tend to succeed more in this system does not seem to be perceived as “unfair”, even if it is inequitable as defined by most theories of justice (Sen, 2002; Rawls, 1996).⁴ The situation is further exacerbated when coupled with significant barriers to entry of the private sector into education provision.

6. Both the Egyptian government and the Egyptian people spend substantial public and private resources in education (larger compared to other similar countries), leading to the conclusion that further improvements in equity and quality would have to be secured largely through improved system efficiencies over the long term; thus, it is not the level of investment, but the nature of investment that must change.⁵ Major efficiency issues discussed include high levels of non-teaching staff, low pay for teachers, few incentives for teacher performance likely to improve accountability, difficulties implementing innovative pedagogy, a highly centralized system and low (though increasing) levels of school-based management and decision making. Again, the MOE’s five-year strategic plan addresses to some extent each of these issues and the key will be successfully implementing that plan.

7. Inequality, especially with regard to outcomes, was identified as a fundamental and priority education issue facing Egypt by various stakeholders, including the government and donors. It was

difficult but important issue. See, for example, Fernando Reimers (Ed.). (2000). *Unequal Schools, Unequal Chances: The Challenges to Equal Opportunity in the Americas*. Cambridge, MA: David Rockefeller Center, Harvard University Press. See also P. Oreopoulos, M.E. Page, and A.H. Stevens. “Does Human Capital Transfer from Parent to Child? The Intergenerational Effects of Compulsory Schooling.” NBER Working Paper No. 10164, December 2003

³ For instance, in March 2007, His Excellency the Minister himself hosted a conference called “International Conference on Education Decentralization,” and his closing remarks addressed many of these same issues, particularly the need to improve accountability, in part, through decentralization.

⁴ Note that schools do provide additional tutoring after hours whether in large or small groups. These tutoring sessions are provided at a very small fee. Poor families can afford these tutoring sessions; thus, none are deprived access to tutoring. However, the willingness of many middle and upper income families to pay for more expensive private tutoring strongly implies parents’ perception that it is of higher quality (See Chapter 4).

⁵ Much of the work on inefficiency in the present report draws upon, updates, and/ or builds upon the World Bank’s 2004-05 public expenditure review (PER).

agreed early on during participatory discussions that this report should focus on providing more in-depth analysis of this key issue rather than a cursory review of the overall sector and sub-sector issues. As a result, education sub-sector specific policies in the areas of pedagogy, textbooks, and teacher training, “inputs,” are not discussed in this report.

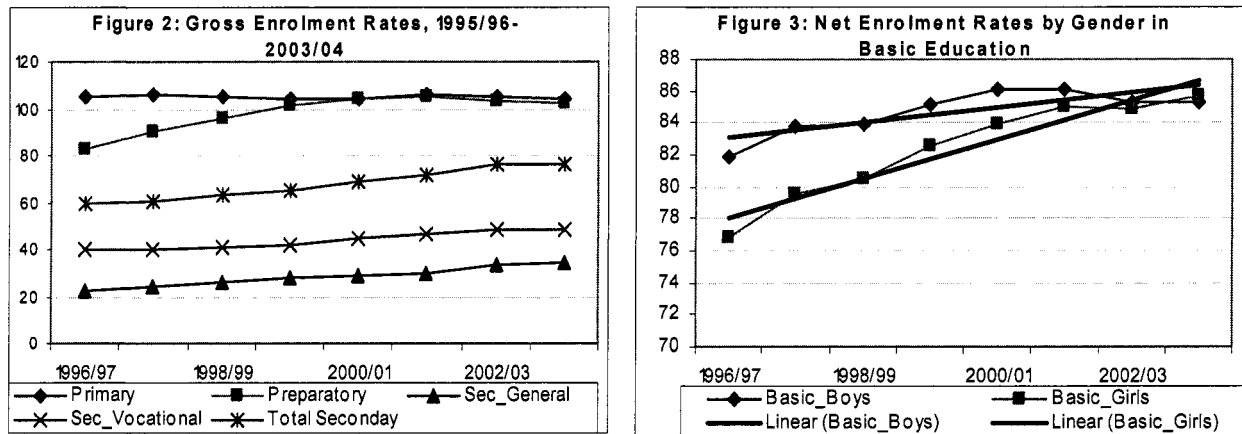
8. The purpose of this report is not to provide answers to, or remedies for, the challenges of inequality and poor educational outcomes. Overall, the report’s objective is to provide analytic support for the MOE’s five-year strategic plan largely by documenting and analyzing the wide dispersion of educational outcomes in Egypt (between, for instance, poor and non-poor, low achievers and high achievers, etc) as a key theme that is relevant as a national issue. Evidence presented in the report should be sufficient to build that case, however, the report should also be considered exploratory. In fact, one of the most important and consistent findings is the crucial need to improve the data collection and availability needed to perform the more precise policy-analytic work needed to more precisely diagnose problems in the Egyptian education system, let alone prescribe the most promising reform remedies. We conclude with “policy options” rather than recommendations or “remedies” in order to highlight and organize some of the principle findings of our analytic work, as well as to explore their likely implications. These policy options dovetail closely with the strategies and policies proposed and highlighted in the MOE’s own Strategic Plan.

CHAPTER 2. ENROLLMENT AND INEQUALITY

9. Egypt’s education system is the largest in the Middle East and North Africa (MENA) region and grew rapidly during the 1990s. At the pre-university level alone the system enrolls over 16 million students and employs over 1.2 million workers, of whom around 800,000 are categorized as teachers. Total public spending on education is high by international standards (5.9 percent of GDP and 19 percent of total public spending in 2002/03). Total private costs of education, most of which is for students in the public system (for private tutoring, textbooks, school fees, uniforms, supplies, etc.), amount to an additional 3.7 percent of GDP investment in education, and has been rising for a decade.

10. As a result of such high public investment, during the past decade the government achieved increases in enrollment rates that would have been remarkable even without the increase in student population. Enrollment in basic education for both girls and boys is now nearly universal, and secondary and tertiary enrollments are rising. Gross enrollment rates (GER) for primary education (grades 1-5) stand at 98 percent, the preparatory level (grades 6-8) at 82 percent, and the secondary level (grades 9-12) at 66 percent, which are robust compared to similarly situated middle income countries (Figure 1). Moreover, the speed with which the gender gap in basic education was closed is not only impressive but historic. In this sense, Egypt has accomplished much in the gender aspect of equity. In addition, higher education enrollment is growing rapidly with a GER currently at 30 percent.

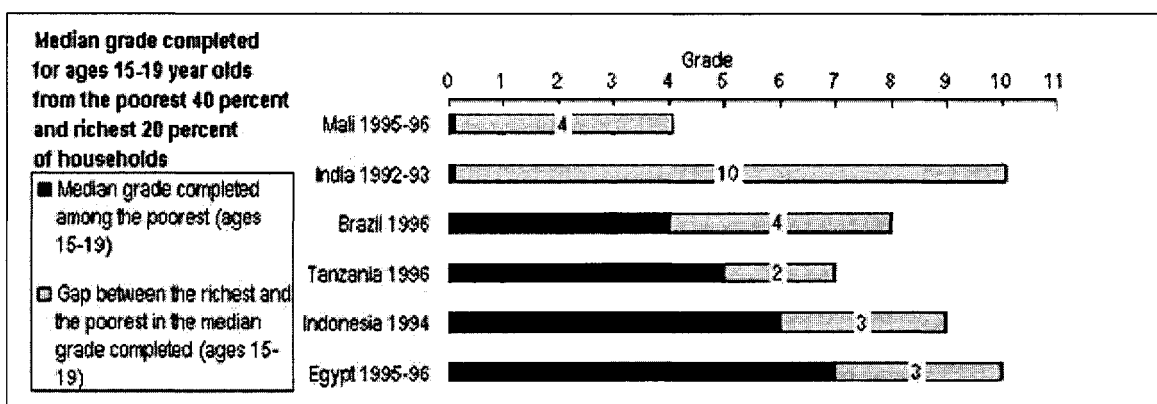
Figure 1: Gross and Net Enrollment Rates in Egypt by Level, 1996-2003



Source: Ministry of Education.

11. There is additional evidence that overall, in terms of access and attainment, Egypt is a moderately equitable country. In fact, work based on Filmer (1999) shows that, even *before* Egypt’s expansion in access, attainment by the poor was comparatively equitable.

Figure 2: Median Grades Completed for Ages 15-19 Year Olds, Mid-1990s



Source: World Bank (2007). Education attainment and enrollment around the world

The World Bank reports⁶ “There are enormous differences across countries in the gap between the educational attainment of the rich and the poor, the ‘wealth gap.’ While in some countries the difference in the median years of school completed by the rich and the poor is only one or two years, the wealth gap reaches as high as nine or ten years in some countries.” In the mid 1990s, Egypt’s ‘wealth gap’ was modest at 3 years. The World Bank’s (2007a) MENA Education Flagship Report—*The Road Not Traveled: Education Reform in the Middle East and North Africa*—also provides encouraging results about Egypt’s relative educational achievements.⁷ Of the 14 countries analyzed, Egypt was a top performer in access and average in terms of a composite index of educational outcomes that summarizes performance along a number of different dimensions. The report gives the following overall assessment: “whereas Egypt has reached universal primary education and reduced the gender gap at all levels of instruction, literacy levels remain relatively low and the quality of education could be improved.”⁸

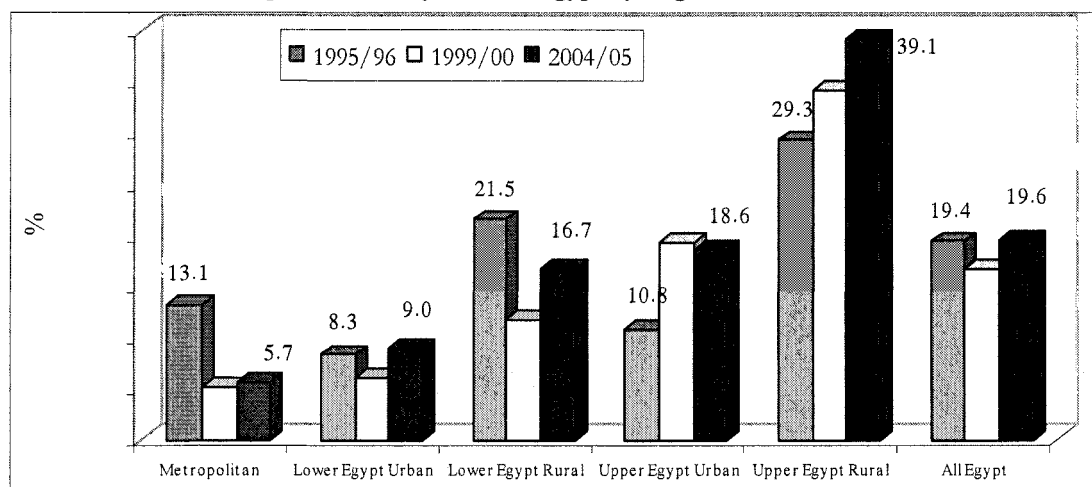
12. These aggregate figures and results, however, mask differences among levels of education and regions, and do not necessarily use the best measures of outcomes for determining either quality or equality. In the last decade, while overall poverty has remained almost unchanged (poverty slightly increased from 19.4 percent in 1995/96 to 19.6 in 2004/05), it has grown worse in rural Upper Egypt (from 10.8 to 18.6 percent in urban Upper Egypt and from 29.3 to 39.1 in rural Upper Egypt, over the same period).

⁶ Source: World Bank (2007). Education attainment and enrollment around the world: <http://web.worldbank.org/external/default/main?menuPK=1460753&pagePK=64168176&piPK=64168140&theSitePK=1460718>

⁷ Note that throughout the report, World Bank (2007a) is generally referred to as “the MENA Education Flagship Report,” or some variant of that term.

⁸ In terms of equity, the flagship report focuses almost entirely on gender parity. Our exploration of educational equality in Egypt is considerably broader.

Figure 3: Poverty Rates in Egypt by Region 1995/96-2004/05



Source: Leithy (2006) based on Egypt Household and Income Expenditure Survey 2005⁹

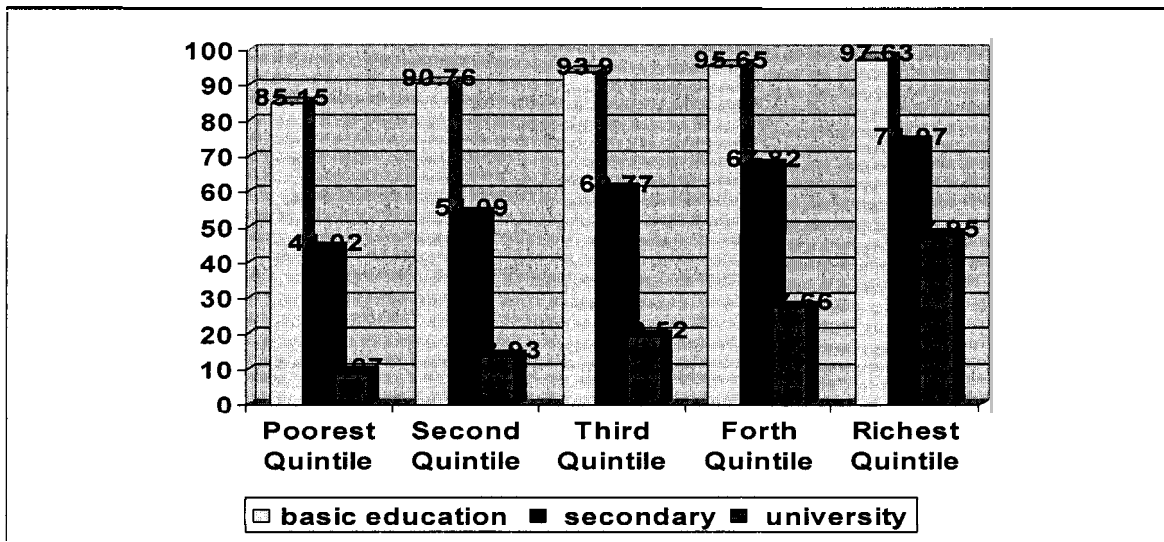
13. As Figure 3 shows (based on the findings of the Household Income and Expenditure Survey), after improving between 1995/96 and 1999/2000 (down from 19.4 to 16.7 percent), overall poverty in 2004/05 is back to almost the same level as it was in 1995/96, 19.6 percent. Only metropolitan Egypt registered a reduction in poverty up to 2000 that was not reversed somewhat. In fact, poverty in Upper Egypt is worse than it was ten years ago. More than 50 percent of Egypt's poor live in the Upper rural region. In sum, almost 14 million individuals could not obtain their basic food and non-food needs—up from 11.5 million in 1995/96 and 10.7 million in 1999/2000.¹⁰

14. While it is true that increased access and improved educational quality reduces poverty, this dynamic is not responsible for these recent trends in poverty in Egypt. The timeframe is short, and there are too many other factors (such as poor economic growth and labor market opportunities) that likely drive the trends. However, when poverty increases, the challenges faced by an education system also increase (through its potential impact on enrollment, readiness to learn, and ability to pay). It is important to understand that policies and reforms today are being made in an environment where poverty is high and has been growing, as well as growing unevenly across the country. Thus, both the challenges and the stakes are high. Failure to deliver improvements in educational outcomes soon and equitably will impair prospects for sustained economic growth through the middle of the 21st century.

⁹ In 2004-2005, the total sample was 47,095 households, of which 21,995 in urban and 25,100 in rural areas, total of 207,030 individuals were surveyed. The 1995/96, 1999/2000 and 2004/2005 HIECS were based on the Censuses sample frames and the questionnaire design and administration were similar across the three surveys.

¹⁰ Some analysts have suggested these figures are driven by clustering of populations just above and below the poverty line as well as where the poverty line is drawn (e.g., should it be \$2 per day or some other level?); the context, however, for this report is clear: Egypt is a relatively poor country and in many areas poverty levels have not been *improving*.

Figure 4: Enrollment Rates in Egypt by Income Quintile and Level, 2004/2005



Source: Leithy (2006).

15. As Figure 4 shows Net enrolment rates by level of schooling across income quintiles, which not surprisingly reveals some inequality at all levels, with the enrolment gaps between income quintiles rising with the level of education. While it is reasonable to ask “How does this kind of equality in Egypt compare to other countries?” we are not currently able to do so with great precision. Nevertheless, our discussion of the results (here and in the next chapter) attempts to put the trends in perspective.¹¹

16. On a positive note, these results show that inequality across income quintiles is lowest for primary enrollment. Stated differently, secondary enrollment drops twice as fast as primary enrollment across quintiles, and tertiary drops more than three times as fast when household income decreases. In addition, in the past 10 years, net enrolment has improved for all income groups, but the improvement has been strongest among the poorest two quintiles and especially in secondary education.¹² This highlights Egypt’s success in primary schooling in terms of closing the access gap between rich, middle class and poor, while raising the challenges noted for secondary and post secondary.

17. The trends for secondary education in Figure 4 are, we will argue, more worrisome. A gap of 30 percentage points exists between the richest and the poorest quintiles (74 percent - 44 percent), combined with a similar trend for all quintiles, means that the gap between rich and poor in secondary school attainment is large and consistent across the income distribution. While the gap at the university level might be larger, it is nearly impossible to narrow that gap without first, or at least concomitantly, narrowing the gap at the secondary school level.

18. While we cannot easily compare these results with other countries in MENA, a recent international study by UNESCO on educational equity in the world’s 16 most populous countries placed Egypt in the middle range of their sample of large countries with respect to equity of

¹¹ Ongoing work at the Bank may soon allow comparison of such HIES across the MENA region, but it is not yet available.

¹² Note that these findings are based on results not shown, comparing the data in figure 4 to similar data from 1995. The results are available upon request.

primary and secondary enrolments across regional jurisdictions (governorates in Egypt). This indicates that while there is room for improvement, other equity concerns (aside from pure geography) are more important.¹³ However, when the study adds information on the wealth of the governorates, the results for Egypt are worse—it is one of three countries in the sample that have significantly higher enrolment rates in wealthier regions (their measure of equal education opportunity) at both the primary and secondary levels (Sherman and Poirer, 2007).

19. The UNESCO study methods compared enrolments by regional units (i.e., governorates) which we believe is less relevant and less accurate than the analysis we present which is at the household level. Nevertheless, the point is well taken: primary and secondary enrolment rates in Egypt are positively associated with wealth. Our household level data support this finding and highlight the more serious nature of the inequality at the secondary level.

20. These differences in post-basic enrollments by income groups shown in Figure 4 are, thus, visible signs of an education system that is not likely providing equal educational opportunities or achieving equitable outcomes.¹⁴ In Chapters 3 and 4 we will explore in greater depth the inequalities in outcomes. We describe the differences in outcomes between income groups better than we can explain their underlying causes. For instance, we cannot *prove* that the educational system per se *causes* the inequalities we describe.¹⁵ We marshal the best data available and the conclude that overall the evidence strongly suggests that there are fundamental factors in the education system as a whole that impact differences in student achievement and that these differences are not likely based solely on differences in socio-economic status of the students. We attempt to shed some light on the myriad sources of the gap: Is the biggest problem access to school requiring additional construction? Poor quality and low rates of return that fail to retain students? We do not have definitive answers; however, given the link between knowledge acquired in schools and the ability of individuals and economies to compete in a globalized society, the inequality of enrolments, outcomes, and low achievement in general, deserve particular attention because they threaten Egypt's medium- and long-term growth potential and competitiveness.

¹³ The 16 countries are Argentina, Bangladesh, Brazil, Canada, China, Ecuador, Egypt, India, Indonesia, Mexico, Nigeria, Pakistan, Peru, the Russian Federation, South Africa, and the United States. Clearly this is not the most relevant set of comparators for Egypt in many respects, but given the paucity of data on relative equity across countries, the results are instructive and worth noting.

¹⁴ Note, it is possible for us to construct a gini coefficient of educational enrolment and attainment; however it is not possible for us to construct a gini coefficient for educational outcomes or expenditure. We do not view the gini coefficient of enrolment or attainment to be any more insightful than examining Enrollment Rates in Egypt by Income Quintile and Level as we do. For one, it would be more difficult to interpret the actual measures and second, it does not allow as an intuitive insight into the differences across income groups. However, the MENA flagship report does present gini-coefficients for Egypt and other countries and shows that in terms of attainment, inequality in Egypt is comparable to the MENA region, which lags behind East Asia and Latin America. Sherman and Poirer (2007), too, calculate a gini coefficient for primary and secondary expenditure per pupil across governorates and find similar results—that Egypt is 8th out of the 11 countries for which they can do the calculations.

¹⁵ Such causal proof is indeed very rare in the literature even for developed countries with far fewer data limitations. Hanushek's (1986) definitive overview aptly states that "Although the educational process has been extensively researched, clear policy prescriptions flowing from this research have been difficult to derive." Hanushek, Eric A., "The Economics of Schooling: Production and Efficiency in Public Schools," *Journal of Economic Literature* 24 (September 1986), 1141–1177. For but one of many examples of studies that do successfully derive causal inferences from school conditions and government policy and control for family background, see Lorraine Dearden, Javier Ferri, and Costas Meghir, THE EFFECT OF SCHOOL QUALITY ON EDUCATIONAL ATTAINMENT AND WAGES, *The Review of Economics and Statistics* 84(1), 2002: 1-20. Clearly Egyptian policy makers cannot wait for a definitive study proving these causal links, although some thought should be given to gathering the kind of data necessary to do so over the next several decades. For now, decisions must be made on imperfect information. Chapters 3 and 4 attempt to inform such decisions.

CHAPTER 3. DISPARITIES IN EDUCATIONAL OPPORTUNITIES, QUALITY, AND ACHIEVEMENT

21. As discussed in the previous chapter, Egypt's achievements in improving general access and years of educational attainment are impressive and put the country on a clear trajectory to achieve equality between the poorest 40% of the population and others in terms of the quantity of schooling received. There is room for improvement, but it seems clear that quantity is less an issue for Egypt than quality—as well as high levels of poverty. In fact, Egypt suffers poor quality schooling for much of its population (across income quintiles), but even in that context, there is worrisome inequality in educational outcomes.

22. In 2004, Egypt participated for the first time in the Trends in International Mathematics and Science Study (TIMSS) for 8th grade, providing an opportunity to view educational achievement in Egypt on an internationally comparative basis. While some might interpret TIMSS scores as outcomes (which of course they are), increasingly analysts interpret such results from the major international evaluations (i.e., TIMSS, PISA, and PIRLS) as proxies for school quality¹⁶ because they measure valuable cognitive skills and given the strong impact of such skills on individual earnings they are among the best and most important measures of both outcomes and school quality.

23. While we interpret the results primarily as indicators of achievement, we pay particular attention to the variation in outcomes between students and schools, and the implications for the need to enhance quality. We do not have good evidence on how much of the existing variation comes from schools (for instance differences in school quality) versus other factors. Indeed, we do not have any easy way even to do such decomposition¹⁷. Following Hanushek and Woosman (2007), we believe it is sufficient to say that school quality can affect these outcomes (regardless of what generated the variation in the first place). There is, in fact, ample evidence in the literature for both developed and developing countries on that statement, and we believe this is sufficient to motivate the development of policies designed to improve school quality in Egypt—particularly the policy issues of trying to ameliorate the differences in achievement between different students.

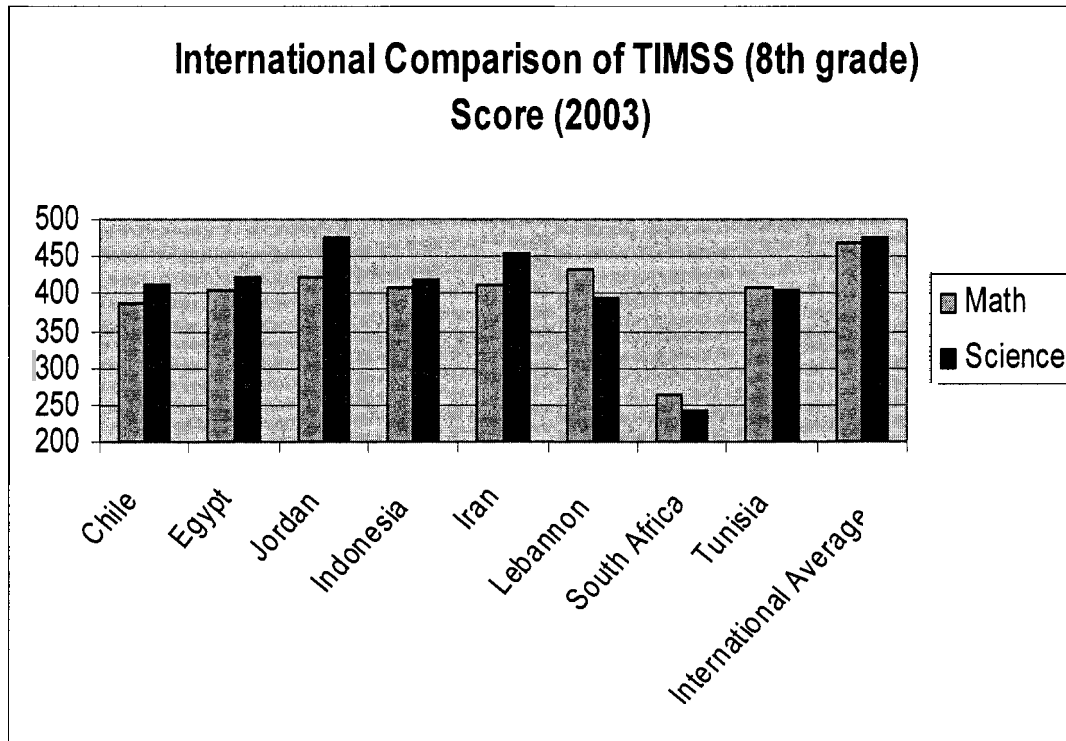
24. Egypt scored an average 406 in math and 421 in science. This placed the country's 8th graders below international averages (467 and 474, respectively), as well as below Jordan (424 and 475); on par with Indonesia (410 and 420) and Tunisia (410 and 404); and ahead of the Philippines (378 and 377) and all participating countries from Sub-Saharan Africa.¹⁸ Results were mixed in comparison to Iran (411 and 453) and Lebanon (433 and 393). Overall, Egypt was above average for the MENA region.

¹⁶ See Hanushek (2004) and Hanushek and Woosman (2007) for a justification for using internationally standardized test scores and cognitive skills as a proxy for school quality. We do not have the capacity to employ the re-scaling method of Hanushek and Woosman (2007) that allows a closer interpretation of these tests scores as measures of school quality and as they note. "Cognitive skills may be developed in formal schooling, but they may also come from the family, the peers, the culture, and so forth." Nevertheless, they show a strong relative relation between such test scores and school quality and state that "Quality schools can lead to improved educational outcomes. Moreover, from a public policy perspective, interventions in the schools are generally viewed as both more acceptable and more likely to succeed than, say, direct interventions in the family."

¹⁷ In fact, these statements are true about the general literature on educational production functions for both developed and developing countries, not just for Egypt. It is, clearly, beyond the scope of this study to go into great detail about the such empirical debates in the literature.

¹⁸ Our international comparisons in this Chapter are constrained by those countries that have participated in TIMSS. Most emphasis should be given to the MENA countries and the international averages, but we report the remaining results for some additional perspective.

Figure 5: International Comparison of TIMSS scores (2004)

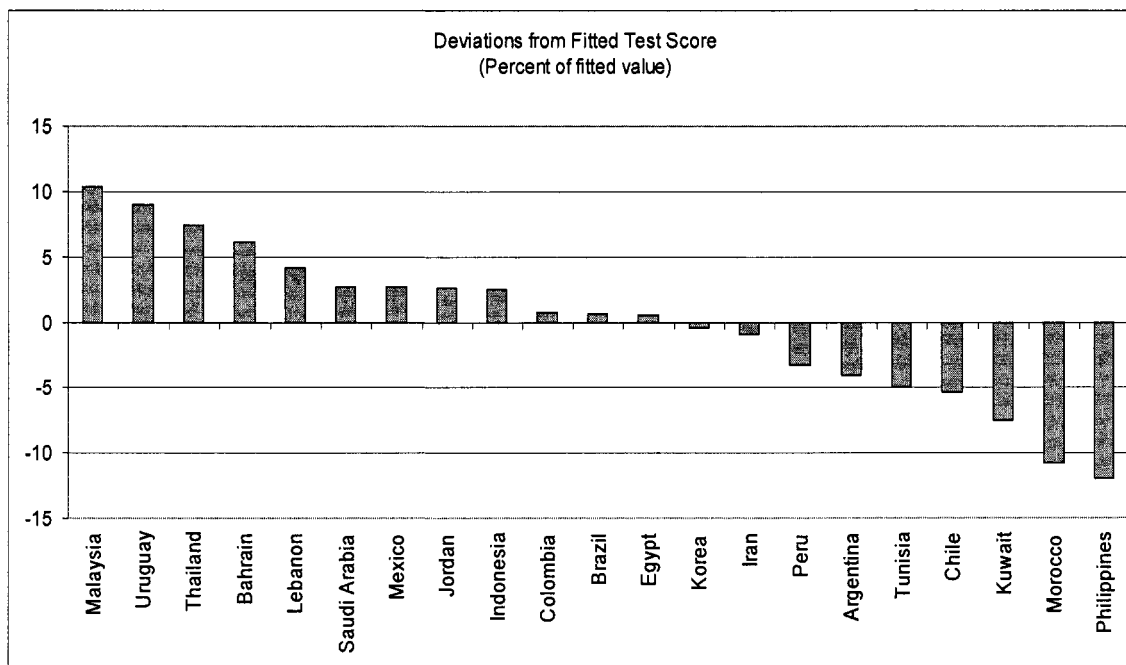


Source: TIMSS 2003 results: <http://timss.bc.edu/>

25. This is clearly an encouraging entry into this important international testing arena. However, simply comparing scores across countries does not necessarily reflect the different challenges countries face with respect to underlying conditions known to affect educational achievement, such as poverty and level of overall economic development. Shown in Figure 6, deviation from the fitted test score for Egypt suggests that the education outcome (TIMSS score) of Egypt is in a reasonable range. It implies that Egypt is not performing poorly for its size of GDP per capita and level of secondary GER. Rather, the test score is slightly above the theoretical fitted value. When compared with other Lower Middle Income Countries, Egypt scores lower than Indonesia, Jordan and Lebanon, whereas Egypt displays higher performance than Chile and Philippines.¹⁹

¹⁹ For the selected 20 countries which cover Asia, Latin America, and MENA (including GCC), regressions are done to explain the test scores (all available TIMSS/PISA scores average) by GDP per capita (PPP current international \$) and secondary GER. In doing regressions, regional characteristics are controlled. Results show that coefficients on GDP, LAC, GCC are statistically significant. Then, based on the regression results, fitted value are calculated, and the charts shows difference between fitted and actual test scores.

Figure 6: Deviation from fitted test score (percent of fitted value)



Source: Staff calculation based on average TIMSS, PISA scores (Carnoy, 2006) and GDP (2003) and secondary GER (2003) data obtained by World Bank Edstats.

26. Yet, these results do not indicate that Egypt's education system is performing well. More importantly, this still leaves overall student performance at a low level in international competition -- and will by the best available evidence threaten Egypt's development prospects. Indeed, Egypt's education system is not currently producing results sufficient for achieving international competitiveness or enhancing equity, especially considering the level of investment in the education sector. TIMSS decomposes the mean scores by defining four benchmarks for grouping student performance—Low (400), Intermediate (475), High (525) and Advanced (600). As shown in Figures 7 and 8, among Egyptian students, only 6 percent were “High” performers in math and 10 percent in science, but over 40 percent failed to achieve even the “Low” benchmark. By comparison, in Iran 77 percent achieved the Low benchmark in science and in Lebanon, 68 percent achieved the Low benchmark in math.²⁰ In sum, Egypt's low end is both low and large, creating a sizable cohort of students not fully prepared for the global economy.

²⁰ Egypt is clearly poorer than, for example, Iran (GNI/capita atlas method of 1250 and 4440 GNI/capita at PPP while Iran 2770 and 8050, respectively. (WDR 2007). This is an important consideration for such results. Thus, we spend significant time in this section attempting to examine the significance of the inequality in outcomes Egypt from as many angles as possible to disentangle, if at all possible, the extent to which the inequality stems from the education system as opposed to the underlying socio-economic status of students and families..

Figure 7: Achievement at International Benchmarks in Math

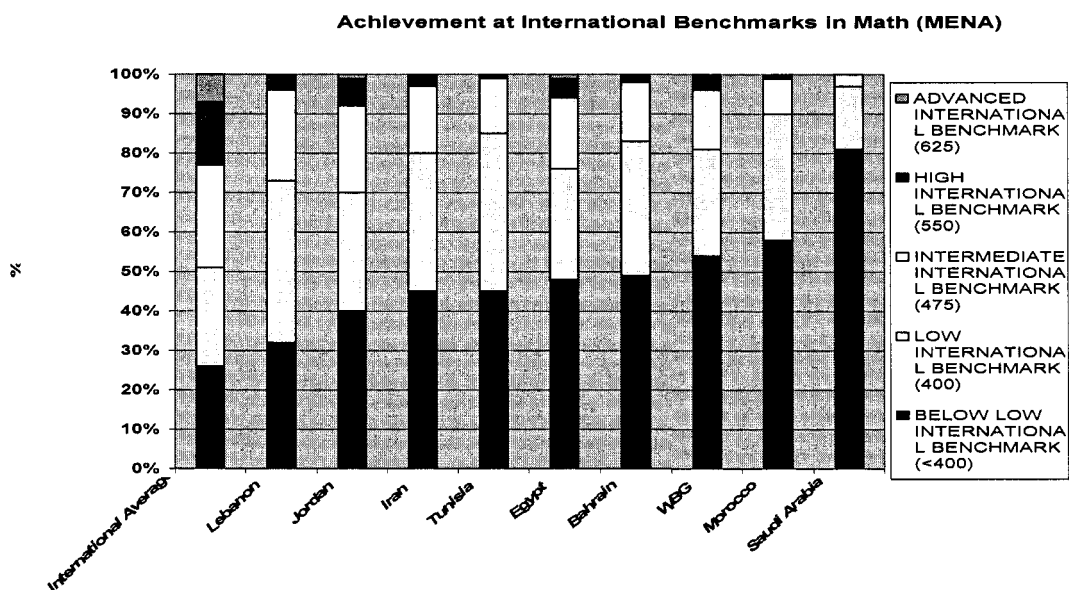
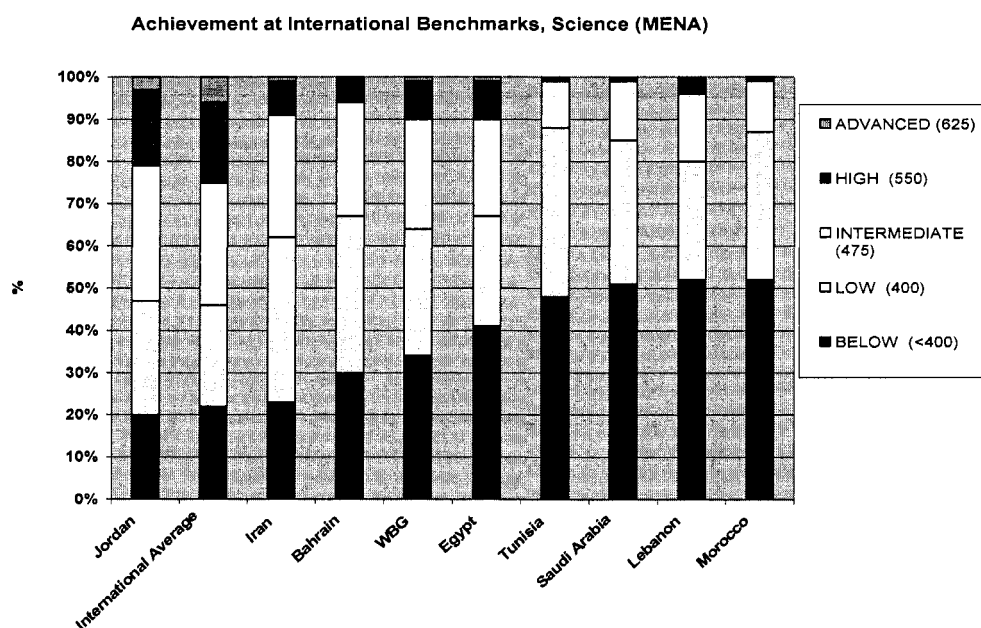


Figure 8: Achievement at International Benchmarks, Science



27. Figure 9 dramatizes these results. Among the MENA countries for which data are available, Egypt's top achievers in science were second best and the low achievers were second worst.²¹ Ideally, a country would want high achievement for all, which could be called high

²¹ In math, according to Abul-Hamid (2005: 11), the low achievers fared better, about average, while the top achievers were about the same (second best), but we do not have the data available to show in a figure. Results are similar for the international dispersion analysis presented next.

achievement with little dispersion. Figure 10 shows that even beyond MENA, in an international context dispersion in Egypt is high, even if average scores are above average for MENA.²²

Figure 9: Top and bottom achievers across countries in MENA (Science Score)

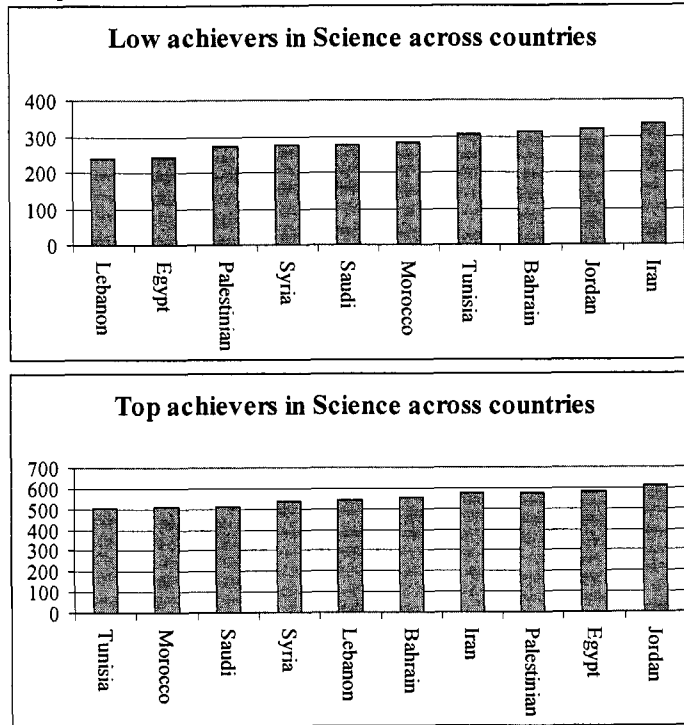
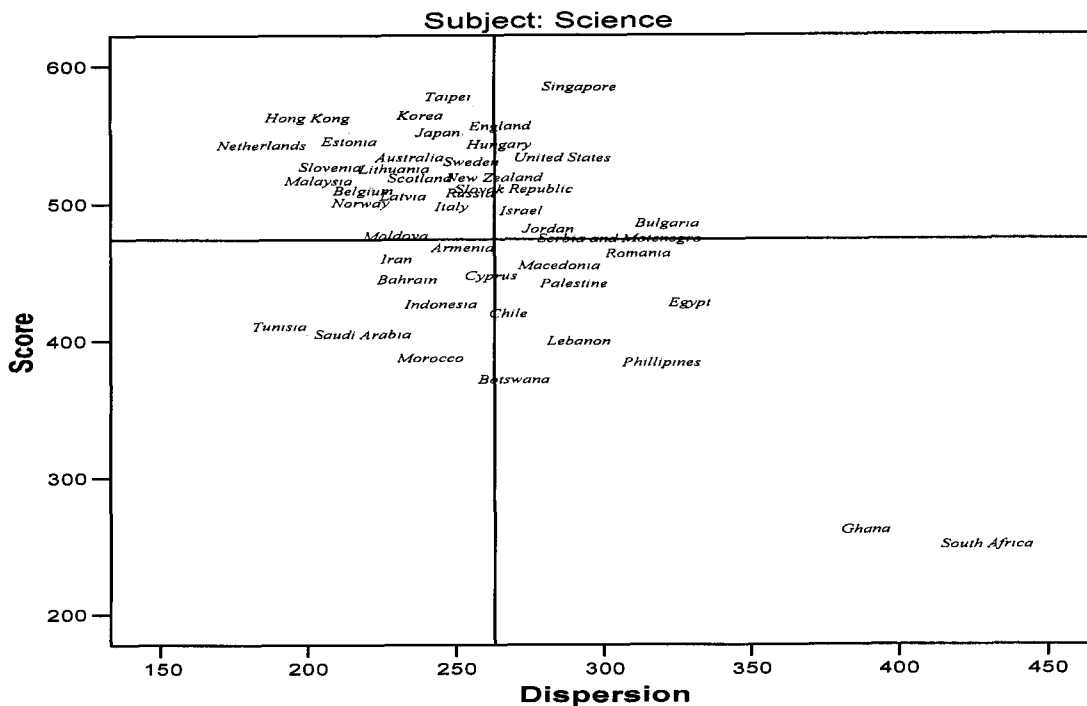
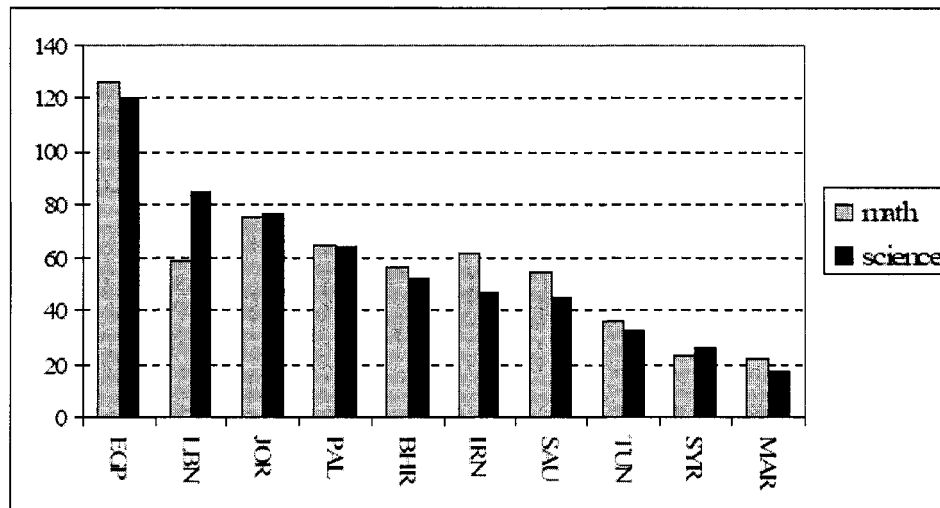


Figure 10: Science Performance and Dispersion between Countries



28. Naturally, in aggregate, low achievers tend to have lower socio-economic status (i.e., higher poverty levels). Figure 11 specifically looks at the achievement gap between “rich” and “poor” students in different countries in MENA.²³ In contrast to data presented in the previous chapter regarding a small wealth gap for years of attainment and access, Egypt’s *wealth gap in achievement* is by far the largest in MENA.²⁴

Figure 11: Difference in performance between the rich and the poor students across countries without any controls



Source: Abdul-Hamid (2005)

29. Finally, Abdul-Hamid (2005: 18, 41) performed a rough analysis of the combined impact of student achievement and attainment on a country’s GDP per capita. The results show Egypt is under performing and that productivity could be increased if the percentage of students reaching the high and advanced international benchmarks increased and those at the very low international benchmarks [decreased].” Furthermore, this analysis shows that variation in Egypt is the highest in MENA *both* between students and between schools. While we cannot, as mentioned earlier, disentangle the causes of such variation and in particular, we cannot separate out the impact of differences in school quality, we do believe that taken together the evidence presented above strongly suggests that there are fundamental factors in the education system as a whole that impact differences in student achievement and that these differences cannot simply be explained away based on differences in socio-economic status of the students.

30. Performance on the TIMSS can be disaggregated and analyzed by subject and cognitive type. For instance, overall, performance in science is better than math, and better in chemistry than in earth science. Perhaps the most important result in this realm is that performance is better regarding the knowledge of facts and procedures and relatively weaker in those assessing reasoning, higher order thinking, conceptual thinking and cognitive ability, the very skills that are in demand in the modern labor markets. Similarly, in math students are better in using numbers than they are in using or interpreting data. These results are consistent with our argument that the

²³ Using data collected through the TIMSS, socio-economic status of students is based on an asset score derived on a vector of home resources and parental education (Abdul-Hamid, 2005: 37). These assets scores presumably provide relatively comparable measures of SES across countries.

²⁴ When the comparison is broadened beyond MENA countries, and broadened to inter-country and not just intra-country comparisons, Egypt still has the largest achievement gap between rich and poor across countries.

Egyptian education system is based predominantly on various national curricula and testing systems that are not geared towards producing the kinds of skills necessary to compete in a global economy.²⁵

31. The MOE is also able to produce approximate scores for sub-samples of different kinds of schools in Egypt (Table 1). Care must be taken in interpreting these results since: (i) the sample within school groups may not be representative; (ii) they likely reflect underlying student characteristics as much as school quality; (iii) similar sub-groupings in other countries would likely show higher scores as well; and (iv) the implications of these results for larger reform efforts are unclear—for instance, the success of these categories of schools may not be replicable in a manner facilitating scaling up.

Table 1: Trends in International Mathematics and Science Study (TIMSS) for 8th grade, Egypt, 2003

	National Average	Private School (Language)	Public Experimental Schools (Language)	Private Arabic Schools	Public Arabic (Government) Schools	Afternoon 2 ⁿ Shift
Mathematics	406	529	509	500	401	389
Science	421	528	506	515	417	403

Source: TIMSS 2003 results: <http://timss.bc.edu/>

32. Nevertheless, the results are instructive: Egypt has schools, particularly a group of experimental public schools with a more decentralized administration that are on par with or above international averages. These experimental “language” schools, though, are less than one percent of the TIMSS cohort, and thus provide an example of the kind of difficult strategic decisions the MOE faces between equity-enhancing strategies and those that bolster the high-end for international competitiveness. Experimental language schools are better housed and equipped than the regular schools, in some ways (e.g., computers) dramatically so. Instructional time is longer and they pay incentives to recruit better teachers. However, they are overwhelmingly located in areas with more than 500,000 population and they enroll very few disadvantaged students – even fewer than private schools. The students’ parents have a very high educational level (more than 81 percent of the mothers have a first or higher degree), which have been shown in other studies to be a ‘supportive’ variable in the educational process. Their homes have many more books, and they are more likely to have computers (Caroll, 2006). In terms of process and pedagogy, however, they are not that much different from the regular schools²⁶.

33. In addition, there are many students in government schools who do well. In fact, the top quartile of students in government schools score about as well as the top three quartiles of the experimental language schools. These results may hold more information for scaling up quality enhancing reforms.

34. Since Egypt has participated only once in the TIMSS by the time this report was written, one cannot derive trends in quality improvement from the results. However, some relatively recent results from national achievement tests point to improvement in quality of instruction in the overall

²⁵ Note that in this paragraph we are not discussing the benefits or pitfalls of a national curriculum (or curricula) per se—such details, and how different curricula are manifested in different kinds of schools, are clearly the purview of the MOE itself—but rather we are discussing how the particular curricula in Egypt appear to have impacted performance against international benchmarks.

²⁶ They do not exhibit a great number of characteristics of effective schools. For example, they make if anything less use of group-work, project-based or experimental activity, or remedial or enrichment work than the regular schools.

system.²⁷ As shown in Table 2, improvements in mean scores in mathematics, Arabic language and critical thinking skills were greater and statistically significant for 5th grade students. Improvement in student learning outcomes is greater in mathematics, followed by Arabic, and is lowest in critical thinking. However, preliminary data also show achievement scores in Lower Egypt (less disadvantaged) to be higher than in Upper Egypt (more disadvantaged); though some of the poorest governorates, such as Beni Suef, did show marked gains in achievement scores.

Table 2: Pre and Post Achievement Test Scores for Fifth and Eighth Grade Students

	Fifth grade		Eighth grade	
	Pre-test	Post-test	Pre-test	Post-test
Arabic	52.23	56.86*	55.48	59.85*
Mathematics	43.20	50.18*	43.78	48.59*
Critical Thinking	48.38	50.84*	56.30	57.05

Note: (*) denotes statistical significance at the five percent level.
Source: Ministry of Education.

35. Inequalities in achievement scores are the ‘outcomes’ of an unequal educational system and, therefore, tell a partial story. These outcome inequalities are also reflected in the students’ educational trajectory in a two-tracked system (general education and VT) as well as in labor market outcomes, as will be shown later. Remarkably, all of the TIMSS results discussed earlier—and the high level of dispersion in outcomes between high and low achievers, rich and poor—relate to scores of 8th grade students, which is *before* most of this tracking and the divide between general and technical education takes place. Until Egypt participates in PISA—which evaluates 15 year olds—we can only postulate that given the tracking, the disparities could grow larger after 8th grade.

Students in the ‘two-tracked’ Education System

36. Analysts and policymakers often conceive of an education system in which students progress from pre-school to primary, then to preparatory, secondary, perhaps post-secondary education and finally into the labor market or some other chosen path of life. However, increasingly analysts discuss important forces that work, conceptually at least, in the opposite direction to support these transitions. For instance, the labor market pulls students through and out of secondary or higher education, which in turn pulls students through pre-school, primary and preparatory schooling²⁸. As we explore inequality of achievement and educational opportunities, we pay considerable attention to this dynamic; we view the most challenging educational policy issues as those that revolve around how the school system, along with other social and economic forces, pulls some students through and leaves others behind.

²⁷ At the onset of the Education Enhancement Project (EEP), and to monitor the impact of EEP activities (especially teacher training on interactive student instruction methods), standardized achievement tests were administered to students in the 5th and 8th grades in mathematics and critical thinking skills in 1997 in project governorates. These tests were re-administered in 2003/04. Achievement tests include tests on five dimensions in mathematics (normal number and operations, fractions and decimals, geometry and measurement, statistics and measurement, and algebra). Critical thinking skills were assessed in terms of improvements in student mastery level in each dimension with respect to recall, comprehension and application. Achievement test results are preliminary and still under refinement. In addition, one must note a caveat that the students being tested are not the same students over time, but rather two separate cohorts. Thus the possibility remains that the improvement in scores comes from the underlying characteristics of the students and not the quality of the schooling they receive. Since TIMSS is a representative sample of schools and students at various organizational and jurisdictional levels, future participation in TIMSS should not share this same data challenge and should, thus, provide insights regarding trends and improvement over time.

²⁸ For instance, see the literature on the discouraged worker effect resulting from fewer available jobs for those of moderate education and skills, e.g. Raffae, D. & Willms, J.D. (1989) “Schooling the Discouraged Worker: local labor market effects on educational participation,” *Sociology*, 23, pp. 559-581

37. What are the underlying forces and trends affecting Egypt's education system? Much stems from the vestige of the social contract established since the socialist regime of the 1950s, in particular, the promise that all university graduates and many secondary school graduates would receive public sector employment (though university graduates got more desirable jobs with career ladders). For decades, the system allowed nearly all general secondary school graduates to gain entrance to a free university education, though the value of this opportunity depended greatly on which university faculty each student earned the right to attend, based on his/her performance on the *Thanawiya Amma (TA)*, which serves as both the school exit exam and the university entrance and placement exam, though a few faculties (e.g. colleges of education) require students to pass oral tests and interviews for admission. Starting in the 1980s, however, recognizing the demographic pressures, the unsustainable promise of public sector employment for university graduates; and assessing the demand for a skilled workforce, the Ministries of Education and Labor began heavily promoting the Technical and Vocational Education and Training (TVET) sub-sector. This set the 'two-tracked' educational system that is in operation today.²⁹

38. Currently, general education students who perform poorly on a 6th grade exam are tracked into vocational preparatory schools and those who perform similarly on a 9th grade exam are tracked into vocational secondary schools. Only about 5 percent of preparatory school students are in vocational education, but that shoots up to over 60 percent by the first year of secondary. General education students who do not perform well enough on the 12th grade TA to enter higher education are given a 'diploma,' but not access to universities. Overall then, the system pulls qualified students through the general education stream, while tracking those who fail into vocational/technical tracks at all three levels of the schooling ladder. Only the best performers gain admission to the most competitive faculties (e.g., engineering). No other criteria aside from the TA are usually considered for admission. Private tutoring, which is discussed later in detail, is used as an essential supplementary learning process to help practice for the TA and attain grades that will ensure admission to higher education institutions. While private tutoring does not, of course, guarantee success on the TA, those who are able to afford good quality private tutoring have major advantages over those who cannot pay.

39. Anecdotal and qualitative evidence, including many interviews with senior MOE officials, suggest that most schools in the TVET track are at best of questionable quality and poorly connected to the needs of employers. These schools are perceived as "a last educational chance for low performing students to enable them to complete their basic education" (Abdel-Latif, Moussa & Dixon, 2006). Vocational preparatory schools do not pay much attention to the remedial needs of many of their students. Thus, the exams that track students into specific education cycles practically determine their later life chances, occupational and income attainment. The rigid tracking system does not allow students to redirect themselves from the vocational to the general (academic) track. As typical in many other MENA countries, plum public sector jobs are reserved for university graduates only.³⁰ These findings are consistent with the argument in the MOE's five year strategic plan, which asserts that:³¹

²⁹ Note that TVET is the common acronym for technical and vocational education and training. For simplicity we will generally refer to "vocational education" as vocational and technical training for students through secondary education—that is, we use "vocational education" to cover all non-general track basic and secondary education. Where necessary, we distinguish between the various kinds of TVET. This differs from the actual usage of the terms in the Egyptian system in which most of the schools in TVET are categorized as "technical schools" and only very few are "vocational."

³⁰ There are some promising TVET programs, or at least some high profile and highly sought after ones, like Mubarek-Kohl, and others initiatives that are working through Public Private Partnerships or donor programs to find models for improvement. How to generalize policy recommendations from these experiences, however, is not yet clear, not least because of the cost of the programs and the need for proper and supportive relationships with industry. More generally,

- “[M]ost technical schools lack qualified staff and necessary equipment and machinery”
- There is “low respect from society for technical education compared to general secondary education, which has fostered a culture that general secondary education is for the elite while technical education is for the poor.”
- “[E]nrolment in technical education is based primarily on the basis of results in the Preparatory Certificate rather than on the bases of student preferences.”
- Modernizing secondary education requires “restructuring the curriculum to maintain balance between general and technical education through building strong general content (Core Curriculum) to provide basic perspectives of knowledge, culture, and skills in all branches of secondary education. Thus, some technical schools will be converted to general, but all technical schools will pay more attention to the academic content of student learning.”
- There should be “an open system which provides possibility of switching from general secondary to technical secondary and vice versa.”

40. Considering how much attention the subject has received, it is both surprising and unfortunate how little good data appear to be available to analyze such a critical aspect of the school system. There is no “smoking gun,” and naturally vocational schools have their benefits and success stories as well. Actually the poor quality and inequities created by vocational schools are difficult to prove with the data sets we have at hand, which show that they enjoy reasonable class size, student/teacher ratios and the same quality of teachers as defined by the MOE.³² Despite these data deficiencies, there are some proxy findings that show that the limited seats of public general secondary school are reserved for the best graduates of the prep schools (competition), who usually also come from a wealthier background.

41. As shown in Figure 12, Egypt has a very high proportion of secondary students in technical and vocational education, compared to some other countries in MENA and other countries to which the government of Egypt often refers for purposes of comparing vocational school systems.³³

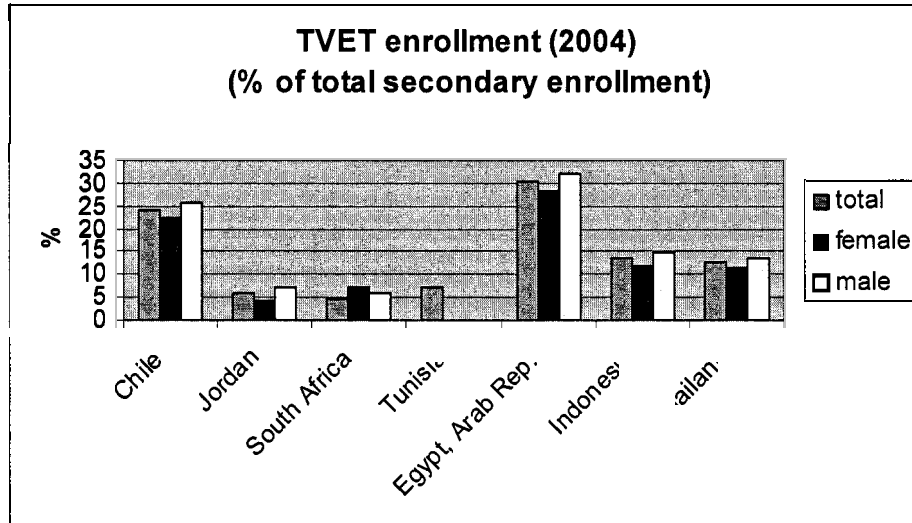
there are five-year schools (as opposed to the more common three-years) that are also well-regarded and sought after, however, these are a very small proportion of the universe of TVET schools.

³¹ All quotations below are from a July 2007 draft version of the MOE’s strategic plan. The final version may differ.

³² For instance, the survey instrument for the HIES remarkably does not allow analysts to differentiate between respondents in general and TVET schools. Just adding this one simple item to the next survey would provide a wealth of important information for analysts and policy-makers alike.

³³ Interview with Dr. Sherif Omar, Member of Parliament and Chair of the Education Committee. In addition, similar international comparisons were highlighted in the Ministry’s recent international conference on education reform. In particular, Chile, Indonesia, and South Africa are being consistently cited and experts and practitioners from those countries have been invited by the MOE to share experiences. The data for this figure are not available for a wide range of countries so the selection of countries is also, in a sense, a convenience sample. Note also that some countries like Chile have pursued more of a European model of secondary school and do display high rates of technical and vocational enrolment. However, even without considering the quality of Chile’s system, the proportion of TVET students is, while high, significantly lower than Egypt’s

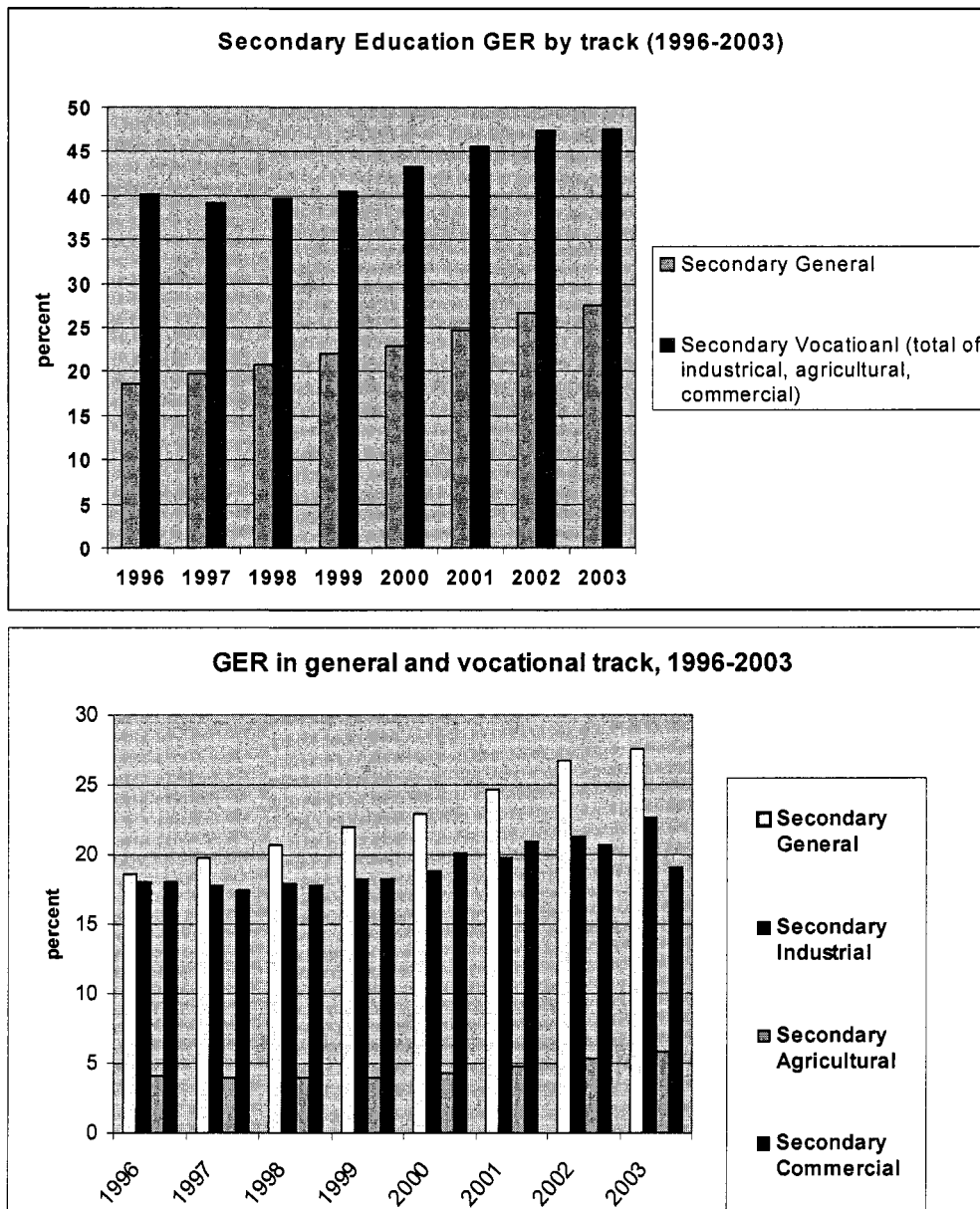
Figure 12: TVET enrollment (% of total secondary enrollment (2004)



Source: World Bank Edstats (2007)

42. Overall, more than sixty percent of students enrolled in secondary education are tracked into TVET secondary schools; with a total secondary education GER of 83 percent in 2003-2004. Typically, only the high-performing preparatory graduates are accepted to general education, nearly all of whom go on to free public university.

Figure 13: Evolution of Secondary GER by Academic Track, 1996-2003



Source: Egypt Ministry of Education (2006)

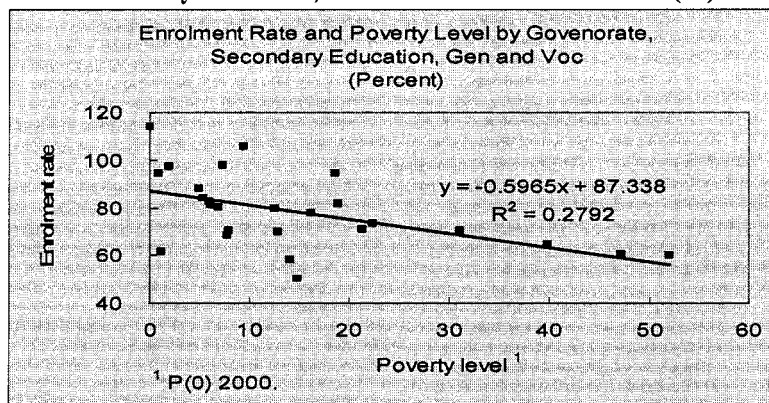
43. The government has set a goal to increase the proportion of students in the general secondary track, and has been doing so successfully. As Figure 13 shows, the share of vocational education students has declined since 2002. However, only commercial education (traditionally where many girls were enrolled) has declined significantly. Thus, while there may be additional movement among categories not captured by these averages, there has essentially been a transfer of students from commercial vocational education to general. We know little about the quality or nature of these conversions. Ironically, some of the resistance to these conversions has come from

the families of TVET students. The reasons are not fully known, but MOE officials say that parents tell them that they fear the cost of private lessons which they understand as a “requirement” in the general education track. In addition, the general education track may require more years of support from a student’s family and may also delay his or her entry into the labor force (in part to provide financial support for the family) or delay eligibility for marriage. These are powerful social forces that must be considered in the design of any reforms.

44. Still, despite the trend of increased *proportion* of general secondary education, the *number* of vocational secondary graduates is increasing very rapidly (as is the number of general secondary graduates); this is very significant because it has implications for the labor market, as we shall see—particularly since few general secondary graduates enter the labor market before going to university.

45. Research shows a large share of the TVET track students are from low income families (ETF 2005). As shown in Figure 14, poorer governorates tend to have larger shares of vocational-track students. The correlation between poverty level and secondary education enrollment rate shows more students are enrolled in secondary education (regardless of track) in the governorates with lower poverty levels. In fact, the wide dispersion of secondary GERs by governorate, even regardless of poverty level, is striking (Figure 15). Examined by track, the figures show that less-poor governorates tend to have more general-track students than poorer governorates. Furthermore, the share of vocational-track students in the total enrollment pool is larger in poorer governorates. This confirms that in the poor regions, students are more concentrated in vocational track. It does not confirm that the poor get lower quality education, but it is strongly suggestive of that conclusion.³⁴

Figure 14: GER (2003-2004) and Poverty Level (2000) by Governorate, Secondary Education, General and Vocational Track (%)



³⁴ In addition, the results mask what is very likely significant heterogeneity within governorates. Governorates are, after all, not necessarily the most appropriate level of observation for such analysis. That is, we recognize the ‘ecological fallacy’ inherent in these comparisons.

Figure 15: GER (2003-2004) and Poverty Level (2000) by Governorate, General Secondary Education (%)

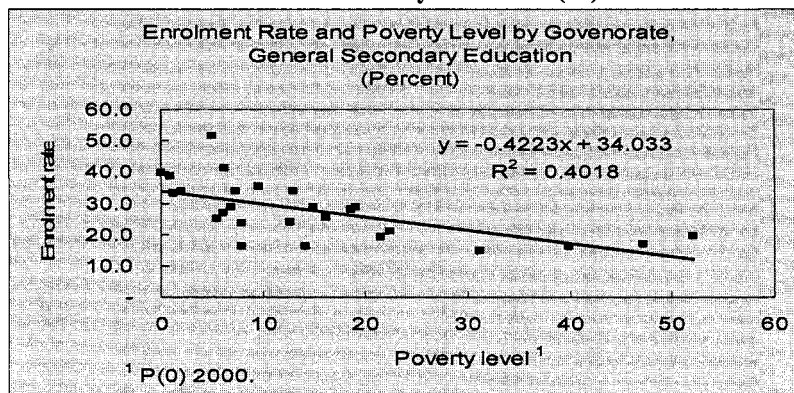
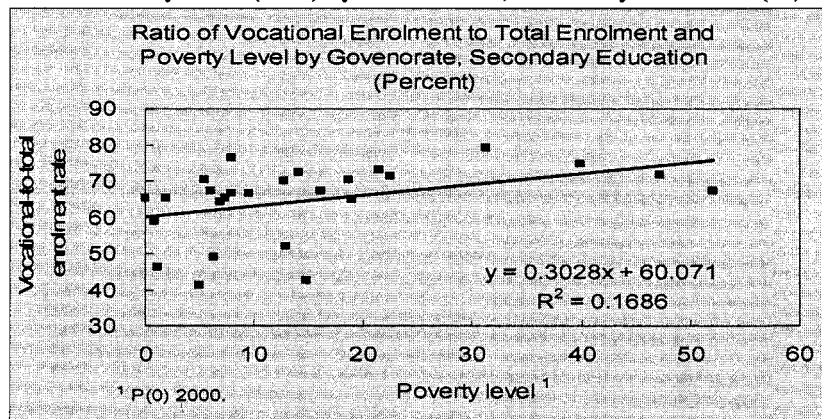


Figure 16: Ratio of Vocational Enrollment to Total Enrollment (2003-2004) and Poverty Level (2000) by Governorate, Secondary Education (%)



Staff calculation based on Egypt's poverty analysis 2002 and education data from MOE (2004)

Labor Market Outcomes

46. By some measures, Egypt's youth unemployment situation is the most difficult in the region—at least in terms of difficulty in entry to the job market. The overall unemployment rate in Egypt is estimated by the government to be just below 10 percent. According to the HIES conducted in 2004, the unemployment rate is estimated at 18 percent among youth aged 15-24. Unemployed youth in fact account for about 70 percent of total unemployment. As many as 90 percent of the unemployed are first time job seekers.

47. Educational attainment affects labor force participation. Assad (2006) shows that the proportion of university graduates is increasing across the three time periods under consideration, but at a slower pace than that of vocational secondary graduates (Figure 17). The male labor market is, therefore, becoming increasingly dominated by vocational secondary school graduates who now make up 30 percent of the male working age population in both urban and rural areas. He asserts that this is “the most dramatic shift in educational composition of male working age population.” The educational composition of the female working age population exhibits similar trends. The share of vocational secondary school graduates has shot up, especially in rural areas:

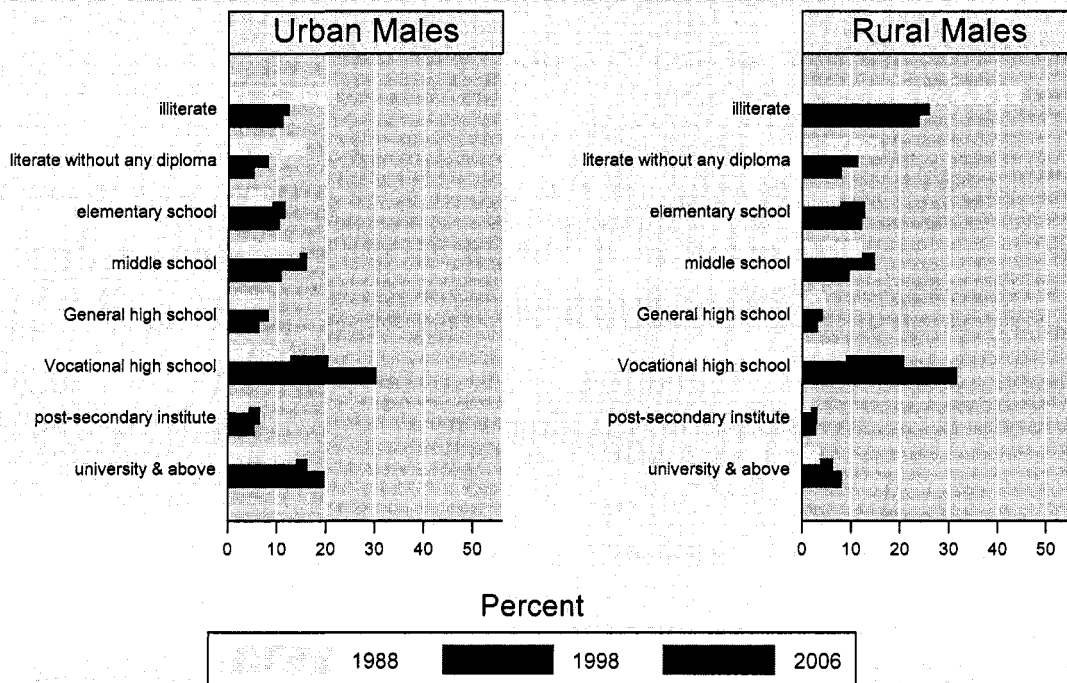
“These compositional shifts have enormous implications for female labor force participation... rates [which] increase significantly once women reach the vocational secondary level. The rapid increase in the share of this educational credential is undoubtedly the most important factor in the large observed increase in female labor force participation of rural women in Egypt.”

48. In addition, technical school graduates (especially males) are finding their first job faster than they were in the late 1990s, and that during the first 3 years after graduation their odds are now about equal to university graduates. Said (2006) notes that “the proportion of the male technical school graduates who obtain a job after 3 years has more than doubled - reaching approximately 60 percent. Nevertheless... the probability of getting a job after a certain time increases at a faster rate among men holding university degrees than among vocational secondary school graduates.” While this is good news in terms of the trend, it is hardly an indication of a well functioning labor market and an education system that effectively supplies what employers want. That is to say, 3 years is a long time to wait for a first job, and 40% have *not* found employment even after 3 years.

49. Again, though, the education system is only partly responsible. Investment climate surveys consistently show that rigid labor market policies are of greater concern to employers than the poor skills of graduates, though they do complain about the poor state of the latter as well.

Figure 17: Distribution of the Male Working Age Population by Educational Attainment and Urban/Rural Location (1988, 1998, 2006)

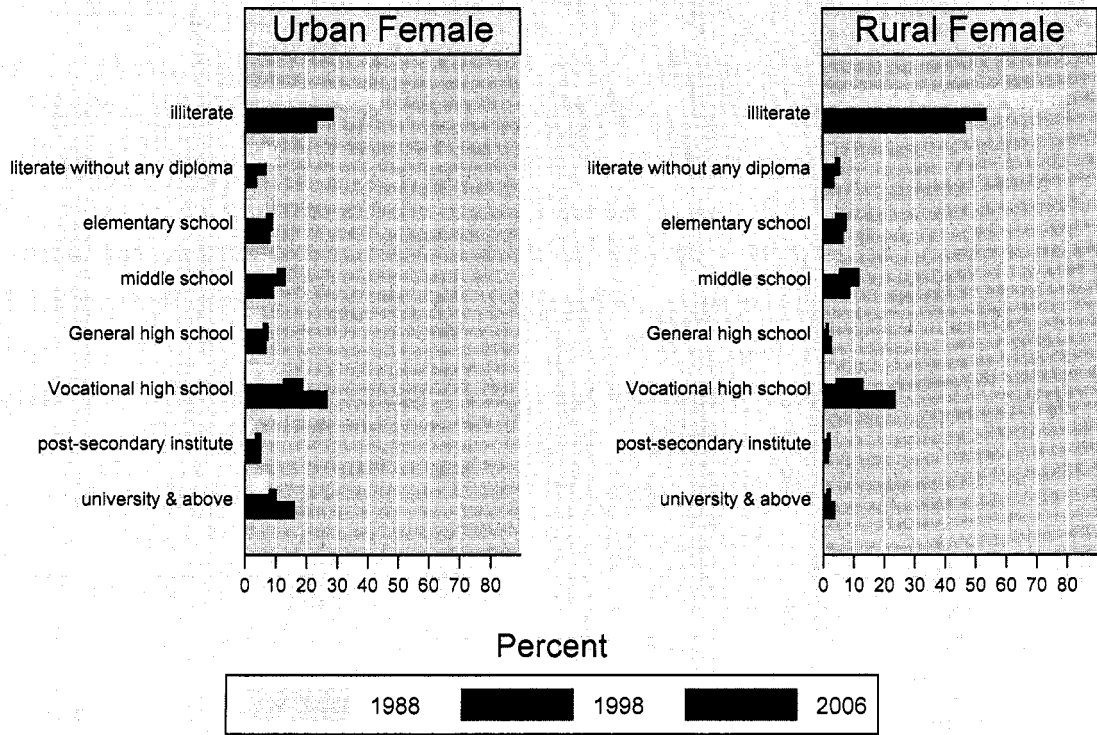
Distribution of the Male Working Age Population by Educational Attainment and Urban/Rural Location, 1988, 1998, 2006



Source: Assad (2006b)

Figure 18: Distribution of the Female Working Age Population by Educational Attainment and Urban/Rural Location (1988, 1998, 2006)

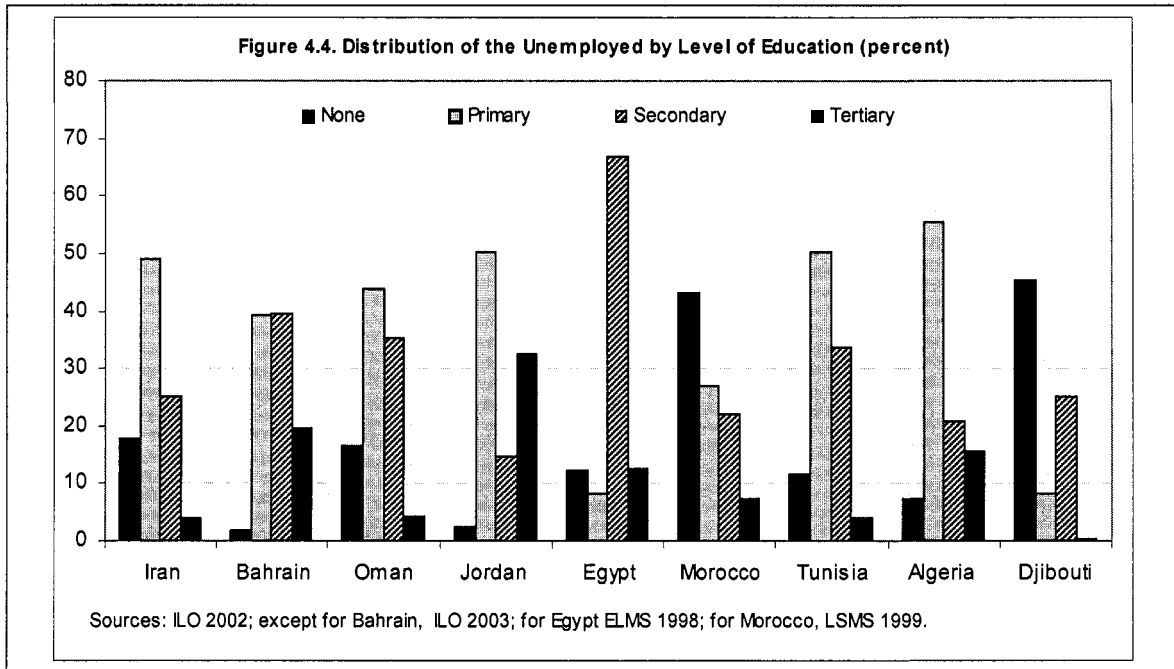
Distribution of the Female Working Age Population by Educational Attainment and Urban/Rural Location, 1988, 1998, 2006



Source: Assad (2006b)

50. While these findings reflect some improvements in outcomes for vocational graduates in terms of employment rates and labor force participation, significant problems remain. First, as shown in Figure 19, the overall ratio of jobseekers with secondary education (the vast majority of who are vocational graduates) is high in Egypt compared to other MENA countries.

Figure 19: Distribution of Unemployed by Level of Education (%)

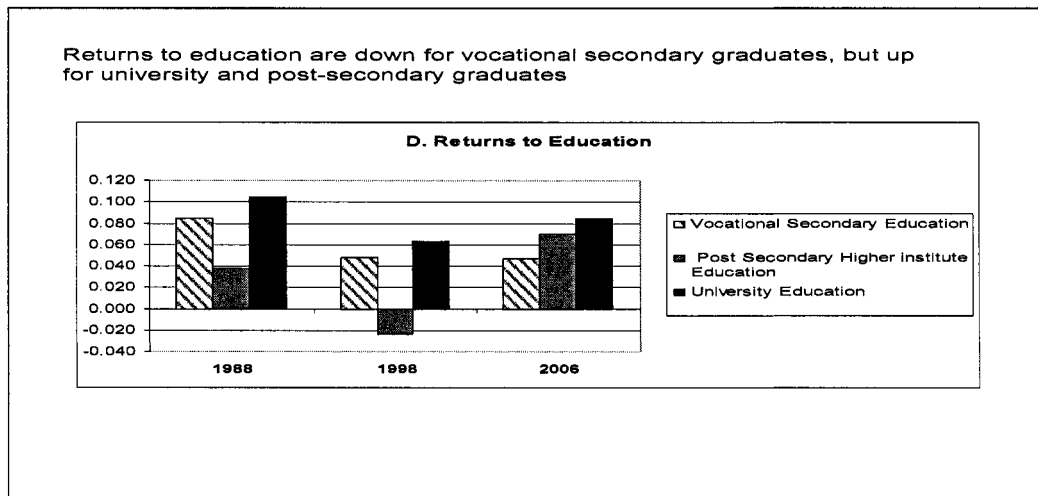


Source: World Bank (2003b)

51. Second, we need to know more about the quality of the jobs the vocational graduates are getting in terms of either pay or career ladders. Additional work from the Population Council (Amer, 2006) shows clearly that young technical school graduates are far more likely to be in the informal sector for their first job; this trend is increasing rapidly for females while public sector job opportunities are drying up. Nevertheless, for technical school female graduates as well as female and male university graduates (all but technical school male graduates) there has been some upward trend in formal sector job entry since 2000.

52. Third, and perhaps most importantly, recent work by the Population Council (Said 2006) finds that in Egypt, private rates of return to education in general are low, but the returns for vocational secondary graduates are not only low, but falling.

Figure 20: Returns to Education



53. Skill mismatch and education quality partly explain the modest economic returns to education in Egypt. Males with some upper secondary education, but no university education, earn only about 6 percent more than someone with no formal education, accounting for age and region of residence. On average, someone with a university degree would earn 37 percent more than the person with no formal education. The returns to university education are higher among females, who earn an estimated 65 percent more with a university degree than with no formal education. This is consistent with observations for the Middle East region where returns to education typically increase with the level of education (Krueger and Lindahl, 2001). But the overall returns are low compared with countries in the region such as Tunisia and Morocco, and low relative to OECD countries. The bottom line is that most secondary school students are tracked into the part of the education system where rates of return are not only lowest, but also falling over time.

"I find no relation between what I have studied and the current requirements of the labor market, and the result is non-employment." --Young man from Upper Egypt.

"Most of my colleagues graduated from the university, and waited for governmental jobs. They waited for a long time without work..." --Shimaa, Egyptian female youth.

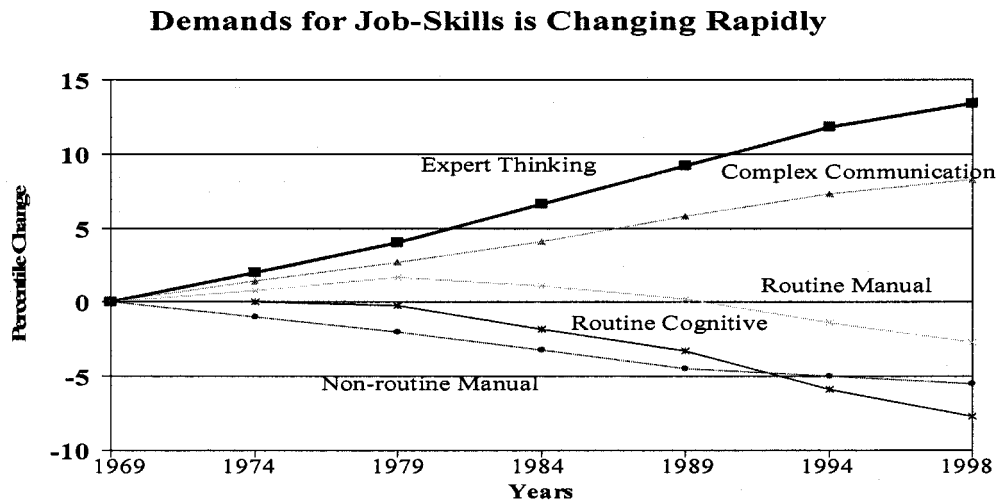
(Focus Groups on Youth in Egypt, World Development Report 2007)

54. International studies on demands for job skills show that competencies such as expert thinking and complex communication skills are preferred over the conventional routine cognitive and manual tasks³⁵ (Figure 21). This emphasis on high-order cognitive skills is one of the major characteristics of a knowledge-based economy; however, TVET in Egypt lags behind in adapting to this trend. The following example, albeit from the United States, may prove instructive for

³⁵ In this analysis, importance of each task in US economy is set to 0 in 1969, value in each subsequent year represents percentile change in importance of each type of task in economy (adapted from World Bank seminar, Juan Manuel Moreno, presentation materials "changes in secondary education: from weakest link to cornerstone" 2005)

Egyptian policymakers in terms of how quickly demands for skills are changing in a labor market that is increasingly globalized.

Figure 21: Changes in Demands for Job-Skills



Source: Autor, Levy, and Murnane (2003) "The Skill Content of Recent Technological Change: An Empirical Exploration," *Quarterly Journal of Economics*.

Source: Autor, Levy, and Murnane (2003) "The Skill Content of Recent Technological Change: An Empirical Exploration," *Quarterly Journal of Economics*.

55. In sum, the government's objective to increase the proportion of general secondary school students is laudable and on target, but could easily take a generation or more to be fully implemented. In the meantime, Egypt needs to focus on improving quality, relevance, and flexibility of the current education throughout the 'two-track' structure. Policy options in this area are discussed in the last chapter. The next chapter will discuss the key underlying variables that affect outcome inequalities. Educational outcomes in Egypt are, on average, reasonable for Egypt's level of economic development, but less so given the high level of public and private investment, especially coupled with the relatively high level of enrolment rates and years of attainment. Outcomes are also highly unequal, a fact that clearly reflects differences in socio-economic status across students, but also likely inequality in the quality of schools. Our inability to be more conclusive regarding the inequality of quality across schools shows the need to increase analytic efforts to understand better the quality of schools in Egypt.

CHAPTER 4. WHAT CAUSES INEQUALITY OF EDUCATIONAL OUTCOMES?

56. The previous chapter makes the case that the inequality of outcomes is one of the key education issues facing Egypt today. Three elements demonstrate the inequality of educational outcomes. First, test scores in Egypt, although at or above expected values by some measures on average, have a wide dispersion both within and between school and geographic areas (governorates). There is also wide dispersion between the upper and lower ends of the income distribution. Second, children entering upper secondary school are divided into two streams of the education system, one that provides few opportunities for relevant learning (technical high schools) and the other where better performing students are enrolled (general high schools) who have the opportunity to enter university. This streaming likely serves to widen the distribution of educational outcomes amongst upper secondary school students, though conclusive evidence of such is lacking. Third, there is evidence of these education inequalities also spilling over into the labor market. Thus, the problem of inequitable distribution of educational quality mirrors other inequities in Egypt.

57. There are three principal factors that contribute to this inequity in educational outcomes. First, there are considerable inefficiencies in the management of sector resources, thus privileging some regions and households more than others. These inefficiencies also tie up funds that could be used to improve overall educational performance. Second, measures of inequality of educational outcomes are correlated with income levels and the wealth gap in student achievement is large in an international comparative framework. Third, the fundamental structure of the education system emphasizes selection for the educational opportunities most likely to yield strong rates of return rather than the acquisition of fundamental competencies by the greatest number of students. Each of these is explored in greater detail below.

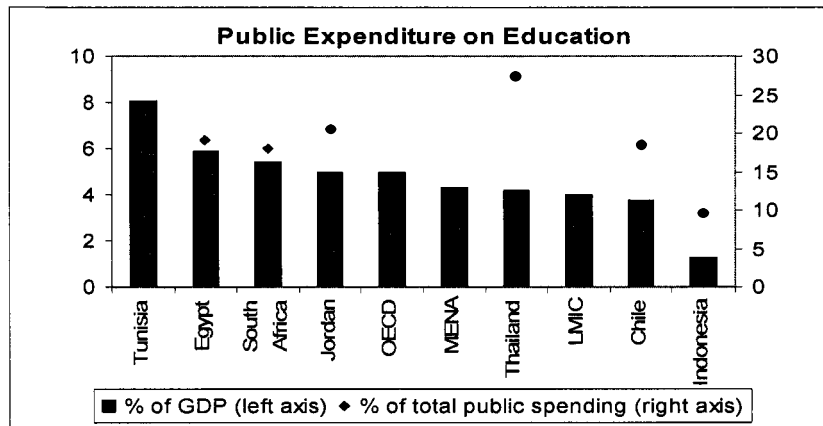
I. Inefficiency and disparities in resource allocation and of the impact of unequal educational outcomes

58. Public expenditure on education was a robust 5.9 percent of GDP in 2003 and nearly one fifth of total public spending (Figure 22).³⁶ Household expenditure is quite high as well—about 3.7 percent of GDP according to the most recent calculations from the HIES. This constitutes a large investment in education in comparison to other countries. Unfortunately, this generous allocation is not used in an optimal manner, and the inherent inefficiencies contribute to educational outcomes that are not as strong as they could and need to be. These inefficiencies are also likely among the determinants of the wide disparities in educational outcomes, though how much and how they contribute is not as well understood as it will need to be for Egypt to properly tackle its most important challenges. The inefficient and/or ineffective use of public and private resources fall into three types of expenditures: personnel; construction; and private tutoring.³⁷

³⁶ Education spending as a proportion of GDP may have dropped a little, but mostly because of the overall growth of the economy.

³⁷ We have unfortunately not been able to gather data on the distribution of non-salary inputs in Egypt. Whereas the overall proportion of non-salary expenditures seems reasonable (above 16%), it is not clear whether this amount translates into the same inputs in all schools. However, the high proportion of non-salary expenditures may hide an underlying distortion: it appears that more than two-thirds of non-salary spending is used for the purposes of administration (e.g., MOE central and governorate offices, GAEB). Textbooks also represent a disproportionately high proportion.

Figure 22: International Comparison of Public Expenditure on Education



Source: OECD (2002), World Bank Edstats

Note: Data for Tunisia % total public (2001) and % GDP (2003) and Data for Thailand (2004), no data for LMIC and MENA for % total public spending

Inefficiencies in Education Sector Staffing

59. Personnel costs are within the international norm, at approximately 85 percent of public recurrent expenditures. However, the education staff is configured such that this seemingly adequate allocation is in fact used in an inefficient manner, with equity consequences. First, Egyptian teachers are the least paid in the region (compared to GDP per capita). Furthermore, education staff has among the highest teaching: non-teaching ratios in the world (1:1.2). Figure 23 shows the breakdown by school level; preparatory is the worst, with only 51 percent teaching staff, 7 percent administrators, and 42 percent workers.³⁸ And in fact, the situation may be worse than it appears in Figure 23, especially in TVET, which has well over a hundred different teacher specializations. If a school does not have enough students to fill a “specialists” full course load, he or she may not teach a full load. In addition, some teachers may work as administrative “deputies,” thus also reducing their teaching load. Essentially, the education corps is ineffectively deployed, overly represented in administrative and other non-teaching roles, and underpaid –characteristics that render problematic the provision of education quality.

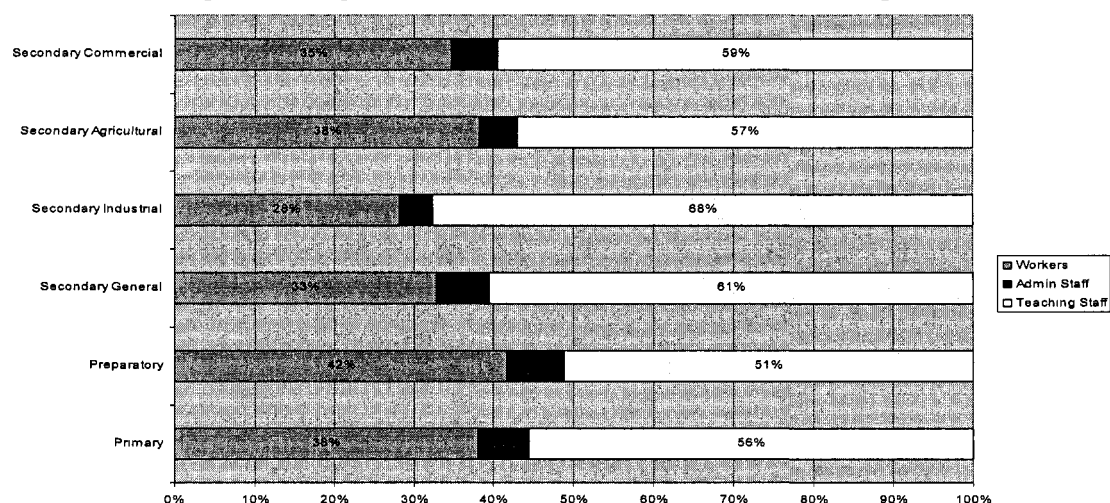
Table 3: International Comparison of Economic Allocations in Pre-University Spending (%)

	Total pre-university expenditure		Current expenditure	
	Current	Capital	Total staff compensation	Other current
Egypt	87.0	13.0	83.5	16.5
Indonesia	93.9	6.1	85.8	14.2
Jordan	89.0	11.0	92.5	7.5
Tunisia	88.7	11.3	95.1	4.9
Philippines	91.6	8.4	85.6	14.4
WEI mean (1999)	90.7	9.3	82.9	17.1
OECD mean (2000)	92.1	7.9	80.3	19.7

Source: OECD (2002), adapted from Egypt PER policy note (2005)

³⁸ In addition, Gershberg and Gohary (2007) report that school staffs say guidelines require 5% of those in the worker category should be handicapped which, while a noble social aim does not necessarily help school productivity.

Figure 23: Proportion of Educational Staff Considered Teaching Staff



Source: Egypt Ministry of Education (2006)

60. This configuration of educational personnel has a number of stubborn characteristics. As shown in Table 4, the growth of both teaching and non-teaching staff is outpacing the growth of the relevant student population at all school levels, in some cases dramatically so.

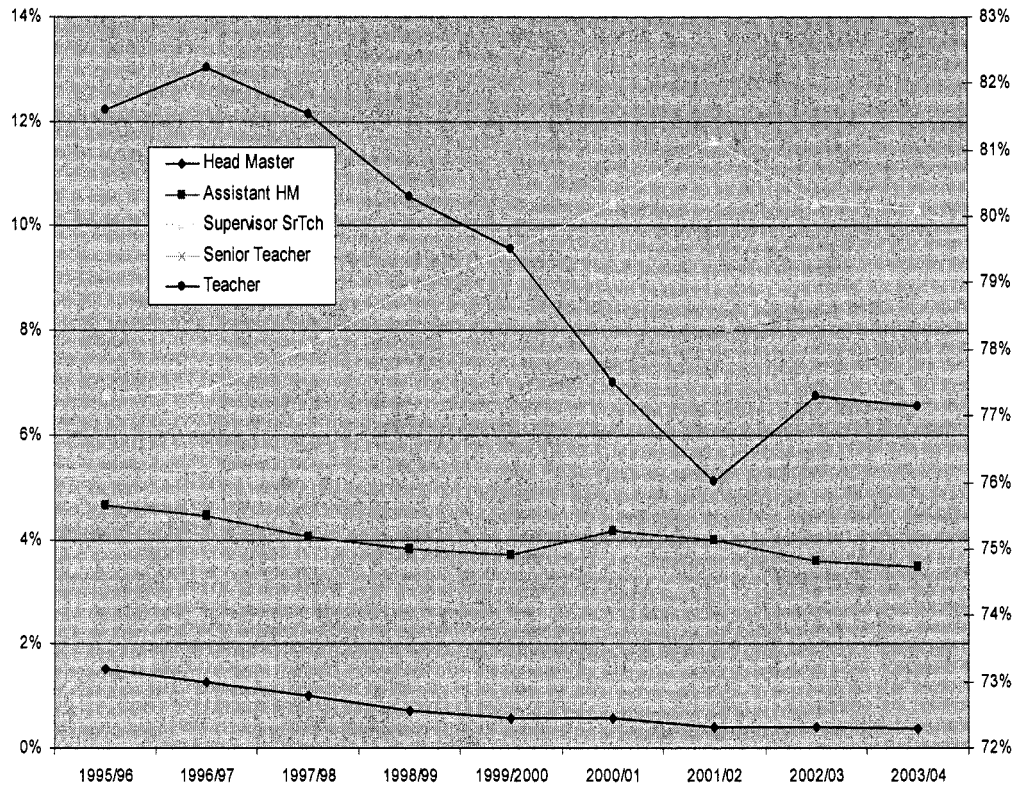
Table 4: Change 1995/96 to 2003/04 in Student Enrollment, Teaching and Non-Teaching Staff (%)

	Students	Teaching staff	Non teaching staff
Primary	-3.42	7.77	5.16
Preparatory	17.9	19.2	85.0
Basic	3.45	11.95	29.42
Secondary (total)	32.94	24.10	40.16

Source: Ministry of Education.

61. There are other ways that the split of the education staff into teaching and non-teaching personnel does not account for the time that teachers actually teach. Figure 24 shows the fall in the proportion of regular teachers and the rise of Senior and Supervisor Senior Teachers, who teach half as much as regular teachers, or even less.

Figure 24: Proportion of Potential Teaching Staff by Type 1995/96-2003/04



All pertain to left-hand scale, except Teacher, which pertains to the right-hand scale
 Source: Egypt Ministry of Education (2006)

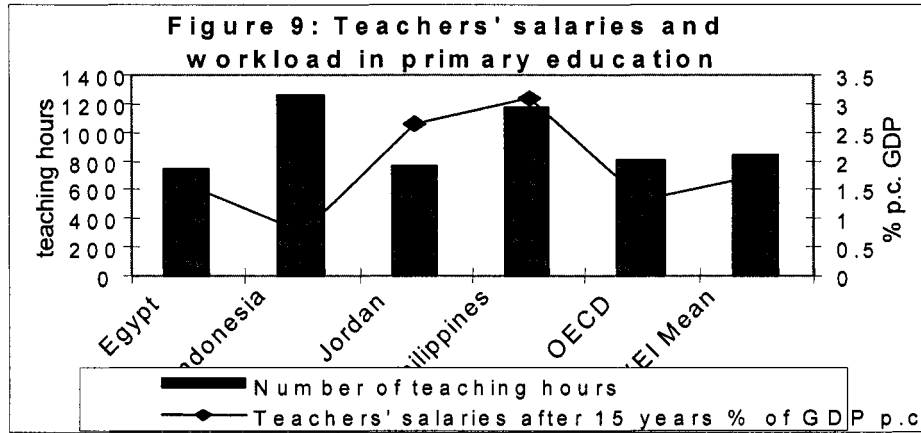
62. One of the reasons for the high proportion of administrative personnel seems to be that the limited number of grades in the pay and promotion scale restricts promotion possibilities and encourages senior teachers to take administrative positions. The civil service for this category of teacher, as for the other categories, is a traditional, career-based system with a weak application of discipline and performance provision. Teacher job descriptions are quite generic and performance reviews are not oriented to outputs; they are mostly determined by automatic advancement provisions. Although the rigid pay and grading system links performance and pay in principle, in reality this practice has become obsolete. For example, most teachers simply receive a grade of excellent in their performance review (Steedman, D. & Jups, K. 2005).

63. The preference of teachers to become administrators is compounded by the very low salaries they receive. Although the official teaching load, in terms of number of hours of teaching, is slightly lower than some comparator countries, the average salary for teachers is barely 1.5 times GDP per capita (Figure 25).³⁹ Figure 26 corroborates, using UNESCO (2006) data for more countries, that the teaching load is relatively low, though not as low as salaries.

³⁹ UNESCO (2006) cites even lower figures for Egyptian teacher salaries as a percentage of GDP (below 1 percent), which would make Egyptian teachers paid worse than all countries in the world other than Indonesia and Kazakhstan. While we believe these figures are simply too low, the relative point is clear: teachers' salaries in Egypt are low. The same UNESCO report corroborates our figures for teaching hours and work load

64. According to an analysis of teacher salaries that controls for GDP per capita and student teacher ratios, Egypt would have a predicted teacher salary of 2.2 times GDP per capita.⁴⁰ Other analyses fix average teacher salaries in low and lower middle income countries between 3 and 3.5 times GDP per capita.⁴¹

Figure 25: Teachers Salaries and Workload in Primary Education

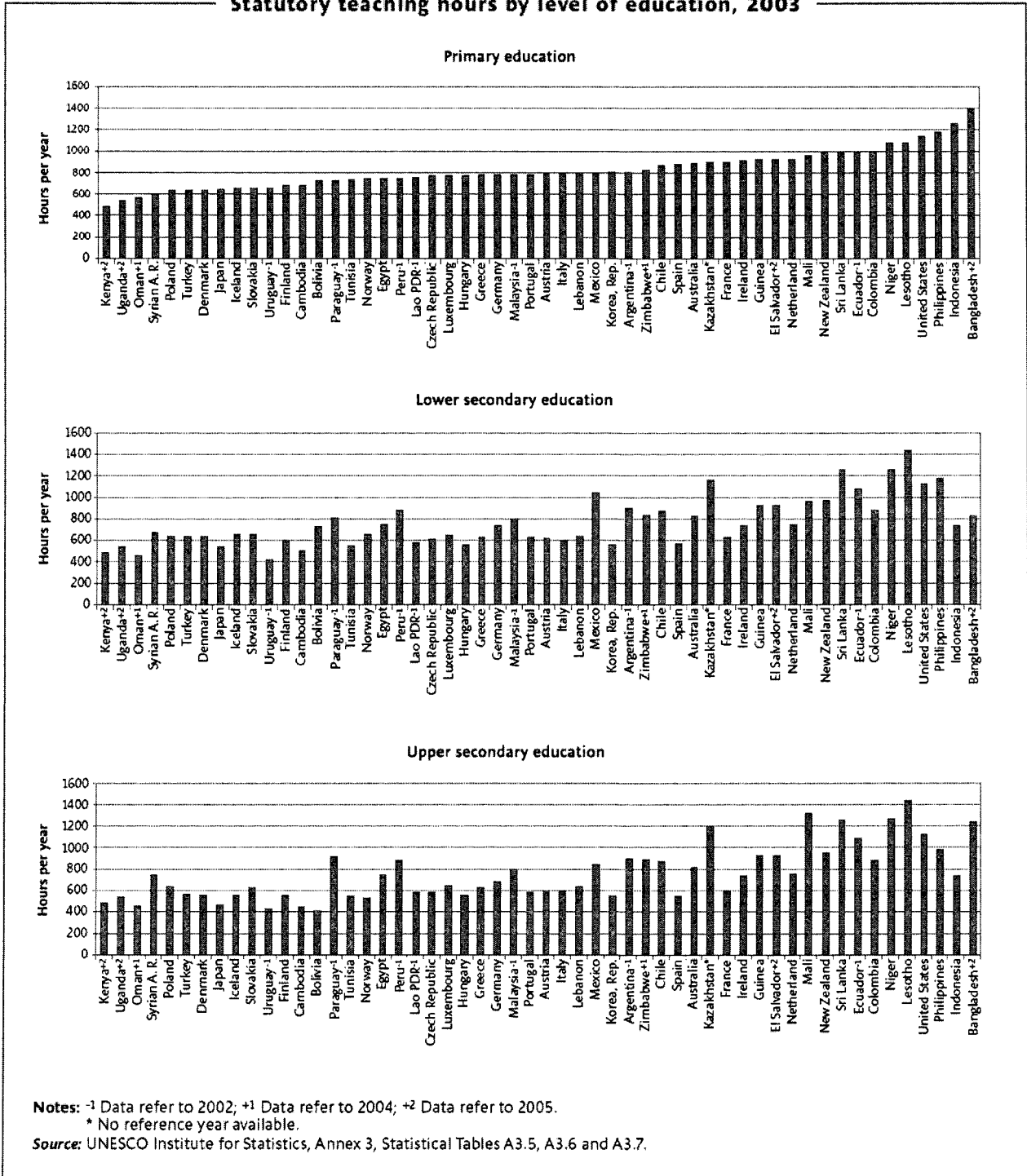


Source: World Bank, Egypt PER Policy Note and Edstats

⁴⁰ Data for Egypt is based on staff calculation applying the methods developed in Carnoy and Welmond (1996).

⁴¹ B. Bruns, a. Mingat, and r. Rakotomalala, *Achieving universal primary education by 2015 - a chance for every child*. The World Bank, 2001.

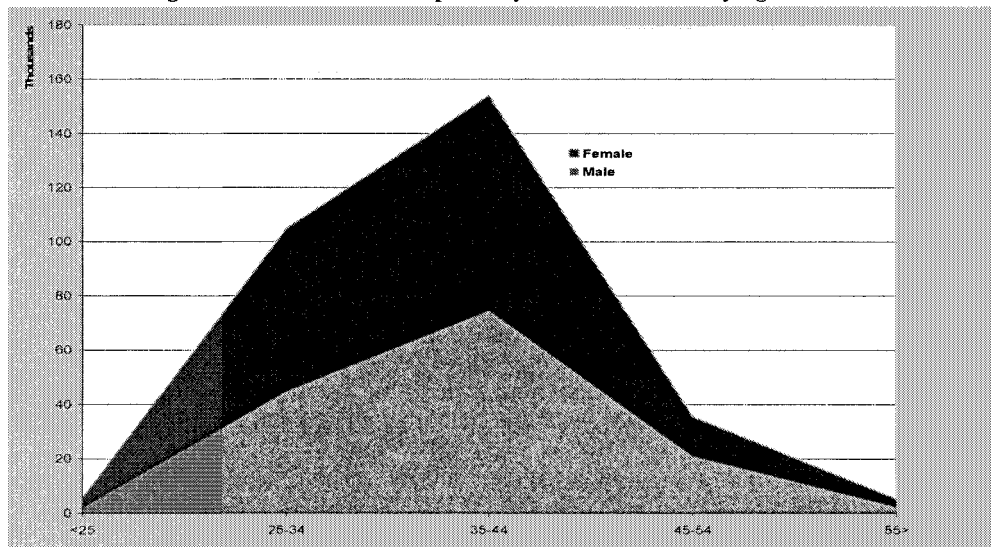
Figure 26: Statutory teaching hours by level of education, 2003
Statutory teaching hours by level of education, 2003



65. Furthermore, the average age of educational staff is such that many are at the point in their career trajectory where they convert to positions and administrative posts requiring less teaching, though the average age will not likely lead to high retirement rates in the near term. The largest cohort of teachers is in the 35-44 year old age bracket. Figure 27 shows that most of the stock of teachers is less than 44 years of age. Only about 2 percent of the teachers are expected to retire over the next 5 years, which limits the opportunities for either increasing the average teaching load or reducing the surplus of teachers in some subjects through retirement. Combined with an infrastructure gap requiring additional classroom construction in some areas, the increasing number of non-teaching posts (and of teachers who teach less) has resulted in some very large class sizes, especially in disadvantaged urban areas. Egypt has made great progress with respect to class size, but challenges remain. Only about 9 percent of schools have an average class size (ACS) more than 60, and a little more than half have an ACS of 40 or less. There is, however, great variation across governorates and cities. For instance, World Bank (2005, Note 7) states “In the rare governorate, such as Matroh, more than one third of the schools enjoy an ACS of about 20 students, in contrast to such governorates as Medina and Fayoum, where 55 percent and 61 percent of the schools, respectively, have an ACS of 50 students. In those cases with large class size, many teachers have difficulty dealing with these conditions and are “pressing” to obtain non teaching positions. Teachers seeking non-teaching positions prefer to work in schools of wealthier communities than in schools in poorer communities. Thus, schools in disadvantaged areas, particularly when not participating in any international project, tend to have fewer non-teaching personnel than in project schools (also confirmed by field observations, 2006)⁴². Somewhat ironically, this means that even getting many qualified non-teaching staff back into the classroom will not likely improve the equality of quality unless there are also incentives for redeployment to needier schools and, perhaps, regions. And without changes in human resource management practices and significant civil service reform, these trends are unlikely to change for the better.

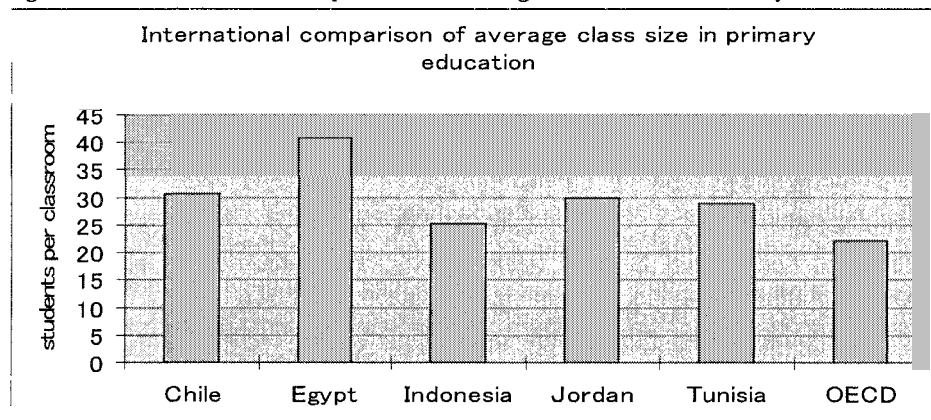
⁴² In some visited *project schools* a significant number of non teaching staff is part of the personnel, including with almost equal amount of administrative staff versus teachers. E.g. an “effective” school in Qalybia with total personnel of 150, included 83 non teaching personnel and 67 teachers. However, in disadvantaged schools, the number of non teacher personnel was considerably lower than in project schools. For instance, in a school in a very poor area in Fayoum Governorate, we found a total personnel of 33, including only 4 non teaching personnel. Note that these trends do not likely mean that disadvantaged areas have better quality or even better inputs to quality. First, this phenomenon impacts student-teacher ratio, not necessarily class size. Unless one believes, then, that the non-teaching teachers are literally doing nothing to positively impact quality, then this means that school quality would be, all else equal, higher in the non-disadvantaged schools, as would expenditure per pupil.

Figure 27: Distribution of primary school teachers by age bracket



Source: Egypt Ministry of Education (2006)

Figure 28: International Comparison of Average Class Size in Primary Education

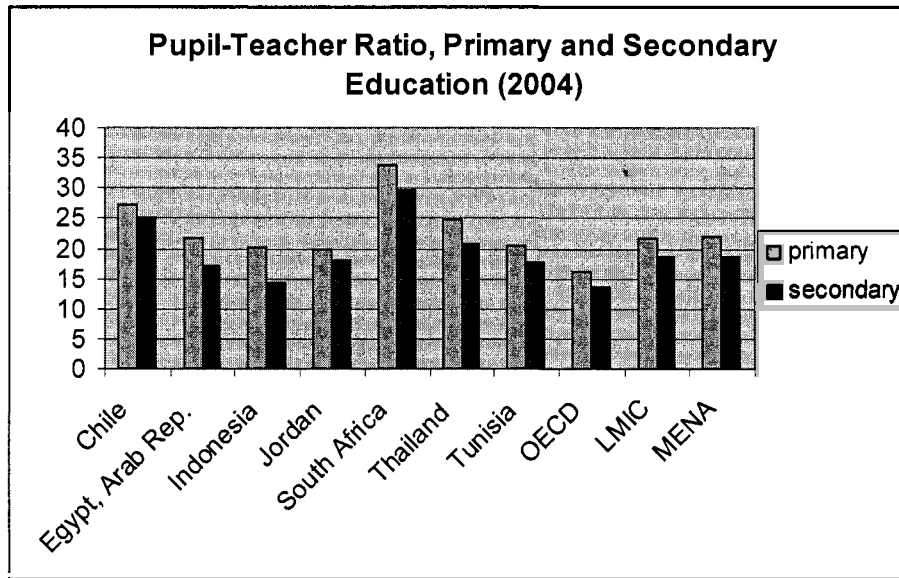


Source: MOE data, Staff calculations

66. The high proportion of non-teaching teachers contributes to the relatively large disconnect between class size and pupil-teacher ratio. Comparisons of Egypt on this latter figure tell a rather different story, at least on face, and indicate that Egypt does potentially have the human resources in the system to improve quality.⁴³

⁴³ There is, however, an alternative interpretation to these differences between class size and pupil teacher ratio essentially that “teachers work hard.” This interpretation is reported in a recent UNESCO report with international comparisons of teacher data across a wide range of countries (See UNESCO, “Teachers and Educational Quality: Monitoring Global Needs for 2015,” Montreal, 2006, Figure 3.8 p. 92). However, since we are unable to determine if that report accounted for teaching staff in Egypt listed as teachers but who do not in fact teach, we are cautious about accepting their interpretation. Thus, while it is clear that the work load for teachers is not particularly low, we cannot conclude that it is particularly high either.

Figure 29: Pupil-Teacher Ratio, Primary and Secondary Education (20024)



Source: World Bank Edstats

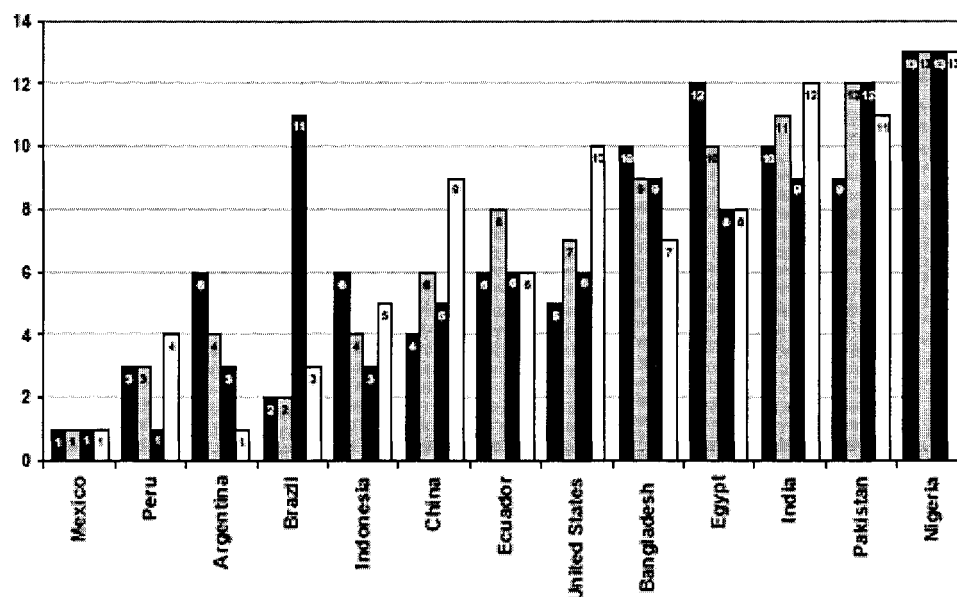
67. In addition, there are regional disparities in pupil teacher ratios that may contribute to some of the inequities inherent in the system. While we might document the differences in Egypt, such data are not meaningful without a comparative context. Herman and Poirer (2007) calculated four equity measures for primary school pupil-teacher ratios for 13 of the most populous countries in the world, as shown in Figure 30. In a composite ranking based on all four measures, Egypt ranked 10th, better than India, Pakistan and Nigeria, but worse than countries such as Bangladesh, China, Indonesia, Mexico and Brazil. Whatever the validity and relevance of the comparisons for Egypt to these particular countries, the results do show that there are inequities in the pupil-teacher ratio across governorates that could be addressed and thus, perhaps, differences in this input measure could be contributing to the unequal outcomes we reported between different populations. In addition, of the four measures, the coefficient of variation is perhaps the most relevant and important since it is the best measure of variation across the entire distribution. On this measure, Egypt is 10th out of 13.⁴⁴

68. In part because of the disparities in pupil-teacher ratio, but also because of other factors, the same study also finds that Egypt displays inequity in the expenditures per pupil across governorates. Other factors that could contribute to such disparities would be the average seniority of teachers in more “desirable” governorates and myriad other factors that we cannot account for. Figure 30 shows that of the 11 countries for which Sherman and Poirer (2007) could calculate the four equity measures, Egypt ranked 10th, ahead of only China on a composite index based upon the results of all four measures. Again, even if one argues this is not the best group of comparator countries, the results clearly show that there are inequities in expenditure per pupil across governorates and one

⁴⁴ Briefly, how to interpret the four equity measures: 1) the range ratio compares the highest and lowest regions to each other; 2) the McLoone index compares the bottom half of the distribution (bottom meaning worse off by the measure of interest) to the median, and give a sense of what it would take to get all districts to the median; 3) the coefficient of variation, measures the variability of an indicator around the mean. It is the standard deviation divided by the mean). Unlike the range ratio and the McLoone Index, it provides information on the entire distribution; the gini coefficient is derived from a Lorenz curve and relates to the cumulative proportion of a resource that is held or received by the same cumulative portion of the relevant population. It also provides information on the entire distribution. See Sherman and Poirer (2007: 28-29) for more complete definitions.

might also surmise, between schools. It is worth noting, however, that Egypt appears more inequitable than either Indonesia or South Africa, which as mentioned previously, are two countries the MOE itself often sites and potential examples upon which to build its own reforms. To the extent that expenditure per pupil impacts outcomes, differences in this input measure could be contributing to the unequal outcomes. A more complete study is needed to fully understand the causes and nature of the disparities in expenditure per pupil (across schools more than these rougher measures across governorates), and full consideration would then need to be given as to how to address the inequities in a manner that might improve school quality for the disadvantaged.⁴⁵

Figure 30: Public primary pupil-teacher ratio ranking orders on equity measures
 ■ Range ratio ■ Coefficient of variation ■ Gini Coefficient □ Adjusted McLoone Index



69. Finally, the particular way that teachers are deployed also contributes to the inequitable distribution of quality. In Egypt there are 3 categories of teachers: (i) permanent (civil servants hired for life), (ii) contracted teachers (who have all other benefits except pensions and participation in in-service training), and (iii) hourly teachers, who receive no benefits. The appointment of teachers to posts does not necessarily reflect the specific needs of that position or class subject matter, while there is also a tendency to hire more contracted teachers. In certain governorates the number of contractual teachers may be as high as 50 percent of the teacher population (Steedman, D. & Jups, K. 2005). The growing and widespread use of contract teachers has been one way to address education budget shortfalls. However, this may result in more export of qualified teachers from—and also in a reduction of qualified teachers in—more disadvantaged school areas since the proposed positions of contract teachers have less access to in-service training opportunities. In addition, current negotiations for contract teaching positions must be repeated annually, are highly centralized, hamper planning and reducing the flexibility that such hires should increase.⁴⁶

70. In sum, teacher policy in Egypt has rendered the pursuit of more equal educational quality very difficult. There has been some progress of late, and promising policies have been proposed but not implemented. Still, poorly paid teachers, working within a sea of administrators, with little

⁴⁵ Again, Egypt ranks 10 out of 11 on the coefficient of variation and also on the Range Ratio, which is of greater concern for expenditure than for teacher-pupil ration since the latter is driven by a few remote governorates with very small communities and schools with low pupil teacher ratios.

⁴⁶ See PER (2005) for details on the process of hiring contract teachers.

incentive to change behaviors, are reluctant advocates of policy changes that could produce improvements in learning outcomes. We have only anecdotal evidence regarding the relative quality of contract teachers, for instance, the prevailing sentiment expressed by seasoned MOE senior bureaucrats. The bottom line is that human resources simply do not reach the classroom as effectively as they should. Egypt cannot afford to have so many teachers and other educational staff teaching so little. Quality improvement will always lag as long as these are the long-term trends in staffing.

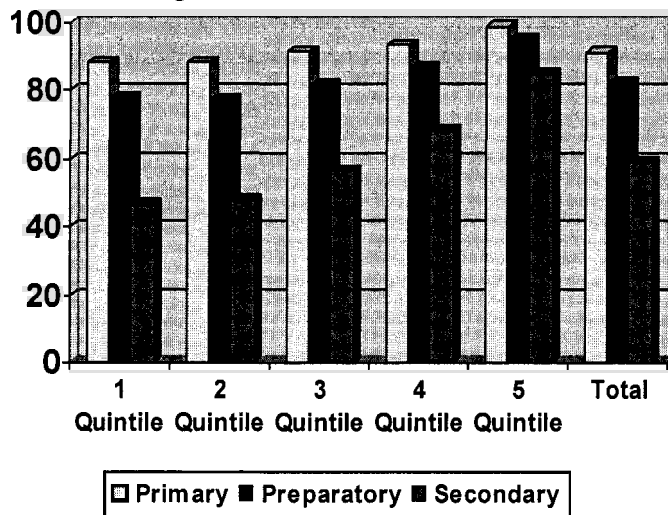
71. These basic teacher demographics and the human resource management system will prove particularly challenging for wholesale curricular reform: the MOE’s strategic plan, for instance, calls for the development of school-based reform, comprehensive curricular reform, and authentic assessment of students. In addition, we argue in the next section that the entire evaluation and testing system must be restructured. Such reforms will require significant changes in the ways teachers teach, which is even more challenging in many ways for teachers steeped in the established methods.

72. The MOE’s strategic plan has been developing a proposal for a special “teachers cadre” in the civil service with a large pay raise, 50% of which will be for pay linked to incentives (e.g. for teachers to get accredited or teach in remote areas). We applaud and support this development, but the final regulations have not yet been passed and there is sure to be significant negotiation among politicians and labor advocates. Achieving working incentives will require strong resolve on the part of the MOE, which will also need the support of the Prime Minister and, ultimately, the President.

Inefficiencies in the distribution of schools and classrooms

73. Although Egypt has reached full enrollment, certain parts of the country will continue to need additional schools, particularly in poorer communities both in remote locations and in very dense urban areas. Indeed, enrollment rates by income quintile appear to mirror the availability of a school in a given community. As the figure below shows, access to schools correlates not only with poverty and location, but also with enrollments.

Figure 31: Percentage of Persons with Available Schools in their Communities



Source: Leithy (2006).

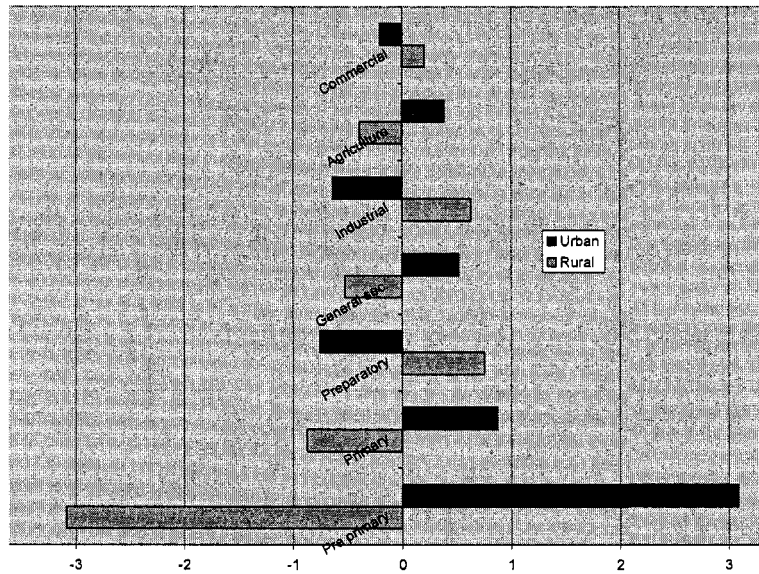
74. However, an analysis of the determinants of enrollment by students using the HIES shows that, controlling for the many well-known factors that negatively affect enrollment (e.g., parental education, poverty etc), having a school in the community has little significant effect on enrollment.⁴⁷ That is, surprisingly, the availability of a school at the community level did not appear to affect the likelihood of children to enroll at primary or preparatory levels, while it does affect secondary school enrollments. One way to interpret these findings is that once a family decides it is worth their child attending school, they are generally willing to have the child travel. That is, one interpretation is that quality schooling is more important than easy access.

75. In addition, high class density affects both teacher and parental assessments of priorities for reform. Given this, there will be continued pressure for school construction in certain areas (many of them disadvantaged). For example, based on the HIES, 19 percent of rural residents reported shortages of teachers as the first reason for dissatisfactory primary education, while urban residents pointed to high class density as the first reason for dissatisfaction. In reporting the reason for dissatisfaction, there were no differences found between the poor and non poor, however in either case, it shows quality of the learning environment matters for effective student learning and parental satisfaction.

76. Further, in the recent TIMSS teacher background questionnaire, teachers were asked to list possible limitations to teaching. For mathematics teachers, the two main limitations identified were “high student-teacher ratio” (which is related both to the availability of teachers and classrooms) and “uninterested students.” In science, the general level of reporting of limitations was higher and more than 50 percent of teachers reported “high student-teacher ratio,” “uninterested students,” and “different academic abilities” as limitations. Figure 24 presents data to support and narrow some of these claims. Specifically, in urban areas pre-primary, primary, general secondary, and vocational agriculture classrooms are more crowded.

⁴⁷ Such modeling is fraught with all the usual challenges of endogeneity and, in this case especially, lack of true independence of the independent variable. It is not clear exactly how to interpret the “all else equal” criteria of such a model. Thus, while caution is needed in interpreting the results, they are instructive. Using multivariate logistic regression analyses, we analyzed the likelihood of enrolling in school at various levels vis-à-vis students’ family background. The relationship between the probability of enrolled in school, on one hand, and, Household demographic, education and employment characteristics as well as gender, educational attainment and employment status of head of household and regions of residence, a binary variable denoting whether the household lives below the poverty line, and gender of the child on the other hand were evaluated. This was achieved by fitting the probability of enrolling in schools, as a function of the various personal and human capital characteristics, which are assumed to influence school enrollment. Using the unit level data of HIECS, the performance of several indicators was assessed. The analysis was applied for primary, preparatory and secondary levels separately.

Figure 32: Deviation from Average Class Density by Level of Education and Urban/Rural



Source: Egypt Ministry of Education (2006)

77. Naturally, all these issues are inter-related and have some interaction with issues of school construction. Egypt must build schools, but schools must be built more efficiently, more nimbly, and in a more varied manner to better match demographic trends and the preferences of parents and communities.

II. Private expenditures for education: the inefficient and inequitable effects of tutoring and Egypt's student assessment

78. Perhaps no other single set of factors skews the incentive environment and the inequality of educational opportunities more than private tutoring, school fees and other private investments households in Egypt currently must make to give their children the best chance to succeed. And of course, the tutoring is the symptom of the disease, which is more accurately diagnosed as being driven by (i) high stakes tests that require rote memorization; and (ii) very low teacher pay. Differences in household expenditure on education naturally vary by income level and region (Table 5).

Table 5: Private Spending on Education, by Income Quintile

Private spending is significant and unequal

Annual HH Spending	Poorest Quintile	2 nd	3 rd	4 th	Richest Quintile	All Egypt
Total HH spending on education tutoring and fees (LE)	172.49	269.63	356.51	558.72	1828.01	637.80
Total HH expenditure on education (LE)	358.93	531.31	682.56	997.13	2677.48	1051.04
% of tutoring and fees out of total HH expenditure	2.52	3.20	3.75	5.23	10.95	5.71
% of total HH expenditure	5.25	6.31	7.17	9.34	16.04	9.42

Source: Leithy (2006).

79. Table 5 shows that the level of private spending increases in both absolute and relative terms as household income rises. The richest quintile spends more than 8 times as much as the poorest quintile overall⁴⁸ and more than 10 times as much on tutoring and fees. As mentioned earlier, private expenditure in the aggregate is about 3.7 percent of GDP, and this figure has been steadily growing. It was 2.98 percent in 1995/96 and 3.22 per cent in 2000.⁴⁹

80. Over 60 percent of private expenditure currently is on tutoring and fees, with the split between the two close to equal (and this proportion has also been growing). Thus, both tutoring and fees paid to schools are significant costs to households. Fees paid to public schools represent approximately 1.1 percent of GDP. Similar results are seen for per-student expenditure.

81. Almost half of education spending of the poor is allocated to transportation and books, and about one-quarter to school fees and another quarter for private or group tutoring. Expenditure of the richest quintile is distributed equally among these three categories. Expenditure on private tutoring represents 28 percent of private expenditure on education and almost equals education fees.

82. Examining the trends over time is also instructive. Figure 33 and 34 show household education-related expenditure by income quintile for the last three relevant household surveys. Figure 33 shows actual education spending in constant prices while Figure 34 shows education spending as a proportion of total household expenditure, and both distinguish between school fee and tutoring spending on the one hand, and all other expenditures on the other (e.g., uniforms, transportation, books, supplies, backpacks, etc). First, it is clear that fee and tutoring expenditures are both rising and “crowding out” other educational expenditures across all income groups.

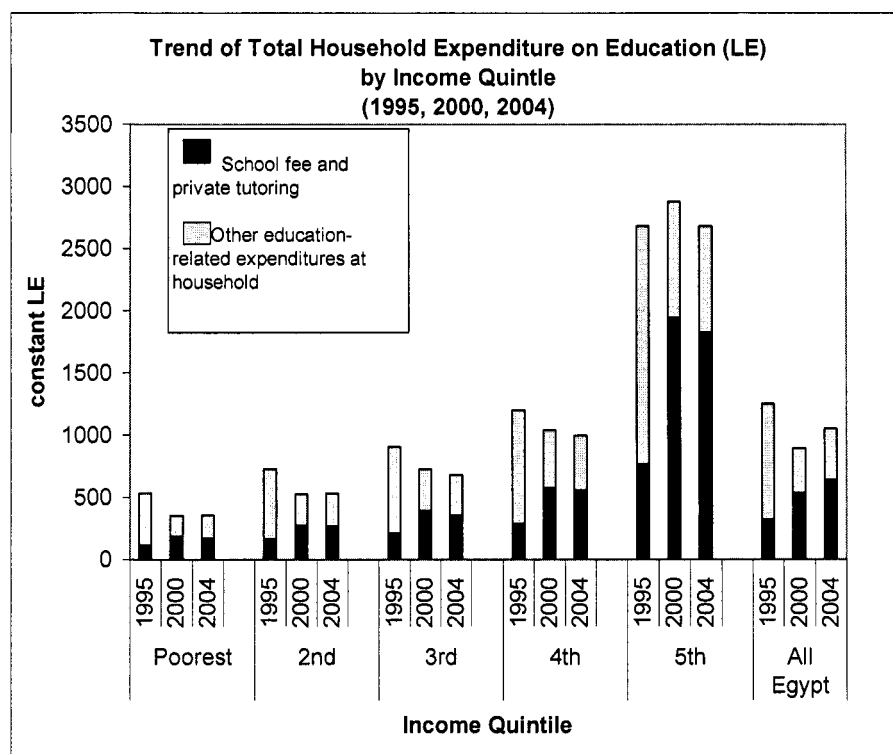
83. Second, there is clearly inequality that is in most ways growing over time. The inequality is not unequivocally growing in *all* possible ways over time, but it is growing in the following important senses: (i) fees and tutoring expenditure is growing in real terms - this was true even in

⁴⁸ In addition to tutoring and fees, total household expenditure includes a wide range of items from school uniforms, to supplies, to backpacks. Indeed one lesson that emerged from the analysis is that donors could make a significant contribution to the poor by supplying backpacks, which are a surprisingly large expenditure item.

⁴⁹ The calculation of these figures relies heavily on the estimation of the ratio of private consumption to GDP derived from the national accounts, where private consumption is always calculated as residual. Thus, there is some uncertainty in the precision of the calculation, but it is highly likely that the trend we note is valid.

2000 when total education expenditure went down; (ii) for most quintiles for most years—with a few exceptions—fees and tutoring are unequivocally growing both in real terms and as a proportion of household expenditure; and (iii) the multiple by which the rich outspend the poor is growing over time: in 1995, the proportion of household expenditure that the richest quintile devoted to fees and tutoring was 2.3 times that of the poorest quintile, and in 2004 it was 4.4 times as great.⁵⁰ A similar pattern holds for spending at constant prices where we see the top quintile spent 6.5 times as much as the bottom in 1995, and 10.6 times as much in 2005. Technically, one could argue that this is progressive (in that the rich spend a larger proportion of their expenditure); however, because what is being bought with the tutoring and fees is presumably quality education and the ability to stay out of vocational schools and go to university, then this trend represents growing inequality.

Figure 33: Trends of Total Household Expenditure on Education (LE) by Income Quintile

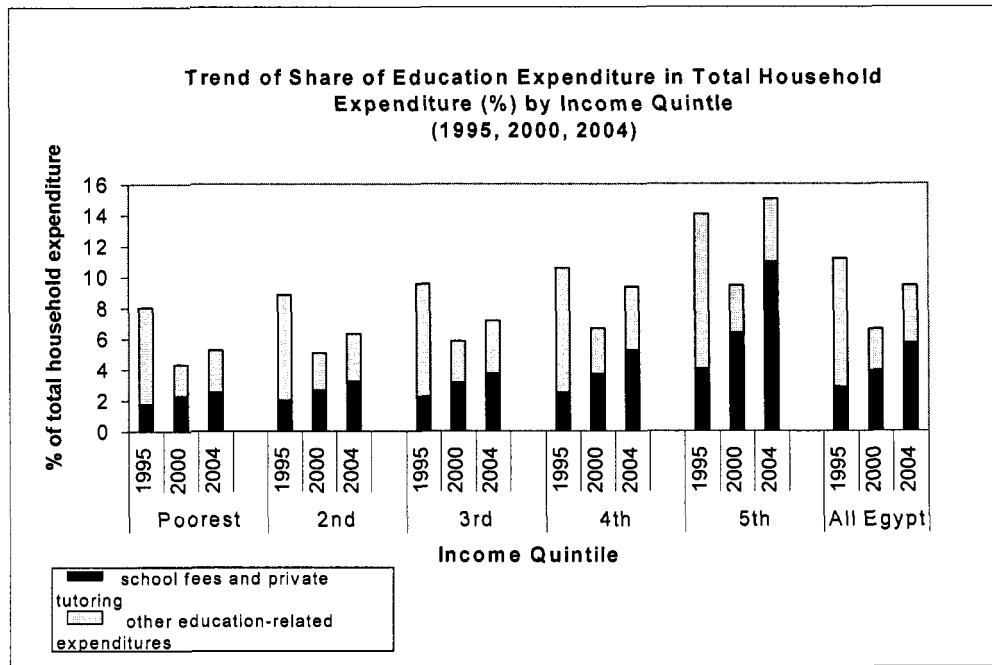


Source: Staff Calculation based on Egypt HIES data 2005⁵¹

⁵⁰ These calculations are done with the underlying data for the figures: $4.02/1.76 = 2.28$ and $10.95/2.52 = 4.35$. A similar pattern holds for spending at constant prices: $766.34/117.45 = 6.52$ in 1995 vs. $1828.01/172.49 = 10.6$ in 2005.

⁵¹ Note for the data interpretation in figure 33: The real spending during 2000-2004 in all quintile declining, but the column All Egypt is increased. This is because all Egypt figure is the weighted average and the weights are the number of households or students in each quintile. These weights are not the same across quintiles or in different years thus results in this pattern.

Figure 34: Trend of Share of Education in Total Household Expenditure (%) by Income Quintile



Source: Staff Calculation based on Egypt HIES data 2005

84. There is a significant variation in spending on tutoring between the lowest and highest income households, which gives children from higher income households an advantage in terms of being selected in better schools or more desirable types of education. However, the nature and cost of the tutoring also varies across different kinds of students and families. Results from the latest TIMSS show that students in experimental language schools, for instance, take fewer private lessons than those in the best government schools (though they may spend more for those lessons). But students in the bottom quartile schools take the most private lessons. Again, the implication here is that the lessons for the students in the bottom quartile schools are likely more numerous but less expensive.

85. Private expenditures, *per se*, are not necessarily a problem in education systems. Such resources can augment public expenditures and lead to greater outcomes for all students. However, when such expenditures aim to compensate for weaknesses in the public education system, the results are often inequitably distributed.

III. The influence of student selection mechanisms on the distribution of quality

86. All countries have mechanisms that sort students on the basis of ability and then orient them towards different types of educational opportunity. However in the case of Egypt, student selection is the overwhelming force in the education sector. Everything starts with the *Thanawiya Amma* - the secondary leavers exam and university placement exam in one. This test determines whether a high school graduate will go to university and his or her score will decide whether the student will attend preferred faculties. Thus, this test serves three functions: a signal that the student has completed secondary school; a ticket for university entry and a device for selection and

streaming. Three other features amplify the importance of this one test. First, all graduating students in the country take exactly the same exam – there is no differentiation by field of study (students can take additional, more difficult tests to increase scores on the *Thanawiya Amma* – as a consequence, some students score above 100%). In addition, faculties and universities use no other mechanism to select students. Finally, students are required to sit for the exams in the year in which they finish secondary school. They cannot enter the labor force, study and prepare, and take the exam when they feel prepared.

87. The origins of this test are from the vestige of the social contract established since the socialist regime of the 1950s, in particular, the promise that all university graduates and many secondary school graduates would receive public sector employment (though university graduates got more desirable jobs with career ladders). For decades, the system allowed nearly all general secondary school graduates to gain entrance to a free university education. Starting in the 1980s, however, recognizing the demographic pressures, the unsustainable promise of public sector employment for university graduates; and assessing the demand for a skilled workforce, the Ministries of Education and Labor began heavily promoting the Technical and Vocational Education and Training (TVET) sub-sector. This set the ‘two-tracked’ educational system that is in operation today.

88. The consequence of the singular value of the *Thanawiya Amma* is substantial for the education system, particularly because of the stratified nature of the higher education system. It spurs a frenetic competition for access to the preferred faculties of universities (engineering, medicine, etc.), which tend to have better teaching conditions and better opportunities for employment upon graduation. For those students that do not have the remarkable scores to enter these faculties, their main option is to enroll in the less promising faculties of commerce or law, which tend to be overcrowded and offer little promise of gainful employment. Unfortunately, faculties of education are below these in stature. The students with the lowest scores are oriented towards technical colleges, widely considered to be the lowest quality institutions in higher education.

89. This dynamic is mirrored by the structure of secondary education, discussed in the previous chapter. It could be argued that the selection introduced at the end of preparatory school serves to control the proportion of students who will eventually be eligible for higher education, thus serving as a “safety valve.”

90. More than anything else, the main and most problematic manifestation of this extreme level of selection on the quality of education is private tutoring. Aside from the financial impact discussed above, we note here that a consequence of widespread tutoring is the weakness of the public perception of the value and usefulness of public school. Field evidence indicates that parents, students and teachers are taking more seriously studies that take place in private tutoring than those in public school classrooms (Zafeirakou, 2006).

91. Another negative impact is the absence of incentives to improve teaching and learning in the public classrooms, since teachers know that children will make up through private tutoring. It may happen that teachers are slowing down their pace of delivery to ensure that they have a market for the after-school tutoring. Private tutoring also has a strong negative impact on the pedagogical relationship between students and teachers during official class time, especially in the case of teachers providing private tutoring (in many cases in a location other than the school, but at times in

the school itself) to their own classroom students some of whom cannot afford the costs of tutoring.⁵²

92. It also diminishes incentives for teachers to be involved in reforms in innovative pedagogical practices. Assessments of pedagogical reforms in Egypt since the 1990s, (TIMSS 2003⁵³ SCOPE Analysis 2005) confirm that despite the shown political will, concrete education strategies, and effective implementation of components targeting changes on factors of the teaching-learning process in Egyptian schools, there is not much evidence on teacher involvement and thus on impact on pedagogical practices. In addition, as long as a primary goal of the system is to sort students into general and vocational schools, and then ration university access, then the use of poor testing instruments relying on rote memorization, even massive efforts at teacher training will not likely change actual pedagogy and teacher behavior in the classroom—either in public school classes or in private tutoring.

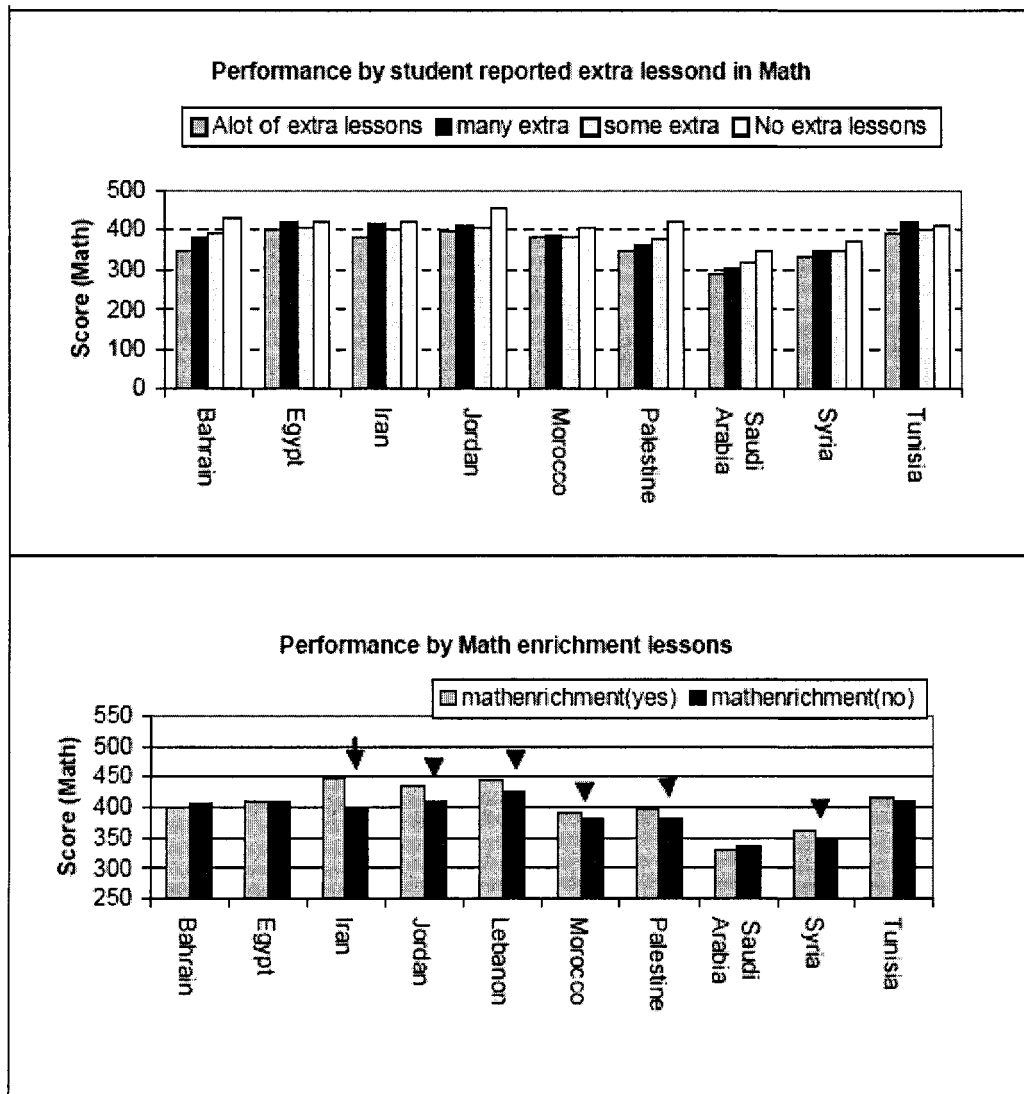
93. Another consequence of this booming sector is a diminishing social demand for reform and diminishing incentives to improve public schools. It may be one of the greater hindrances to effective reform. There seem to be few (and possibly no) serious studies analyzing the impact of private tutoring on teachers' professionalization, students' performances and reform dynamics in Egypt. However, we know that families and students often attribute success or failure in exams to the role of tutoring rather than to the public school (TIMSS 2003, PISA 2003). This incentive environment fuels the private tutoring system, which in turn creates perverse incentives for teachers. And access to tutoring is directly correlated with income.

94. If, however, all the private lessons and tutoring significantly improve valuable cognitive skills and competencies, that could be the silver lining in the cloud. This does not appear to be the case, however, for Egypt - or for many other countries. Abdul-Hamid (2005: 58) reports that "whether students are taking extra lessons after school is not associated with performance." Figure 35 shows the association between private lessons and TIMSS math scores. Abdul-Hamid postulates some reasons why so few differences might be observed, namely that weak students may tend to take the lessons, that the quality of the lessons may be poor, and/or that schools may not provide sufficient remedial support. However, there is an additional potential reason in the case of Egypt, namely that students and parents do not, of course, pay for lessons to improve TIMSS scores but rather to improve performance on the *Thanawiya Amma* and the other tests and evaluations that determine placement and success within the Egyptian system. Thus, these results provide additional, if again suggestive, evidence that the testing and evaluation system in Egypt, in particular the *Thanawiya Amma*, does not measure (and thus does not foster) the kinds of cognitive skills needed in a global and competitive market.

⁵² Much private tutoring is technically illegal in Egypt, especially by government teachers in non-sanctioned sessions; however, both quantitative and qualitative evidence accumulated over many years and many different reports makes it clear that such practices are widespread. Even the MOE's Strategic Plan discusses such practices and calls clearly for reducing the prevalence of private tutoring. Rather than proscribing punitive measures, however, the Plan states: "The plan perceives private tutoring not only as a social and educational phenomenon but as a symptom for an illness that has many causes." This seems like a promising basis for strategic policy formulation.

⁵³ TIMSS provide information on pedagogical practices, only indirectly through the questionnaire of principals and teachers,

Figure 35: TIMSS Math Performance and taking extra lessons



Source Abdul-Hamid (2005).

Note: Red arrows indicate that the differences between taking math enrichment lessons and not is significant, .

95. The difficulty in actually changing teaching practices will persist until the overarching exam system, and the tutoring that it spawns, are changed to measure true value added and allow applications and policies encouraging real accountability. The bottom line is that teachers need to need the pedagogy they are being taught to use. If the success of their students does not depend on it, and in turn the success of the teachers does not depend on the success of the students, attempts to change classroom practice will continue to face considerable level of indifference.

CHAPTER 5. REVIEW OF EDUCATION POLICIES ENACTED: 1991-2006

96. In this chapter, Egypt's past and existing reform endeavors will be assessed. In particular, the focus will be to assess the objectives, strategies, and implementation performance of these reforms. The aim is to review what Egypt has already tried and tested in terms of policies and interventions to address some of the challenges discussed in the previous chapters before suggesting forward looking recommendations.

97. In the early part of the 1900s, Egypt underwent what can be termed a "renaissance" period, during which Egyptians became not only well versed in different aspects of their own civilization but also absorbed Western views and attempted to amalgamate them into an Arab modernity (Heggy, 2003). Subsequent to and building on successes of that period, great strides were made in Egypt's educational development, including extending access to all eligible children across the country. As a result, more Egyptian boys and girls became better educated than ever before. Illiteracy rates declined and education reached rural disadvantaged areas and population groups previously denied educational access.

98. However, as the previous chapters have illustrated, Egypt's educational system is not yet geared to face the challenges of the new century. The system neither provides markets with graduates with high and relevant quality education; nor has it helped erase inequalities of quality (outcomes and inputs) among different income groups, thereby providing greater possibilities of social and economic mobility. As noted in previous chapters, Egypt's education system today:

(i) exhibits inequality in education indicators, particularly with respect to quality and to the two lowest income quintiles; and

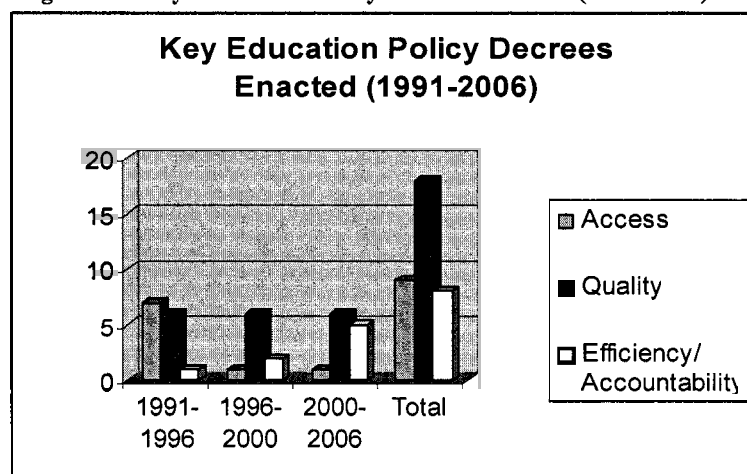
(ii) expends substantial resources in education (larger compared to other similar countries), leading to the conclusion that further improvements in equity and quality will have to be significantly financed through improved system efficiencies.

The Road Traveled: 1991-2006

99. In the past 15 years, which is the focus of our review, Egypt's education policies have been influenced both by a growing pool of students in the system and a growing demand for education, as well as by donor priorities and international conventions and directives (from Jomtien to Dakar).

100. At a broad level, evidence suggests that there has been a natural progression of the initiation of policies in Egypt that focused first on 'access to educational institutions,' and then on 'quality improvement' and 'system efficiency'.

Figure 36: Key Education Policy Decrees Enacted (1991-2006)



101. As can be seen in the figure above, out of the total number of 35 key education policy statements enacted through Presidential and Ministerial decrees in the past 15 years, the vast majority (18) are related to 'quality improvement,' while the others are related to 'improving access' (9) and 'improving efficiency' (8). However, a review of when these policies were initially enacted shows that while the number of 'quality' related decrees has remained stable over the 15 year period, most 'access' related decrees were introduced between 1991 and 1996, followed by the most 'efficiency' related decrees enacted between the period 2000-2006 (phase 3). This trend is consistent first with the types of issues Egypt started to face with (i) the large number of children who needed to be given access to schools and literacy programs in the first phase (when decrees such as the establishment of GAEB and codes for school construction were enacted); (ii) the need to improve quality between the period 2000-2006 (phase 2, when decrees such as those pertaining to prohibition of private tutoring and violence in schools were enacted); and then (iii) followed by the need to initiate mechanisms to improve efficiency and accountability in the system (when decrees such as those that determine school management responsibilities establishment of the National Authority for Quality Assurance and Accreditation were enacted).

102. Review of the donor support programs in the education sector during this period is also consistent with these themes. Notable among them were the Education Enhancement Program supported by the EU and the World Bank during phase 2 with a focus on both increasing access (in disadvantaged areas) and improving quality and the Alexandria Project supported by USAID during phase 3 with a focus on promoting school level management.

103. **While these are** general findings, a careful review of these policies reveals the following important characteristics:

104. *Few explicitly pro-poor education policies have been enacted.* 'Equal and Free Education Opportunities for All' is a principle enshrined in the 1971 Egyptian Constitution. This principle would ensure that every child, irrespective of economic or social background, would have access to quality education. But not all education policies enacted during these 15 years are fully consistent with this principle. An example of this 'contradiction' is the policy that established 'experimental language schools,' which have been successful in many regards and provided valuable lessons about how to structure and implement school-based management and other decentralization and participatory practices. However, these schools also often charge high fees. Such practices not only favor urban populations with higher incomes, but may be also crowding out the private sector that

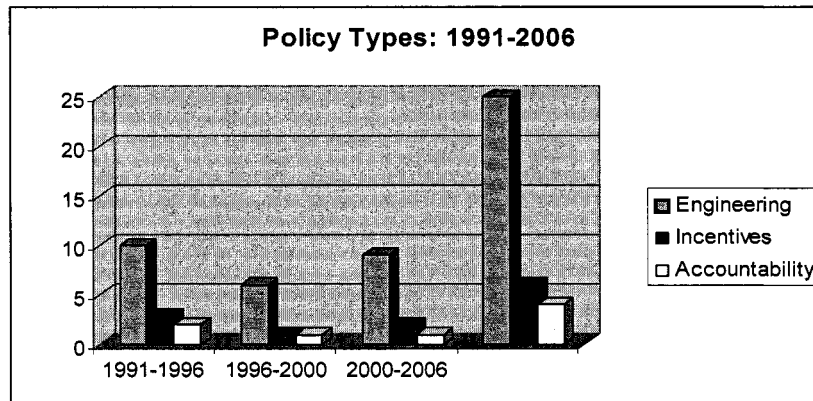
could be providing the same services at equal or lower cost. In addition, across a wide range of families and socio-economic groups, there is substantial household expenditures on education (see Chapter 4). Overall, therefore, it is unclear whether these policies have been enacted to benefit the poor and the vulnerable. In fact, a careful review of the policies shows that only 2 decrees (prohibiting private tutoring and authorizing NGOs to establish one-classroom schools) out of 35 were directed explicitly to resolving educational issues faced by the poor. Yet, as Skocpol (1991) and Wilson (1987) have argued “pro-poor” policy need not be explicitly pro-poor if well designed. Their well-known argument for what they call “targeting within universalism” posits that political feasibility and other criteria may make some policies that apply universally to a country’s entire population the most effective pro-poor strategy. Some examples for Egypt might be universal pre-primary education; improving TVET; increasing accountability through school-based management; or improving the testing, monitoring and evaluation systems. However, it is not clear that Egypt has pursued either strategies of “targeting within universalism” or explicitly pro-poor policies in the education sector. And despite the advantages of “targeting within universalism,” evidence from around the world suggests that without at least some specific and targeted, effective policies to benefit the poor and disadvantaged, it is more difficult to build a strong base of human capital and help reduce poverty.

105. *There has been a stronger focus on ‘form’ over ‘substance’.* Even though 18 out of 35 major decrees passed during the 15-year period relate to ‘improving quality,’ a careful review shows that specific interventions suggested emphasize ‘infrastructure and general regulations’ (e.g., decrees concerning regulating libraries and experimental boarding schools) rather than classroom processes designed to improve learning outcomes. Only 3 out of 35 decrees enacted were assessed as relevant for improving classroom teaching and learning.

106. Another example of this approach is in the area of ICT. ICT is increasingly used with a variety of objectives in the education process and Egypt has recently started to focus on this area. There is no study that assesses the educational outcomes on the use of ICT in Egypt. However, early indications show that Egypt’s strategy in ICT too-often follows the ‘install hardware first’ form prior to ‘training on use by teachers’ (substance). Evidence from numerous countries suggests that a ‘form over substance’ strategy is less effective in producing good learning achievement results than one that emphasizes ‘substance over form’. In India, for example, students in the state of Uttaranchal sit on floor mats but teachers and supervisors are heavily engaged in the educational process, ensuring that this state performs better on achievement scores than its neighbor, Uttar Pradesh where teacher and student engagement in classrooms is less strong). Fortunately, the MOE has shown both understanding of and ability to overcome this tendency. For instance, prior to installation, EEP trained teachers in basic computer skills to prepare teachers for programs utilizing technology in the classroom. And again, the Strategic plan devotes an entire chapter to developing better ICT policies.

107. *The implementation record of policies enacted has been varied.* It is difficult to assess the implementation progress and impact of each of the major policies enacted. However, a conceptual framework is used to first categorize the key policies and present a general review of implementation success among these categories.

Figure 37: Policy Types (1991-2006)



Source: Staff Analysis

108. According to the World Bank's "MENA Education Flagship Report" (2007), three conceptual models could be used to systematize and sort the types of policies that have been enacted: (i) the 'Engineering' model (includes interventions that have been tried to re-work the education system much like a mechanic would fix a car; e.g., re-organizing the educational levels, revising curriculum and teacher training models etc.); (ii) the 'Incentives' model (includes interventions that are designed to motivate key players in the system such as principals, administrators, supervisors, and teachers); and (iii) the 'Accountability' model (includes mechanisms that have been instituted to ensure accountability in the quantity and quality of the education services provided by various public 'service providers' (includes mechanisms to ensure community and parental participation in school related decision and monitoring of school performance)).

109. The 35 major policy decrees were categorized using this conceptual framework. As can be seen from the chart above, a substantial share of the policies over the three Phases are 'Engineering' types (25), followed by 'Incentives' types (6), and 'Accountability' types (4). Evidence suggests that Egypt's implementation of the 'Engineering' policies have a sound record, while those pertaining to 'Incentives' and 'Accountability' are not only fewer, but their implementation performance is weak. According to Galal (2002) and Steedman & Jups (2005), the Egyptian education system fails to motivate the actors involved to deliver good quality education. It leaves teachers with limited motivation to teach in the classroom because their salaries are low and follow a rigid civil service code. Their career development is not contingent on the results of their students. They are not penalized for the poor performance of students. At the same time they find it rewarding to teach outside the classroom. Similar motivational problems exist for other stakeholders in the educational process, including administrators and parents. Some progress has been made in creating a special category (cadre) for teachers within the civil service code, and the Strategic Plan proposes many excellent policies for improving accountability and incentives. The key, of course, will be implementing these proposals fully.

110. Among those policies that are related to 'Incentives' and 'Accountability,' most pertain to 'top down' regulations (such as regulations on parental engagement or regulations related to NGO involvement in the education sector). Rarely are these policies directly related to real 'incentives' and 'accountability' structures.

111. Evidence also suggests that the government's ability to implement the 'Engineering' types policies is supported by discreet institutions (such as GAEB for construction), while 'Incentives'

and ‘Accountability’ types require interventions that have to agree among a larger set of government institutions, such as Civil Service Ministry and Ministry of Local Development. For these types of policies to be implemented, therefore, it is important to coordinate at a ‘national level’.

112. Overall, therefore, policies in Egypt have tended to focus on legislation for changing behaviors rather than the customarily more effective strategy of incentives.

113. *Little attention has been paid to the role of the private and NGO sector.* Only 1 out of 35 decrees is aimed at incentivizing the NGOs and private sector. This is a significant gap in Egypt’s educational policies, as these organizations try to reach larger numbers of students with better quality education, which would help the government in saving and targeting limited public resources towards the poor and disadvantaged.

114. *Overall, the implementation of the policies enacted has had little traction in Egypt,* for two key reasons. First, based on the evidence collected through reports written on capacity in the public sector in general and the education sector in particular, it is evident that the general qualification of the staff as well as the training that is provided is very limited. On qualifications, while the MOE professional staff have higher education degrees, they are not necessarily in the specific areas that would qualify them to operate professionally. Furthermore, ongoing training of middle level staff is limited. Anecdotal evidence through interviews of staff in the decentralized levels suggests that training is limited for those outside the central MOE, except when donor projects require such training be provided. As a result, the MOE is composed of a few middle-level managers who have been trained and re-trained through project funds and are also in high demand for new projects management, and there are many others who have never received professional training. Such a limited human resource base in the Ministry has not been conducive to efficiently and effectively implementing policies that are approved by the cabinets and Parliament. As discussed, the issue of overstaffing in the MOE exasperates this issue.

115. Second, the MOE until recently only focused on specific studies and ‘theoretical’ policy making exercises and did little to plan and prioritize the implementation of these policies. The Strategic Planning process (2006-2007) in Egypt is a welcome development and should provide the direction needed to implement complex decrees and policies. In order for the process to succeed, the proposals in strategic planning process—particularly those in the Chapters on Human Resources and Professional development, School-Based Reform, and Monitoring and Evaluations—must be successfully implemented. The reforms are needed particularly in order to address the issue of incentives to the various stakeholders in the education system, including the administrative staff as well as private stakeholders and NGOs in order to tap into their initiatives and approaches to address the education issues facing Egypt.

CHAPTER 6. CONCLUSION, TOWARD POLICY OPTIONS

116. Egypt's education system is the largest in the MENA region and one of the largest in the world. As noted, at the pre-university level alone, the system enrolls over 16 million students and employs over 1.2 million teachers, administrators, and other workers. Total public as well as private spending on education is high by international standards. As a result, during the past decade, the government achieved increases in enrollment rates that were remarkable. Egypt is now facing new challenges in education: low and inequitably distributed educational quality. This could limit Egypt's potential to compete in a global economy.

117. The general issue of quality has been noted as a critical problem in Egypt's education system in scholarly papers, both local and international, as well as in sector reviews carried out by bi-lateral and multi-lateral agencies supporting the education sector (UN, 2002; World Bank, 2002). The issue of inequality has been customarily framed in the context of access to schools. Since most children now attend schools at the basic level, there is, rightly, a sense of accomplishment in having reduced the gap between Upper and Lower Egypt, across urban and rural areas, by gender, and among income groups. What remains to be clarified is whether the Egyptian system can improve quality for all students while also fostering relatively equal opportunities leading to relatively equal educational outcomes.

118. This note has explored these issues at a level of detail that is possible with available data. The key finding is that learning achievement and labor market outcomes are significantly different for a large disadvantaged group that extends well beyond the extreme poor or even the poor (approximately the bottom income quintile). More than 40 percent of eighth graders failed to reach the "low" threshold of quality on the recent TIMSS, which is relatively large when compared to other countries in the MENA region. Furthermore, the difference in learning outcomes of the rich versus the poor is among the greatest in the region. Finally, Egypt has the highest variation in MENA both between students and between schools.

119. The Egyptian education system has built-in mechanisms for measuring differences in outcomes that have a significant effect on future labor market or educational opportunities. At the end of preparatory school, two-thirds of all graduates are oriented towards technical secondary schools. Thus, by definition, technical school students have performed less well, according to whatever measure is used to orient students. This tracking tends to correlate with income level, and thus poorer students tend to end up in technical schools. Although we do not have data that can show the relative learning achievement of students once enrolled in secondary schools, the labor market outcomes of technical vs. general school graduates is telling: rates of returns for technical school graduates are lower than others and falling.

120. There are intrinsic and extrinsic causes to this purported disparity in outcomes and opportunities: it is, in part, due to the inequitable distribution of income and wealth and to the quality of instruction. Disentangling these factors is difficult, particularly in the Egyptian case where there is insufficient data to develop well substantiated conclusions. Nevertheless, several findings seem to indicate that certain characteristics of the education system contribute to the disparities discussed above. The analysis conducted in Chapter 4 suggests three such factors: (i) a two-tiered education system that tracks students rigidly into different parts of the education system, using poor instruments of assessment and helps perpetuate the inequalities noted earlier; (ii) an inefficient and inequitable distribution of human resources; and (iii) the prevalence of tutoring, which augments the effect of income on outcomes and opportunities. The policy options proposed

below aim to address these proximate variables of disparities in educational outcomes and opportunities.

Policy Options for Reducing unequal opportunities and outcomes

121. This Note has a pragmatic (Stewart, 1997⁵⁴) focus that takes the contextual, temporal, and historical domains into account. A review of policies (Chapter 5) shows that Egypt has tried over the decades to address the general issue of quality (among others), but has not focused adequately on its underlying determinants or on the problem of unequal outcomes. However, Egypt is potentially at a historic “reform moment” when the adoption and implementation of needed policy changes is more likely. Egypt is currently undergoing political as well as economic and sector reforms. Even civil service reform, for decades the elephant in the reform arena, appears to be seriously on the table for discussion. In this context, there is recognition of the need to develop a labor force that is adaptable, and with a capacity for life-long learning and flexibility. This offers a real window of opportunity for long lasting reforms in the education sector.

122. The following policy options are, in part, inspired by the recently completed MENA Education Flagship Report prepared by the World Bank. That report asserts that reforms in the past have tended to focus on the *engineering* of the education system (building schools, printing textbooks, hiring teachers), whereas today’s reforms should rely more on the use of *incentives* and *accountability* measures. By using incentives (e.g., new career structures, changes in examination policy) reform programs would be more likely to change the behavior of key agents of education systems. By introducing more ways – from the ministry to the school – to make the education system more accountable to stakeholders for results (e.g., better dissemination of information on the performance of the education system, more oversight by local actors), education providers would become more focused on continually producing higher quality instruction. Together with good engineering, the right incentive structure and effective accountability mechanisms can contribute more to successful reform.

I: Address structural issues entrenched in the current system and that perpetuate inequalities in education quality.

123. The number and proportion of technical secondary graduates in the Egyptian education system is large by international standards. As discussed in previous chapters, the examination system tracks lower performing students (of lower economic income status) who are unable to pass the high stakes examinations into the technical secondary track. These graduates find themselves in a system that is second-rate and one that does not prepare them to enter and excel in the labor market. Two key strategies can be considered to address these issues:

- a. **Improve the linkages between the general and technical secondary tracks.** There is consensus among international scholars⁵⁵ that technical tracks of secondary education should be better integrated and linked with the general stream. Increasingly more employers (including in Egypt) are looking for basic and generic skills among graduates rather than specific skills. In most countries, this has led to a blurring of differences between general and technical secondary education. Technical secondary schools should ensure that more core skills are taught, as these skills are in demand in the private sector. Furthermore, students should be provided greater flexibility to move between the technical and general tracks.

⁵⁴ Elements of Knowledge: Pragmatism, Logic, and Inquiry, Arthur Franklin Stewart, 1997

⁵⁵ Expanding Opportunities and Building Competencies for Young People: A New Agenda for Secondary Education, Cuadra, E. & Moreno, J. M, 2005

Allowing such transfers will provide students (especially those in the technical track) more time to choose and change their study interests and career choices. Finally, the private sector and other local economic actors should be involved in shaping technical school programs and curricula to ensure relevance to market needs.⁵⁶

- b. **Reform the examination system.** It will be difficult to transform the general-technical linkages or improve the general quality of education in Egypt until a major transformation of the current examination system is undertaken. First, the examination system needs to move away from rote memorization and more towards the evaluation of cognitive skills, problem solving, and readiness for life-long learning. Assessments should call upon students to write, make oral presentations, and work with other students to solve real-world problems. Furthermore, the *Thanawiya Amma* needs to be replaced or complemented by systematic and continuous assessments of student learning and achievement. A student's entire future should not depend on one test. Changing the examination system will be difficult, as any new instrument will need to develop the same level of legitimacy as the current approach. Thus examination reform will need to complement other improvements in education quality and engage in a formidable process of policy dialogue with all education stakeholders.

II. Improve the effectiveness and efficiency of education personnel.

124. Egyptian education staff are characterized by a key structural problem: they are the least paid in the region (compared to GDP per capita) and have the highest teacher: non-teacher ratio in the world (1:1.2). Thus, the most important resource of the educational system, the teacher, is neither motivated nor deployed so that instruction can improve in the classroom. Left on its own, this configuration is expected to only get worse, as the teaching force is young: senior teachers tend to teach fewer hours and most chances for promotion lead to administrative duties. Teachers are the key to any reform effort in order for Egyptian teachers to be transformed into professionals. Hence, any improvement in quality will depend on the *professionalization* of teachers (see Box below) and thus the right *incentives* will need to be put in place for teachers to make this transition. We propose the following four policy options in this regard.

- a. **Develop a new career structure for teachers.** Transforming teachers into professionals will require a very different incentive structure than what is presently in place. International experience shows that no changes in human resource management will be politically feasible or otherwise likely to succeed without some significant concessions on salaries and enhancements to working conditions for teachers. On the other hand, no concessions should be made without equally significant efficiency gains.⁵⁷ Teacher salaries will most certainly need to rise, but future career development will need to be pegged to qualifications and performance. The current seniority-based system of promotion will need to be augmented or eventually replaced by one based on level of competency and professional standards. As noted earlier, a large proportion of the stock of teachers is less than 44 years of age, which implies that any success in professionalizing teachers will have a long term effect.
- b. **Establish a new professional development infrastructure for teachers.** If career structures are changed to reflect competency as well as experience, then teacher support services and administration will need to be modified as a consequence. Traditional teacher training is

⁵⁶ The Mubarak-Kohl initiative is a good example of the linkages to the private sector and lessons learned and innovations from this and similar initiatives could be scaled-up;

⁵⁷ In future, detailed simulation modeling could lend insight into the financial costs of both concessions/enhancements and efficiency gains.

usually provided by grouping teachers together and providing all with identical content. If teachers are expected to meet specific criteria for promotion, then the organization of training must change in order to cater to the particular needs of individual teachers. Furthermore, establishing and maintaining new teacher standards will require new research and evaluation capacity. Finally, human resources management will need to be upgraded.

- c. **Reduce the number of non-teaching staff over time.** This will admittedly be the most difficult strategy to implement. If a new teacher career structure is successfully implemented, the pressure to become administrators may lessen in the future. For the present, the government may want to consider attrition, early retirement, or incentives to return to teaching (also possible with a new career structure). While such policies can be implemented on a pilot or even an ad hoc basis, eventually civil service reform will be required along with improved incentives and career prospects.

Box 1. Teacher Professionalization: Critical Factors for a Focus on Quality

Teachers are widely regarded as a key determinant of education quality. They are at once the pillars on which reforms are built and, at times, the biggest obstacles. In that respect, *“the motivation, skills and competences of teachers, trainers, other teaching staff and guidance and welfare services, as well as the quality of school leadership, are key factors in achieving high quality learning outcomes. The efforts of teaching staff should be supported by continuous professional development and by good cooperation with parents, pupil welfare services and the wider community. In addition, high quality teaching and learning environments ensure good conditions for learning and contribute to positive learning outcomes”* (Council of EU 2006).

Teacher professionalization⁵⁸ is part of the policy dialogue and development of teacher quality. It focuses on upgrading concrete professional skills and thus upgrading the teacher professional identity and status. In particular, professionalization in developing countries is seen as a way to build pride among teachers and encourage them to take greater responsibility for the outcomes of schooling. Key requirements for teacher professionalization include: (i) the establishment of teacher standards; (ii) a high level preparation (initial training); (3) a high level of professional development; and (iv) research based evidence on best practices of teaching. Also, teacher themselves have to help shape the standards of professional practice (Levine 1988; Darling Hammond 1987).

Education research suggests that achieving *teaching quality* requires a comprehensive teacher policy approach that leads to a creation of an equitably distribution professional teacher corps. The key consideration of such an approach are:

- (a) the hiring and deployment system and teacher profile;
- (b) teacher working conditions - especially in disadvantaged schools;
- (c) the role of teacher education and professional development in shaping teacher skills;
- (d) teacher capacity to renew professional practices (pedagogical practices);
- (e) the extent to which teachers are involved actors in the reform process.

⁵⁸ According to the international bibliography *Professionalization* is the process by which an occupation becomes a profession and it is distinct from *Professionalism* that refers to the quality of practice (Sockett 1990)

III. Reduce the opportunity cost of education for disadvantaged families.

125. It is difficult for the education system to ‘undo’ the negative impact of general poverty on children. The first priority of the government, therefore, should be to improve the overall economic conditions of families. In addition, reforms in the areas noted above will also help improve inequality of quality (and therefore success) for poorer children. Still, there are others ways in which the government can ensure that the children in poorer quintiles have educational opportunities similar to those who are in higher economic groups. Overall, political strategies involving “targeting within universalism” that benefit Egyptians of all incomes should be coupled with smaller, explicitly pro-poor policies in the education sector (See Chapter 6). In addition to the structural issues mentioned above—improving the linkages between the general and technical secondary tracks and reforming the examination system—two key strategies can be considered:

- a. **Promote the development of school-based management.** Much international research suggests that improving quality begins at the school level. By allowing schools to determine what is needed to improve outcomes and making resources available to implement these plans, programs are tailored to address specific constraints to education success. This is also true of schools serving disadvantaged households. Whereas some degree of uniformity and safeguards are essential, shifting key decision making to those who are closest to the education process will engender (a) taking greater ‘ownership’ among staff and teachers of the education process and students outcomes and (b) more role for parents in the education process, including taking greater engagement in major school decisions and in demanding excellence. This approach, particularly when entwined with the notion of decentralization, is sometimes deemed as risky where capacity is low and parents are poor and uneducated (see Box 2); it is not a panacea to reducing differences in school outcomes and opportunities. However, evidence from countries as diverse as Bangladesh to the United States shows that school-based management is especially effective in improving the academic achievement and social skills of low-income students. Preliminary evidence from the programs tried in Egypt shows similar results and a key strategy to consider is scaling-up these successful approaches. When hard work is rewarded and institutions are held accountable for performance, even the most disadvantaged communities see their schools improve in quality.

Box 2. Decentralization for improving inequality of quality

In the policy dialogue, decentralization is often advocated as “quality and efficiency enhancer.” What is not discussed in detail is that decentralization may also exacerbate inequities across geographic jurisdictions, and so must be implemented with that cautionary caveat in mind. Still, Egypt is relatively unique in clearly defining improved quality of schooling as the primary goal of decentralization.

Egypt has now considerable experiences of smaller pilot projects and specific donor-supported efforts, and these prove instructive. However, the timing may be opportune to concentrate on potential reforms that can be implemented (short-, medium- and long-term) across the entire school system, and there is considerable risk in drawing too directly from such pilot experiences to date without carefully considering the differing contexts across schools and governorates as well as the total costs of such reforms. And of course, decentralization reforms are really an amalgamation of hundreds of key decisions that must be woven into a coherent strategy. The devil is in the details, as the saying goes, and to date, details are scarce.

Decentralization and governance issues have received considerable attention in myriad reports by both donors and the government, so we do not devote extensive coverage to it here. It is clear that

the MOE is going to implement a “decentralization” reform, perhaps in conjunction with a broader decentralization of government (WB PER report, 2005). While there is potential for improved service provision — both in terms of efficiency and equity — decentralization should not be considered the major education reform particularly to improve quality. “Decentralization is a means, not an ends” has become a cliché with all too much continued salience. Absent other reforms that have received more emphasis in this report, decentralization is likely to achieve little more than “de-responsibility” for the problems inherent in the system. Decentralization must, therefore, be done carefully in a manner consistent with and support of such reforms.

The most contentious issues are likely to revolve around financing — in particular what revenues are going to be given to what level to control. Here, governors will certainly make a strong pitch to control resources and as mentioned, it is not clear that this would be beneficial to the education system (perhaps school construction and maintenance would be more clear cut candidates for decentralization, but that, too, would depend upon a transparent and enforceable set of guidelines and controls). Compensatory financing to overcome inequities will be crucial, and the central government must be committed to providing sufficient funds to do so, otherwise, equity will surely suffer under decentralization.

In our view, the single most important issue with respect to decentralization, however, will be effective monitoring and evaluation, in particular the measurement of quality of instruction and student achievement. International experience clearly shows that the role of the central ministry in this regard is crucial for successful decentralization efforts. Performing this function well always requires the central ministry to evolve and upgrade its capacity in monitoring and evaluation. The MOE will need to develop a set of measurable and reliable indicators for the on-going performance and results-based monitoring of decentralized units to ensure accountability; however, this issue relates closely to the need to redirect the entire school system in terms of the kinds of results and measures of performance that a modern, transformed (and perhaps decentralized) education system in Egypt would look like. That is, student performance will have to be measured at the school level (and perhaps at the classroom level) through both testing and other means of comprehensive assessment. Teacher performance will also need to be evaluated. If the overall driver of the system remains the high-stakes testing benchmarks, culminating in the *Thanawiya Amma*, then there is little hope that even the best designed evaluation mechanisms will have the kind of impact (both formative and summative) that is necessary for the promise of decentralization to be fulfilled.

b. Reduce the need for tutoring. Essentially, tutoring arises where students believe they are not receiving classroom education necessary to succeed, compensating for a shortcoming in the system. And the need to turn to tutoring has greater consequences for the poor. Hopefully, a great many of the strategies described earlier should lessen the need to turn to tutoring: a fairer examination system; more diversity in educational opportunities; better incentives to display their competencies in the classroom; and better school management. While these measures will likely release the pressures ‘fueling’ the private tutoring phenomenon, the effect will probably be in the long term. Consequently, the government must find other ways to control this phenomenon. Banning tutoring is usually an ineffectual move. However, many countries have regulated tutoring, controlling the quality and providing limits to whom and how often a teacher may tutor. Many other countries have successfully turned tutoring from a scourge into a profession. The success of such efforts will nevertheless depend in part on the implementation of the strategies discussed above.

IV. Improve monitoring of educational opportunities and outcomes.

126. A principal challenge faced by the researchers compiling the information necessary for this Note is the paucity of good information on the quality of education and the distribution of that quality. Due to anecdotal evidence, long experience with the sector, and observation of many Egyptian stakeholders, we are sure that a much more convincing argument regarding disparities of educational outcomes could have been made.

127. As mentioned earlier, the World Bank's most recent work on education in the MENA region advocates for a greater use of incentives and accountability measures to achieve reform goals. However, for such approaches to work, decision makers and the public need accurate, timely and widely disseminated information about the education system.⁵⁹

- a. **Gather more information regarding the distribution of inputs.** This Note has not empirically established that there are significant disparities in educational resources and inputs across governorates. As mentioned above, there is much anecdotal evidence from within and outside of Egypt, that educational inputs, such as qualified teachers and administrators, as well as financial resources (both public and private), appear to be scarcer in rural disadvantaged areas. Such disparities in inputs are likely to produce significant impact on the achievement of students in these areas. Since not much is known about these disparities, specific studies would be recommended to investigate in greater detail both the allocation and use of financial and human resources in different governorates. This would include resources such as teachers and their qualifications, inspectors and their qualifications, levels of financial and technical support to schools, construction budgets, and sources of revenue for operations and maintenance.⁶⁰
- b. **Monitor education outcomes and opportunities at the household, school and national levels.** Information systems need to be designed with the goal of monitoring the disparity in educational outcomes and opportunities. The government does not need to be the only source of data collection or analysis, and it is to everyone's advantage if sources of information and analysis can be diversified. Thus, the government can encourage civil society organizations to monitor education progress and report their findings.
- c. **Participate in internationally recognized achievement, evaluation and testing exercises.** It is critical for Egypt to continue to participate in the TIMSS, including the 4th grade evaluation. With the data currently available through the most recent TIMSS, extensive analysis can be conducted to detect what might be differentiating Egypt from its neighbors in terms of educational outcomes and opportunities. Consideration should be given to participating in PIRLS, with its focus on reading and early learning. PISA participation is crucial because it assesses students near the end of compulsory education, is considered by many analysts to be a benchmark of overall educational quality (see Hanushek 2004), and for Egypt, PISA correlates most closely with the age of students taking the *Thanawiya Amma*. Thus participating in PISA would allow the most direct assessment of how well or poorly the testing system in Egypt encourages students to learn what is needed to be competitive in a global economy.

⁵⁹ When the status of education and achievements outcomes (especially for those who are poor and disadvantaged) have been reported by civil society groups, crucial changes were initiated among districts and governorates in countries such as Peru and India.

⁶⁰ This note has not concentrated on school construction because several other reports do so in great detail (See Moll 2006 and World Bank, PER, 2005). Overall, the construction program remains large and poorly targeted in Egypt, leading to many pre-schools and schools remaining empty while becoming overcrowded, an issue that requires thorough study.

V. Adopt a sector-wide perspective

128. The agenda proposed above is ambitious. Although this may be a “reform moment” as argued earlier, the Ministry of Education cannot be expected to undertake these policies alone. They will require the implication of the entire Egyptian polity and society. The Ministry will need to be engaged in significant advocacy within and outside of government to muster support for this agenda.

129. In this vein, one of the most important factors for the success of this reform agenda, which essentially focuses on improving the quality of pre-university education, will be the involvement of the post-secondary sector. Many of the issues that have been discussed in this Note in fact lie at the interface of pre-university and higher education. As mentioned in Chapter 3, students are “pulled” through the different levels of education by the labor market and by the higher levels of the education system. As a consequence, the signals sent by universities shape the priorities throughout the levels of instruction. In the case of Egypt (which is not unique in this respect), these signals emphasize selection over the transfer of fundamental skills for all. Few of the policy options discussed in this Note will be effective if corresponding decisions are not taken at the level of higher education. Developing a sector-wide perspective is particularly important for the following four areas:

- a. **Admissions policy:** No change to the examination system at pre-university levels will be accepted by the general public if there is not a corresponding change to the university admissions policy. The *Thanawiya Amma* is a high stakes exam because there is no other instrument that determines university admission and, more importantly, acceptance to the faculties with the highest demand. If the *Thanawiya Amma* is changed (e.g., the exam becomes more focused on skills and competencies rather than repetition of facts; the fact that the score of the *Thanawiya Amma* is partly determined by marks at secondary school), then the way in which universities select candidates will have to change as well (e.g., varying admissions criteria by faculties and universities, such as the oral interviews conducted by Colleges of Education prior to admission).
- b. **Technical vs. general education:** The problem of technical and general secondary education is duplicated at the subsequent level of education, with similar issues. Technical college is the destination of those graduates who scored the least well on the *Thanawiya Amma* and a small group of technical school graduates. Essentially, the problem at both levels is the lack of opportunity (either for further study or for gainful employment). However, to address this vicious circle of successive orientation of the least performing students, it will be necessary to establish a comprehensive perspective of the overall place of technical education within the entire education sector. Any changes to the relationship of technical to general education (e.g., rules for transfer; opportunities for a more comprehensive education) will require coordination on both sides.
- c. **Teacher policy:** Personnel issues at the higher education level are not all that different from those found in primary and secondary school: low pay; overstaffing; few incentives to change behaviors or provide a higher quality of instruction; and parallel economic activities. It will likely be difficult for the issues that affect both ministries to be addressed simultaneously without a general framework of civil service reform. However, in the area of teacher support services, new linkages should be created with the universities, particularly with the faculties of education. The MOE will require assistance establishing the professional development services required by a new career structure. Faculties of education could play a new role of being at the

service of any effort to professionalize the teacher corps by providing support in the areas of research, training design and assessment

- d. **Comprehensive planning:** Strategic planning has traditionally been undertaken separately, i.e., the MOHE prepares for the future development of the universities and colleges while the MOE does the same for primary and secondary schools. Considering the above points and the future objectives of government, working in silos is inefficient and can be counterproductive. Never before has it been so important for the two ministries to program and plan in a synchronized manner.

Conclusion

130. The MOE has recently developed a Strategic Plan for the next five years. It aims to put front and center the problematic of quality. Many of the policy options proposed earlier are already included in the Strategic Plan. The Plan includes twelve programs, of which four include similar strategies: (i) secondary education modernization; (ii) school-based reform; (iii) teacher cadre; and (iv) strategic management. The general design of these programs has been established and the implementation plans and priorities are in the process of elaboration.

131. The policies discussed earlier are only a starting point for a true transformation of an education system which puts the learner front and center. It has always been the intent of government to have all children in the country learn equally well. Now, with the current political and economic context, and the commitment of education authorities to reform, the right incentive and accountability mechanisms can be put in place to make this a reality.

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