The Paradox of Education and Unemployment in Egypt

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Working Paper No. 67
March 2002*

An earlier version of this paper was presented at the ECES conference on Employment and Unemployment in Egypt, which was held in Cairo, January 13-14, 2002. The author would like to thank Prof. Mona El Baradei and conference participants for very helpful comments. Thanks also go to Nada Massoud for her research assistance in preparing the paper. The usual disclaimers apply.

* Reprinted in July 2003.

Abstract

Although Egypt has made substantial progress with respect to access to education, the education system is not providing markets with the quantity and quality of educated individuals most in demand. This paper addresses this paradox as an economics phenomenon and suggests that education reform should go beyond building schools, training teachers and improving curriculum. The proposed approach first deals with aligning *incentives* of students, teachers, parents, bureaucrats and private sector education providers. Secondly, it involves market reform to expand the *demand for labor*. The third and final set of reforms is aimed at corrections of *market failure* to ensure efficient delivery of education equitably.

ملخص

على الرغم من أن نظام التعليم في مصر قد حقق تقدما كبيرا فيما يتعلق بانتشار التعليم، إلا أنه مازال في حاجة لتخريج أعداد ونوعية العمالة المطلوبة في الأسواق لتحقيق التنمية الاقتصادية. وتتناول الورقة هذه الظاهرة من منظور اقتصادي، مؤكدة أن عملية إصلاح التعليم يجب ألا تقتصر على إنشاء مدارس جديدة وتدريب المعلمين وإصلاح المناهج الدراسية. وتقترح هذه الدراسة منهجا يتضمن ثلاثة محاور رئيسية للنهوض بالعملية التعليمية، وهي: ضرورة إعادة النظر في حوافز الطلاب والمعلمين والآباء والموظفين والتعليم الخاص بما يخدم الهدف النهائي؛ وإصلاح الأسواق من أجل زيادة الطلب على العمالة، وأخيرا القيام بحزمة من الإصلاحات هدفها معالجة أوجه القصور في آليات السوق لضمان توفير مستوى من التعليم يتسم بالعدالة والكفاءة.

I. Introduction

The empirical evidence dealing with education has highlighted a number of paradoxes, most of which apply to Egypt (Birdsall and O'Connell, 1999; UNDP, 1998; El Baradei, 2000; Fergany, 1998; Shafik, 1996; Shihata, 1999). For example, it has been pointed out that big spending on education is often associated with small returns. Although governments often stress fairness in education, the literature has brought to the forefront a systematic bias in favor of higher education at the expense of basic education, and boys at the expense of girls. It further uncovered the "false entitlement" of free education, with the surge in the cost of private tutoring and other incidentals. This paper deals with yet another paradox, namely, the persistent mismatch between the supply of and demand for certain graduates. While this observation reflects deficiencies on the supply of and demand for labor broadly, the main focus of this paper is on education reforms.[1]

The success of education reforms in Egypt over the past 30 years is not in question. As will be elaborated below, more Egyptian boys and girls are now better educated than ever before. Literacy rates have improved and education has reached social classes previously denied access to the system. What is becoming evident, however, is that the education system is not providing markets with the quantity and quality of educated individuals most in demand. Clearly something is not working. To better the education system and make it more consistent with the demand for labor, it is important to address such questions as: why did past reform efforts fall short of their objectives? Is there an alternative approach to future reform efforts? Finally, what are the components of the recommended approach?

In response to these questions, this paper advocates moving away from viewing education as an "engineering" process to viewing it as an economics phenomenon. Under the proposed approach, education reforms go beyond building schools, training teachers and improving the curriculum and focus on the incentives and returns to education, while paying attention to equity. The proposed approach comprises three sets of reforms. The first deals with aligning the *incentives* of students, teachers, parents, bureaucrats and increasingly private sector education providers to provide high quality education. The second involves market reform to expand the *demand for*

[1] That is not to say that demand itself should be taken as given. On the contrary, a key factor for resolving the unemployment problem broadly lies in more rapid, labor intensive, and outward oriented economic growth. For further discussion of these dimensions of the problem in Egypt, see Birdsall and O'Connell (1999) and Sachs (1996).

labor. The third and final set of reforms is aimed at corrections of *market failure* to ensure the efficient delivery of education equitably.

To elaborate this view and solidify its foundations, the rest of the paper is organized as follows. Section II takes stock of progress to date. Next, an attempt is made to explain the limitations of reforms to date. Section IV draws policy recommendations.

II. Education and Unemployment in Egypt

This section reviews educational attainment in Egypt. It also presents evidence on the mismatch between educational outcomes and market demand.

Educational Attainment

Several studies have assessed educational attainment in Egypt (Birdsall and O'Connell, 1999; El Baradei, 2000; Fergany, 1998; UNDP, 1998). These studies converge on one basic conclusion. Egypt made substantial progress with respect to access to education, but not so much progress on improving the quality of education.

On *quantity*, Fergany (1998) indicates that the mean years of schooling for the population 10 years of age and older went up from 1.7 years in 1960 to 5 years in 1996, an improvement of almost threefold. Data for the period 1970 to 1997 show impressive results at all levels of education for boys and girls (Table 1). Gross enrollment rates in pre-primary education increased the most (six fold) over the period, but the initial base was relatively modest. The expansion in primary education was sufficient to essentially cover the entire population by 1997. In secondary education, some 78 percent of the population within the relevant age group was enrolled in 1997, compared with only 28.4 in 1970. The improvement in the gross rates of enrollment in higher education was no less dramatic, going up from 6.9 percent in 1970 to 20.2 percent in 1996. Across all levels of education, the gender gap with respect to enrollment has practically vanished over the period from 1970 to 1997.

Table 1: Evolution of Enrollment Rates[1] in Egypt, 1970-1997

	1970	1975	1980	1985	1990	1995	1996	1997	% change 1970-97
Pre-primary									
Total	1.2	1.9	3.2	4.5	6.1	8.0	8.9	N.A.	641.7
Male	1.2	1.9	3.2	4.5	6.1	8.2	9.0	N.A.	650.0
Female	1.3	2.0	3.3	4.5	6.1	7.9	8.7	N.A.	569.2
Primary[2]									
Total	67.6	70.0	73.1	85.4	93.8	99.8	100.5	101.1	49.6
Male	81.4	83.5	84.4	93.9	101.4	106.2	107.0	107.5	32.1
Female	52.8	55.7	61.0	76.2	85.8	93.1	93.7	94.3	78.6
Secondary[3]									
Total	28.4	40.3	50.5	61.4	76.2	76.5	74.9	78.3	175.7
Male	37.8	51.1	61.3	71.6	83.8	82.2	79.6	83.0	119.6
Female	18.7	28.6	38.8	50.4	68.1	70.5	69.9	73.3	292.0
Higher									
Total	6.9	11.7	16.1	18.1	15.8	20.2	22.6	N.A.	227.5
Male	10.0	16.0	21.3	24.5	20.0	24.2	27.1	N.A.	171.0
Female	3.7	7.2	10.6	11.2	11.4	15.9	17.8	N.A.	381.1

Notes:

1. Defined as total enrollment at a specific level of education, regardless of age, as a percent of the school population corresponding to the same level of education in a given school year.
2. Includes first 5 years of schooling.
3. Includes the 6 years of schooling following primary.

Sources: UNESCO Statistical Yearbook (2000); and Partnership on Sustainable Strategies for Girls Education Organization (2001)

Compared to countries at a similar level of per capita income, Egypt fares reasonably well (Table 2). The average male enrollment in Egypt between 1994 and 1999 stood at 7.4 years, which exceeded the averages for the Dominican Republic, Guatemala, Morocco and Indonesia. Egypt, however, lags behind all countries in the sample, except Guatemala and Morocco, in female enrollment. The achievements, noted above, on closing the gender gap in recent years have not wiped out the adverse effects of decades of limited enrollment of girls.

Table 2. Education Attainment Across a Sample of Developing Countries

Country	Per Capita GNP ($) 1997	Average years of schooling 1994-99	
		Female	Male
Dominican Republic	1,750	6.8	6.8
Guatemala	1,580	3.8	4.6
Kazakhstan	1,350	9.5	10.5
Morocco	1,260	2.0	3.7
Egypt	***1,200***	***4.9***	***7.4***
Philippines	1,200	8.3	8.2
Indonesia	1,110	5.2	6.8
Uzbekistan	1,020	9.7	10.7
Bolivia	970	6.1	7.9

** In population over 15 years*

Source: UNESCO (2000) World Education Report 2000 and Filmer (1998)

On the *quality* of education, progress has been much less impressive. Systematic evidence comparing the knowledge acquired by Egyptian students in different fields with similar students elsewhere is not available. There is evidence, however, to suggest that increased access has been at the expense of quality. The government expenditure on education, while a respectable 4-5 percent of GNP, was insufficient to provide full access to good quality education for a rapidly growing population. Something had to cave in. School maintenance suffered; the number of students per teacher increased; and teachers resorted to private tutoring to compensate for low salaries. While somewhat outdated, it was estimated in 1992 that 40 percent of the school buildings in Egypt required maintenance (UNESCWA, 1995). It was also reported that the mean class density increased from 39.9 students in 1980/81 to 45.1 in 1990/91. The proportion of students taking private lessons in 1997/98 was more than 51 percent of the total, including students of relatively poor socio-economic background (Table 3).

Table 3. Percentage of Students Taking Private Lessons by Educational Level and Socio-economic Group, 1997/98.

Educational Level	Socio-economic group		
	Poor	Middle	Rich
Basic	45.8	61.4	64.6
Secondary	66.1	88.6	83.6
High Institutes	53.5	67.7	85.7
University	7.8	11.7	16.2
Total	51.3	63.2	60.5

Source: UNDP (1998) Egypt Human Development Report 1997/98

With respect to efficiency, available data show that the percentage of dropouts in primary and preparatory schools in the early 1990s was relatively high, exceeding 13 percent (Table 4). This may reflect the low returns to education, especially among the poor. Although some progress was made between 1989/90 and 1994/95, this progress was marginal. Similar observations can be detected by looking at the level and trend of the actual years of studying relative to the formal years of schooling within each level of education, or the ratio of graduates relative to the number of students in the first year. Both indicators suggest that the rate of repeating is relatively high and students are not acquiring the knowledge they are supposed to gain.

Table 4. Efficiency in Primary and Preparatory Education, 1989/90-1994/95.

	Dropping Percent	Actual years of studying[1]	Ratio of graduates to the number of students in the first year
Primary			
1989/90	12.90	6.29	81.71
1990/91	27.94	6.12	84.20
1991/92	22.45	6.83	89.46
1992/93	15.74	5.63	92.89
Preparatory			
1991/92	21.91	3.91	78.03
1992/93	12.49	3.69	87.57
1993/94	13.18	3.70	86.82
1994/95	12.90	3.60	87.10

Note: Average studying school years are 5 for primary and 3 for preparatory. Actual years of studying exceeding these averages are due to repeating minus drop out.
Source: UNDP (1998) Egypt Human Development Report 1998/99.

Education versus Unemployment

If incentives, broadly defined, were aligned, the flow of new graduates would be of the educational categories most in demand. Persistent increase in the number of graduates of certain educational categories to a pool of unemployment suggests that the education system is in need of reform. This section explores whether the education system in Egypt is expanding in the educational categories where unemployment is relatively low.

First consider available data on the pattern of unemployment by educational status (Table 5). The data for 1998 show that unemployment is concentrated among the more educated, especially those with intermediate education (55 percent of the total). Additionally, the problem facing the group with intermediate education is only made more acute by the fact that over the period 2001/2005, their demand is expected to be as low as 5 percent of the total.

Table 5. Labor Demand and Unemployment by Educational Status

	Labor Force* 1998		Unemployment 1998		Estimated Labor Demand 2001-2005	
Sector	**'000**	**%**	**'000**	**%**	**'000**	**%**
Illiterate	7192	33	135	8		
Read & Write	2076	9	73	4		
Below Intermediate	3522	16	143	8	531	66
Intermediate	5305	24	947	55	28	4
Above Intermediate	1267	6	181	11	108	13
University & Higher	2705	12	242	14	138	17
Total	22061	100	1721	100	805	100

Source: CAPMAS, Labor Force & Unemployment. Labor Market Demand: Labor Demand Survey in Labor Market.

Consider next the pattern of new entrants to the labor force by educational status in the same year (Table 6). The data show that almost half of the new entrants to the market carry an intermediate level of education, the very same group with the highest level of unemployment. It is also the group whose future demand is expected to be the lowest. This partial evidence suggests a mismatch between the pattern of educational outcomes and market demand.

Table 6. New Entrants to the Labor Market by Educational Status, 1998/99 ('000, unless otherwise specified)

Educational Stage	Less than Intermediate	Intermediate	Above Intermediate	Higher Degrees	Total
Number of graduates	N.A.	559	56	267	882
Drop-outs	337	49			386
Total graduates and drop-outs	337	608	56	267	1268
Percent of total	26.6	47.9	4.4	21.1	100.0

Source: Noueir, Tarek, 2001.

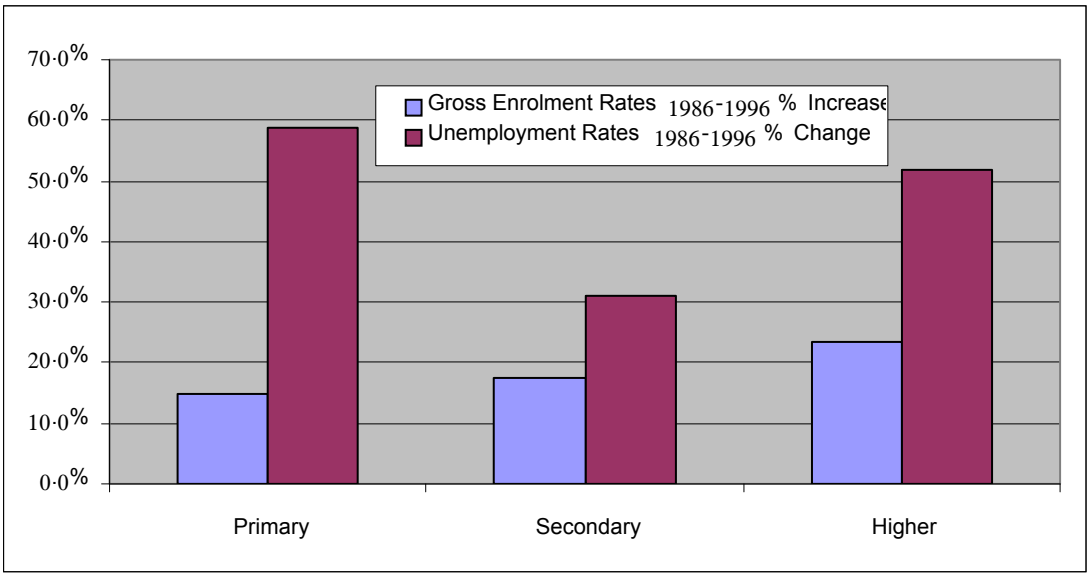
The above comparison is only for one year. However, extending the comparison over two distant points in time does not change the above conclusion. Table 7 and Figure 1 show the evolution of enrollment in education at different levels as well as the unemployment rates corresponding to each level in 1986 and 1996. These data show a clear pattern. Education enrollment increased at all levels between 1986 and 1996, especially at the level of higher education. At the same time, official unemployment rates declined across the board, especially for those with primary education. The important point, however, is that unemployment rates fell least among graduates with intermediate education, lending further support to the point of a mismatch between educational outcomes and demand.

Table 7. Evolution of Enrollment in Education and Unemployment in Egypt, 1986 and 1996

	Gross Enrolment Rates			Unemployment Rates		
	1986	1996	% Change	1986	1996	% Change
Primary*	87.6	100.5	14.7	10.9	4.5	-58.7
Secondary**	63.7	74.9	17.6	20.2	13.9	-31.0
Higher	18.3	22.6	23.5	10.6	5.1	-51.8

Notes:
* Includes first 5 years of schooling.
** Includes the six years of schooling following primary
Sources: UNESCO Statistical Yearbook 2000, <http://www.almishkat.org/engdoc99/rn13/rn13_02.htm> and Partnership on Sustainable Strategies for Girls Education (2001)
<http://www.girlseducation.org/PGE_active_pages/GirlsEdResources/UsefulData/CountryEdProf/b-right2.asp?CountryID=126&Country=Egypt>

Figure 1. Evolution of Enrollment and Unemployment in Egypt (1986 and 1996)



Sources: UNESCO Statistical Yearbook 2000, <http://www.almishkat.org/engdoc99/rn13/rn13_02.htm> and Partnership on Sustainable Strategies for Girls Education (2001) http://www.girlseducation.org/PGE_active_pages/GirlsEdResources/UsefulData/CountryEdProf/b-right2.asp?CountryID=126&Country=Egypt

Finally, there is further evidence to support the conclusion that educational outcomes are not consistent with market demand. This evidence comes from random surveys of the views of the private sector regarding the constraints they face in initiating and conducting their business in Egypt. Fawzy (1999) found that the lack of skilled labor and managerial staff both rank high on the list of the constraints. A similar conclusion was reached by other surveys (Galal, 1996; World Bank, 1994). Not only is the education system producing the wrong mix, but also the wrong quality. Training is one way of compensating for these deficiencies, but that too is in need of significant reforms (UNDP and ILO, 2001).

III. Why is Education Not Delivering?

Clearly Egypt has invested heavily in expanding education. These efforts paid off in greater enrollment, across gender and geographical locations. However, it is also clear that the system has not provided graduates with the necessary skills to realize the potential private and social benefits of education. The most apparent shortcoming of the system is its inability to produce the appropriate mix and quality to meet demand. This section attempts to explain why.

The basic explanation is simple. It is based on the view that the current approach to education focuses too much on quantity and too little on quality. It views education as an input/output table or a production function, rather than a process of

maximization of private and social returns across the entire population. In short, incentives, broadly defined, are lacking. The rest of this section elaborates this basic proposition under three headings: supply related disincentives, demand related disincentives, and disincentives related to market failure.

Supply Related Disincentives

Confronted with a low and uneven distribution of education, it is understandable that Egypt focused initially on the expansion of education for all. It was also natural for the government to allocate public funds to building schools, improving the curriculum, training teachers, and, more recently, introducing technology in the classroom. As the main provider of education, the government also found it convenient to own, manage and supervise the education facilities and processes.

While this approach may have been appropriate in the past, it is not in a more market-oriented economy. It 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 with respect to parents, students and supervisors. Parents do not have a voice or an exit possibility. They are not engaged in the management of schools, selection of teachers, and frequently have no choice but to enroll their children in the only available school in the neighborhood. When they have the choice, they lack sufficient information about the rating of schools according to their achievements. Given the interest in providing their children with the best education possible, the incentives of parents are aligned with those of the teachers in their reliance on private tutoring. No policing measures are likely to change this collusion. When it comes to students, their motivation seems to be focused on memorizing to obtain high grades so as to qualify for prestigious branches of education.

The limited incentives on the part of bureaucrats to efficiently monitor, regulate and improve the education process are well known. Like teachers, their salaries are low, their performance is difficult to assess, and their career is not linked to measurable achievements. While tending to be process rather than outcome oriented,

excessive centralization gives them enormous power over the expansion and oversight of schools. Centralization creates a distance between those responsible for delivering the education services and those who benefit from education the most. Both the teachers and managers of schools only have incentives to respond to superiors at the Center instead of to parents and students. It also makes monitoring more difficult because information is costly to collect and process.

The erosion of quality in the education system in Egypt cannot, however, be fully blamed on lack of incentives on the supply side. There are additional reasons too. The increase in the size of school-age cohorts must have played a role. Also, the rapid expansion in education means the inclusion of children from poorer families with less preschool skills. Another contributing factor is the size and allocation of public funds, which tend to favor higher education at the expense of basic education (see Table 8 below).

Table 8: Per capita Government Spending on Education 1995/96

	Per Capita Spending	
	LE	**% Of per capita GNP**
Unit cost of current expenditure		
Primary	356	9.1
Preparatory	521	13.4
Secondary	746	19.2
Higher education	2811	72.4
Unit cost of investment		
Primary	100	2.5
Preparatory	121	3.1
Secondary	165	4.2
Higher education	656	16.8
Unit cost of total expenditure		
Primary	456	11.7
Preparatory	642	16.5
Secondary	911	23.4
Higher education	3467	89.2

Source: Egypt Human Development Report, several issues

Demand Related Disincentives

Even if incentives were aligned on the supply side to produce an appropriate mix of good quality graduates, unemployment may still persist for reasons on the demand side. In particular, if demand is slow, distorted or skewed because of rigidities in the labor market, the expansion of education will not necessarily translate into higher growth and more jobs.[2]

In the case of Egypt, all three disincentives on the demand side are present to some degree. Economic growth has been too slow to absorb the new entrants into the

[2] This point has been eloquently discussed by Easterly (2001).

labor market, especially in the last three years. The reasons for the recent slow down are multiple. Some are related to macroeconomic management (as discussed, for example, by Abdel Khalek, 2001; Galal and El Rifaie, 2000; Panizza, 2001). The main culprit here is the exchange rate, which the government attempted until recently to keep fixed at all costs, including hiking up interest rate. Other reasons are structural in character, involving mainly a large saving-investment gap. This gap is estimated at $4-6 billion a year if Egypt grows at 6 percent per annum and absorb the new entrants into the labor market (Galal, 1998).

The importance of growth for absorbing new graduates cannot be overemphasized. The pattern of labor demand, shown in table 9, leaves little room for productive employment in the government or the public enterprise sector. Overstaffing and underemployment preclude the government as a viable option. Privatization precludes the public enterprise sector, which itself suffers from excess labor. This leaves the private sector as the most promising avenue for creating jobs. If the private sector is unable to invest and grow, the demand for the new graduates will not materialize.

Table 9. Distribution by Economic Attainment Across Sectors of Employment, (Education attainment, age 10 and above)

	Below intermediate*			**Intermediate and above****			**University and above**		
Sector	T	M	F	T	M	F	T	M	F
Government	7	10.5	0.9	47.2	37.6	67.8	55.6	20.3	69.9
Public Enterprise	5.3	7.9	0.7	15.8	17.7	11.8	14.7	16.3	10.2
Private Agric	57.6	43.3	81.8	9.6	11.2	6.1	2.6	3.5	0.2
Private non-Agric.	29.7	37.5	16.4	24.5	29.7	13.4	23	24.7	15.5
All sector	100	100	100	100	100	100	100	100	100

Source: Bridsall and O'Connell (1999)

This takes us to policy-induced distortions, which limit the demand for labor. One such example is the fact that there is still a significant anti-export bias[3], despite active government policies to open up the economy. The origin of this bias has been analyzed in a recent study (Galal and Fawzy, 2001). It stems from a combination of an overvalued exchange rate, relatively high tariffs on imports, high corporate tax and interest rates, as well as relatively high logistical and transaction costs. As a result, the bundle of disincentives facing Egyptian producers makes it more profitable for them to

[3] The anti-export bias is dealt with here as an example of policy-induced distortion, however other examples can be found.

sell in the domestic market rather than abroad, thereby forgoing the opportunity of capitalizing on Egypt's abundant labor and taking advantage of economies of scale.

More broadly, the government succeeded in implementing a stabilization program in the 1990s, which arrested inflation and restored internal balance. It also succeeded in reducing trade barriers, made headway on privatization, upgraded and expanded infrastructure, and initiated other structural reforms. The reform process remains incomplete, however, which may explain why the results have been modest in terms of growth and job creation.

Beside slow economic growth and policy distortions, features of the labor market itself may have also weakened the demand for labor. One example is labor regulations, which essentially preclude firing staff for any reason other than grave misconduct. When disputes erupt, they last for years in courts. Paradoxically, the regulation does not protect workers in the informal sector, although they constitute some 80 percent of total private sector employment (Gillespie, 1997). Another example is the investment policy, which tends to favor capital at the expense of labor through a host of tax exemptions and free infrastructure.

Finally, there is the lingering effect of the Employment Guarantee Scheme for secondary and post secondary graduates. Although this scheme was abandoned in the 1990s, there may have been an implicit understanding that the government would eventually do something if unemployment rose too much. This view is bearing fruit, as demonstrated by the recent drive for partially resolving unemployment through government hiring. It has in the meantime increased the demand for education in secondary schools by students fueled with the hope of eventually getting a secure job with limited working hours. More subtly, Assad (1994) argued that the chance of getting such a job in the government might have set an artificially high reservation wage, which diminishes demand in the private sector.

Market Failure Related Disincentives

Left to the incentives provided by market forces alone, the delivery of education may neither be equitable nor efficient. The market fails to meet equity objectives because of its reliance on the ability to pay rather than on need. This failure justifies some government funding of education. It fails to achieve efficiency because competition is not always possible and because the market is characterized by asymmetry of information. More often than not, only one school serves a certain location, especially

in rural areas. Also, education attributes are differentiated and depend on quality of inputs that schools know more about than parents. This failure calls for government regulation of the market for education. Finally, the credit market fails to fund education because it is accustomed to using physical not human capital as collateral.

These incidents of market failure indicate that the government has an important role to play to achieve both efficiency and equity. The problem is that government intervention is also costly, because governments fail too. There is therefore a balance, which has to be struck between markets and government. Has Egypt struck that balance?

Consider the issue of funding first. Here the government has, as noted before, consistently allocated a higher percentage of GDP to education than the corresponding average in other developing countries at a similar level of per capita income. At issue, however, is the pattern of allocation of these funds, which did not favor basic education as in, for example, most countries in East Asia. Neither did the allocation correspond to the social rates of return on different education levels, as noted, for example, in the Egypt HDR (1997/98). This argument is not about per capita expenditure per student because educating a university student is simply more expensive than educating a basic education student. Instead, the argument is related to the distribution of expenditures across different levels of education relative to the total, which has tended to be biased against basic education and may have contributed to the mismatch between supply of and demand for labor.

Consider next the claim of free education in Egypt, which is contradicted by the evidence that shows that Egyptian households spend a significant percent of their income on education (El Baradei, 2000). But even if education was actually free, it could still be considered as unfair because no differentiation is made between students according to their income level. Equal expenditure on all students implies a transfer of resources to richer groups in society. It also implies that fewer resources are left to meet the growing needs of poor families for basic education. The added causality of free education may have been the no progress on reforms to make credit available to accumulate human capital.[4]

[4] Up until recently, the mortgage market did not exist in Egypt. The issuing of the new law is a step in this direction. Perhaps something similar should be initiated to make credit available for human capital

Consider finally the monopolistic and information asymmetry problems. On both issues, progress has been slow perhaps because the government was almost fully responsible for formulating education policy, as well as funding and providing education services. Planning was essentially the tool of operation and markets were to play a much smaller role, if any. Parents were happy that their children have a chance to attend school. Things have changed more recently, however. Markets are playing a more important role and private sector participation in the provision of education is increasing at all levels, from preschool to university. The bureaucratic model is in need of significant reforms. These reforms need to safeguard against exploitation of monopoly power and make accurate and timely information available about schools.

In short, while the education system in Egypt made significant strides towards expanding education, the time is ripe for significant reforms to cope with the new orientation of the economy. The next section elaborates the recommended course of action on the basis of the preceding analysis.

IV. From Engineering to Economics: Towards An Educational System Compatible with Employment

There is a large body of empirical evidence that shows that education is good for rapid economic growth. When shared widely, education is also the best equalizing force in society, short of outright redistribution of other assets.[5] Employment is the vehicle through which education is translated into growth and equitable distribution of this growth. When the link between education and employment is broken, significant resources are wasted and the returns to education diminish.

Egypt has made significant progress on the provision of education to a large segment of the population. The problem is that the link between education and employment is broken. Equity is also being eroded by the rising private cost of education in public schools. A new wave of reforms is needed to maximize the private and social returns from education. The new approach to reform has to go beyond viewing education as an engineering process and move towards viewing education as an economics phenomenon. This shift does not mean neglecting reforms to improve the schools, teachers' skills and the curriculum. Rather, it means that additional reforms are needed to attach relative values or prices to educational outputs and inputs, by aligning incentives with desired outcomes while paying attention to equity.

[5] For such evidence and other references see Birdsall and London (1997).

Below is a brief account of the main elements of the proposed reform strategy to achieve this objective. These elements follow from the diagnosis of the problem in section III. They include measures to align incentives on the supply and demand sides, and measures to address incidents of market failure. These proposals are neither fully developed for implementation nor are they non-controversial. They are intended to serve as the basis for a national dialogue about what to do with education in the future. If accepted, perhaps implementation could proceed on a pilot basis in a particular geographical location. Alternatively, only some reforms can be adopted now, to be followed by others over time.

Aligning Incentives on the Supply Side

Aligning the incentives of teachers, bureaucrats, and private sector education providers to produce good quality education is difficult but necessary. In public schools, it requires motivating teachers to teach effectively in the classroom through performance based financial and pecuniary rewards. It also involves decentralization and the engagement of parents in the activities of the school, possibly including the selection of teachers, as has been done in some Latin American countries. In addition, it involves greater competition among schools, for example, by allowing students to enroll in the school of their choice on the basis of systematic information prepared by the Ministry of Education.

In private schools, profit maximization and competition take care of many of the motivational problems noted above. However, the government has an important role to play to ensure fair competition and the availability of accurate information about school performance. In addition, the government should retain and strengthen its authority to verify equal access and a minimum curriculum for all students. Finally, in the case of disputes between schools and parents, the government could fulfill the role of an arbitrator, based on a set of previously known rules, procedures and penalties.

In parallel to the above reforms, on-going reforms to improve the training of teachers, the physical quality of schools, and upgrading of the curriculum should all continue. There are two issues, however, that deserve consideration: the first is related to the increasing pressure on the treasury to spend sufficiently on building and maintaining schools; the second is related to the mode of delivery of services that are not an integral part of the education process.

With respect to the constraint on the treasury to meet the growing demand for building schools, one option is to offer the private sector the opportunity to enter that market on a much larger scale than has been possible so far. For this to work, the government could offer a voucher scheme of the variety mentioned above, along with detailed rules to ensure the efficient, fair and transparent operation of the system. Alternatively, the government could offer to pay the economic cost to private schools for each poor student enrolled. Schools should compete for this allocation and students should be allowed to choose among them. As for the mode of delivery of services that are not an integral part of the education process, the government may find it more efficient to contract out to the private sector such services as the publication of textbooks, the delivery of meals, and the cleaning of schools. Once again, this process requires competitive, transparent, and very clear guidelines. Implementation should be left to the local authorities with the involvement of parents.

Aligning Incentives on the Demand Side

Education is an investment where the economic return depends on the demand for labor. Any attempt to reform the education system therefore has to be seen as part of a larger reform process of the entire economy. Given the progress made by Egypt so far, the next phase of reform involves activating the economy, promoting labor-intensive production, and improving the functioning of the labor market.

Each of the above reform areas requires extensive discussion in its own right, which goes beyond the scope of this paper. It is suffice to note here that the package of reforms recommended to activate the economy includes a combination of expansionary monetary policy, a more flexible exchange rate and a counter cyclical fiscal policy (Panizza, 2001). The proposed reforms to encourage labor-intensive growth include measures to reduce the bias against exports (Galal and Fawzy, 2001) and measures to rationalize the prices of capital relative to labor (Radwan, 1998; Fawzy, 2002).

With respect to the functioning of the labor market, the proposed law is a step in the right direction. It is important, however, that additional reforms are undertaken to shift the demand for labor from the government to the private sector. This can be achieved in part by discouraging employment in government along the lines proposed by Assaad (1994). At the same time, attention should be given to the informal sector, which is the most important source of employment other than government. Reforming

this sector requires policy, institutional and legal reforms to make joining the formal sector and staying there economically attractive. Further, the process has to be voluntary in nature.[6]

Aligning Incentives to Correct for Market Failures

As noted, markets fail to achieve equity and access to credit for education. At the same time, markets could lead to monopolistic behavior and fail to produce optimal solutions because of information asymmetry. In all areas, reforms are needed.

With respect to equity, creative mechanisms are required to overcome the false entitlement of free education and to limit the subsidy only to those in need. One possible solution is to begin experimentation with charging economic costs to all students, while giving government vouchers to those who cannot afford the cost of obtaining education (as in Chile). This procedure has the added advantage of putting competitive pressure on schools to attract students because public funds will follow the student not the school. Whether this proposal is reasonable in the Egyptian context or not, it has long been noted that the current allocation of public funds is not equitable because it favors higher education at the expense of basic education. A reallocation of funds in favor of basic education is essential to restore fairness and maximize the social contribution of public expenditure on education.

As for the other incidents of market failure, it is important to develop and disseminate objective indicators about school performance and student actual attainment of knowledge. Other reforms are needed to prevent schools from monopolistic and discriminatory behavior, by establishing clear rules and enforcement mechanisms regarding access. Finally, reforms are needed in the credit market to make it possible for students to borrow for education, using their future earnings as collateral. This is practiced in other countries, especially where private sector participation has become a fact of life as it is becoming in Egypt.

Concluding Remarks

From the on-going discussion, it is apparent that serious education reform is urgently needed in Egypt. But neither building consensus to affect this reform nor implementation of it will be an easy task. Resistance to reform could originate from

[6] ECES and ILD, in collaboration with the Ministry of Finance, are in the process of conducting field research to identify the factors influencing the costs and benefits of informality, with a view to making policy, institutional and legal reforms to make it attractive for informal business to become formal.

misconceptions about government commitment to free education. Complications in implementation could arise from the diversity of affected parties, including different levels of government, providers of education, parents and students. To overcome these difficulties, reforming the education system has to be seen as a national project. It will take time and effort on the part of those concerned about Egypt's future. Short of reforms, the paradox of education and unemployment will persist, with adverse effects on development prospects.

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