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Student Research

The Opportunity to Learn: Creating Equitable Access to Higher Education in Egypt

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for Science and International Affairs

THE OPPORTUNITY TO LEARN: CREATING EQUITABLE ACCESS TO HIGHER EDUCATION IN EGYPT

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List of Acronyms, Glossary

AUC	American University in Cairo
CDC	Career Development Center (Ain Shams University)
CEDO	Career and Entrepreneurship Development Office (Cairo University)
CU	Cairo University
EFE	Education for Employment (NGO)
EGP	Egyptian Pound. Also LE (*Livre Egyptienne*). Approximately equivalent to USD 0.124 (March 2010)
ELMPS	Egyptian Labor Market Panel Survey
ERF	Economic Research Forum
FA	Financial Aid
HE	Higher Education (used synonymously with "tertiary education")
HEEP	Higher Education Enhancement Project
HKS	Harvard Kennedy School
M&E	Monitoring and Evaluation (System)
MENA	Middle East North Africa
MNSHD	Middle East North Africa Sector of Human Development, World Bank
MOE	Ministry of Education
MOHE	Ministry of Higher Education
Muayid	Teaching Fellows, graduate students who are "tenured" at public universities
NAQAAE	Egyptian Authority for Quality Assurance and Accreditation
NGO	Non-governmental Organization
PAE	Policy Analysis Exercise
PPP	Private-Public Partnerships
$, PPP	USD, taking into account Purchasing Power Parity
Thanawiya Amma	Egypt's Certificate of General Secondary Education
UN	United Nations
UNESCO	United Nations Educational, Scientific, and Cultural Organization
Uni.	University
UNICEF	United Nations Children's Fund
USD	United States Dollar (currency)
WDI	World Development Indicators

Executive Summary

This project aims to analyze the accessibility and equity of higher education (HE) in Egypt, assess the extent of its underlying problems, and provide sustainable policy recommendations for their rectification. Fees at all levels of schooling were abolished in Egypt following the 1952 Revolution. Education budgets and student enrollment increased dramatically in the two decades that followed. This increased enrollment rate seems to suggest that barriers to accessing education have been removed for the majority of the population, and even more so for disadvantaged groups.

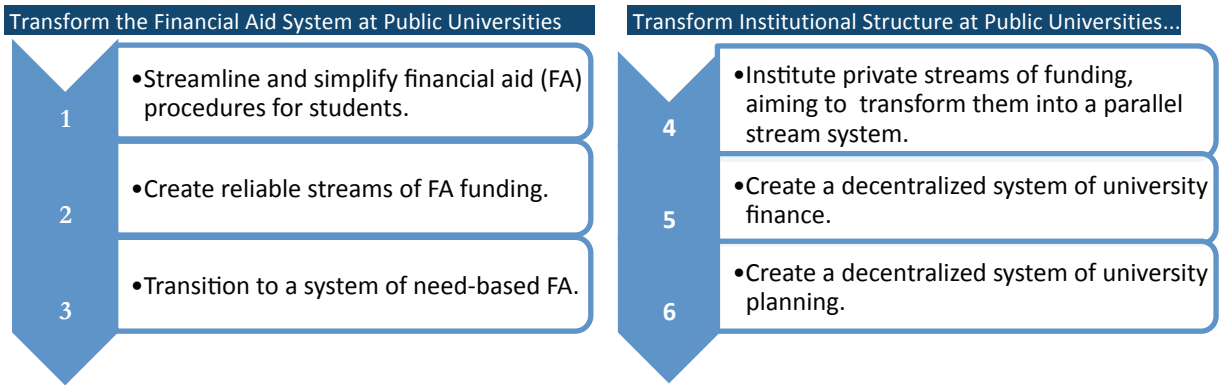
To some extent, the quantitative and qualitative findings of this project seem to corroborate the above intuition. It finds out, for instance, that by and large, direct costs of public HE are considered affordable however, it also finds that:

- **Financial constraints** remain barriers to access for low income segments of the population, particularly in the rural areas.
- **Non-financial barriers** such as early marriages, parents' educational level, and a rural background exist for a subset of the population in poor, rural areas, often in combination with financial barriers (e.g. for women in the south of Egypt).
- While the **direct costs** of public HE are affordable, many find the **indirect costs** such as paying for supplementary classes and class notes to be high**.** The extent to which indirect costs influences students' decisions to enroll is unclear.

A more pressing problem in the HE system is that of quality. The public HE system has been under a lot of resource strain due to an annual 6% increase in student enrollment which has not been matched by a corresponding increase in the budget from the federal government. Resultantly, student-teacher ratios and per-student expenditures have fallen drastically, causing decline in institutional quality.

The HE system now fails to meet its goals: learning outcomes are very low, the system fails to produce sufficiently skilled workers for the labor market, and Egyptian academia is not a sustainable, robust establishment. In other words, there is little value to gaining access to HE because of its low quality and correspondingly low value educational outcomes. There seems to be a fundamental tradeoff between access and quality in the HE system as it is currently run.

Policy recommendations focus on addressing the dual goals of increasing access and increasing quality while stemming off any large tradeoffs. Six high priority recommendations are identified to address two large areas of reform:



Given the scale of the proposed reforms, gradual and deliberate implementation of these policies will be important in ensuring that reforms are properly paced, expectations are realistic, and outcomes optimized. In Egypt's context, it will be of utmost importance to garner political and social will in order to effectively implement these policies.

PART I

Situation Analysis

1.1 Project Description

Higher Education and National Development Agendas

In 2000, a World Bank Task Force Report on Higher Education and Society[1] argued that higher education (HE) should be a national and international priority—equal to that of primary education in developing countries[2]. The report stated that higher education contributes significantly to poverty alleviation and economic growth[3] [4]. Since the issuance of that report, issues of access to and equity in higher education have occupied important positions in national agendas in the Middle East and North Africa (MENA) region. MENA countries have been investing increasingly larger funds into education development.

Understanding Determinants of Access for Policy-Shaping

In the summer of 2008, the MENA Education Sector joined an inter-Bank study on issues of access and equity in higher education. The sector is part of the MENA Human Development Department (MNSHD). The sector's mission is to help client countries build the human and social capital required for economic growth and social development. It provides technical, analytical, and operational support to its client countries[5]. To achieve these goals the sector aims to carry out several case studies, in order to understand the determinants of access to higher education in the region, and to formulate policy recommendations that create more equitable access to HE. In addition, the case studies will inform policymakers on how to create sustainable financing policies for HE in the region. Since Egypt has the largest tertiary system in MENA, it has been chosen as one of the case studies by the sector.

Policy Question:
What policies can effectively increase equity and access to higher education in Egypt?

Policy Question

The goals of this project are to employ quantitative and qualitative analysis techniques to:

- investigate the determinants of access to higher education in Egypt, and
- provide policy recommendations that sustainably increase equitable access to HE in Egypt[6].

Project Outline

Part I provides a brief contextual description of Egypt's demography, labor market trends, and education profile. **Part II** discusses the specific findings of this research project, as well as the quantitative and qualitative methodology used to understand the determinants of access to HE, and identifies the barriers to equitable access to HE. **Part III** offers policy alternatives that address the specific problems identified in **Part II**, and recommends final policy measures based on available evidence. **Part IV** provides a broad plan for implementation.

1.2 General Context[7]

Demography and Labor Market Profile

Egypt's population is approximately 80 million[8], and about 32% consists of youth under the age of 15[9]. The country's GDP per capita was USD 1770 in 2007; as such, Egypt is classified as a "lower middle income nation." Similar to most countries in the MENA region, there are great income inequalities within the country. About a fifth of the population lives under the UN poverty line of USD 1.00 per day[10]. The majority of the employed population works in the services sector (45%), followed by the agriculture (27%), and energy (15%) sectors. The public sector is the largest employer, although the private sector is growing rapidly. The country's unemployment rate stood at 9.4%, in the first quarter of 2009 and expected to increase further[11]. Approximately 2.3 million of Egypt's workforce of 25 million is unemployed, which includes a high percentage of the 650,000 or so youth entering the labor force each year[12]. The informal employment sector stands at 61% of all employment. The rural-urban breakdown is about 57-43 in the country[13], with urban centers growing rapidly.

National Education Profile

As seen in Table 1, rates of enrollment[14] at all levels of education have risen significantly in Egypt.

Table 1. Enrollment Rates in Egypt between 1985 and 2003

Level of Schooling	1985	2003
Primary Education (net enrollment)	83.7%	98.3%
Secondary Education (gross enrollment)	61.4%	87.1%
Higher Education (gross enrollment)	18.1%	32.6%

***Source*[15]: World Bank (2006) as quoted by World Bank, OECD (2009)**

HE enrollment rates have been estimated to stand between 19% in 1999[16], 29% in 2003, and 35% in 2005[17]. Figure 1 shows how quickly enrollment in Egypt has risen vis-à-vis other countries, namely Tunisia, Algeria, Jordan. Note that the slope of the curve rises faster in Egypt than that of the other MENA countries.

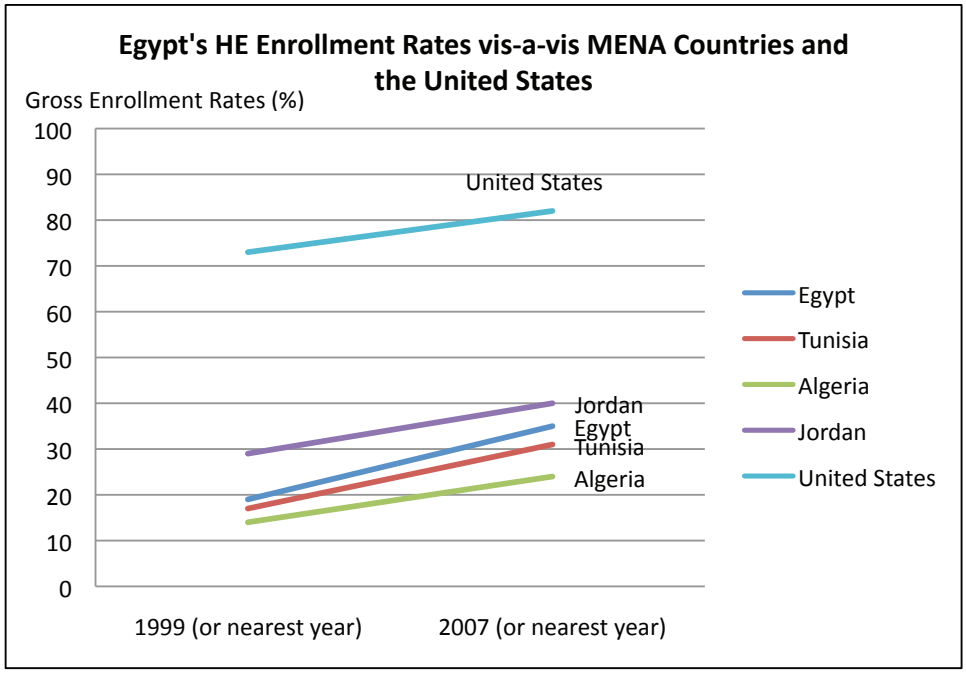


***Figure 1*: Total Enrollment in HE in Egypt and Other Countries over Time from the World Bank (World Development Indicators 2009).**

Given its burgeoning population—the population has been growing at an annual rate of 2% since 1970[18]—there has been a great stress on the public education system. In HE, student-teacher ratios have risen since 1982 despite increase in the staffing levels in the universities, i.e. staffing increases have not been able to keep up with student increases[19] (see Appendix B).

Figure 2 shows that student-teacher ratios in HE in Egypt stand at around 32:1[20], and are higher than other MENA countries, OECD countries, lower middle income nations, and the world average[21].

In addition, while enrollment rates have been growing, completion rates are far from encouraging. Some sources estimate the internal efficiency rate of HE institutions, i.e. the promotion rate, to be about half of that of enrollment. At present, the country cannot absorb all of its bachelor degree holders into the labor force as the job creation rate is slower than the HE graduation rate.

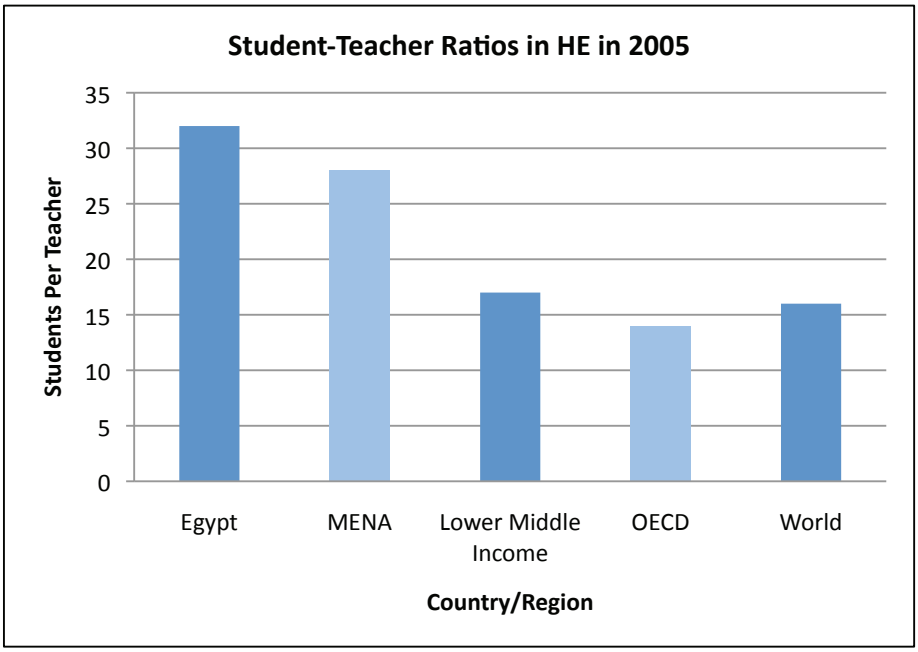


Figure 2: **Student Teacher Ratios vis-à-vis Other Countries from Fahim (2009)**

Fiscal Spending on Education

Egypt's expenditure on education as a portion of its overall budget is higher than that of other lower middle income nations and even OECD countries[22]. In the 1970's and 1980's, Egypt's spending on education, as a percentage of GDP, stood at around 8%, while the lower middle income nations' average was around 5% and OECD nations' average was around 6%[23]. However, this gap has been closing since then due to slightly lower education spending in Egypt.

Government spending on education at all levels rose dramatically after the Revolution of 1952, during which time President Gamal Abdel Nasser promised free education to everyone at all levels. However, by the 1970s, the subsequent government leveled off spending on education, and spending levels fell slightly into the 1990's and 2000's, with the most recent drop in 2005.

As seen in Figure 3, education expenditure as a portion of GDP now stands at around 4%[24]. Education spending as a portion of total expenditure now hovers around 12%-13%. The economy as a whole has been growing at rates between 4% and 7% between 2005 and now.

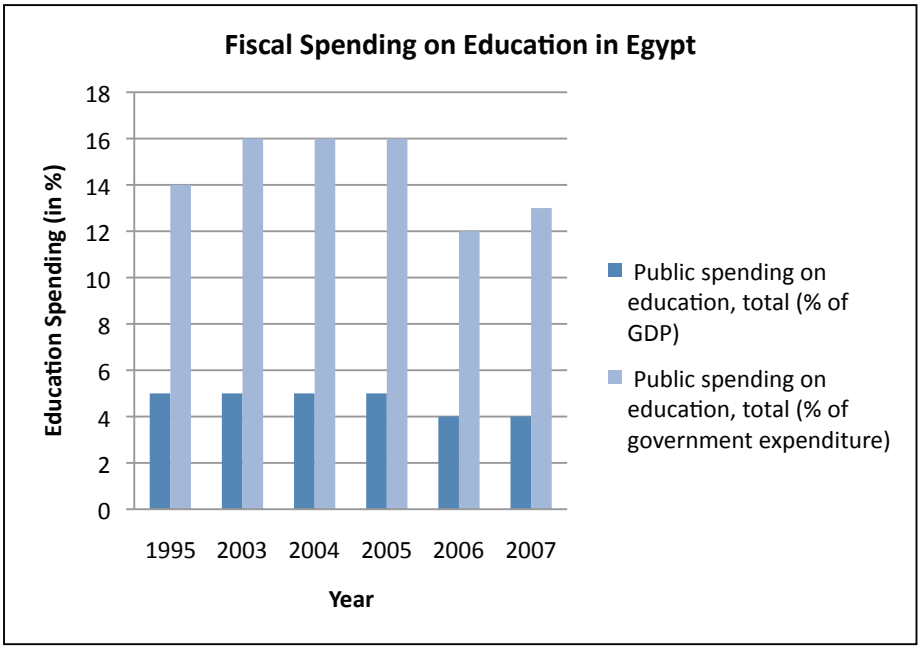


***Figure 3*: Fiscal Spending on Education, as a Percentage of GDP and Total Government Expenditures 1995 and 2007 from the World Bank (World Development Indicators 2010).**

Fiscal Spending on HE

Egypt spends more on HE as a percentage of total education expenditure than other lower middle income nations, and OECD countries. In 1999, HE comprised 28% of total expenditure on education[25] and in 2008, the percentage dropped slightly to 26%[26]. This percentage is higher than other lower middle income nations, which average between 16% and 18%, and even OECD countries, which average between 20% and 24%[27].

However, the per-student expenditure on HE is much lower than the average of other lower middle income nations and OECD countries. As Table 2 shows, the PPP-adjusted expenditure per student in 2005 for Egypt was about a third of that of lower middle income nations and less than 10% of the average cost in OECD countries.

Table 2: Expenditure per Student in HE in 2005

Country/Region	Expenditure per Student in Higher Education in 2005 ($, PPP)
Egypt	902
Lower Middle Income Nations	2,712
OECD	9,984

***Source*: Fahim (2009)**

While the total budget for HE has been increasing in real terms, the number of students enrolled in HE increases by 6% yearly. As such, budgetary increases have not been able to keep up with student increases, and there has actually been a drop in terms of real HE investment per student. Some sources have found that in real terms, there was a drop of 40% per student between 1990 and 1999, a rate which is only likely to increase into the 2000's (given that expenditures have fallen since 2005 and given rising inflation)[28].

Even though university budgets went up every year, they went up by unpredictable percentages[29]. It is difficult, however, to compare the budgetary increase for each university with the increase in their respective enrolment rates because of the multiple education information management systems in Egypt.

The government bore the highest burden of financing education; household contribution covered only approximately 8% of total per student cost of HE[30]. Several studies found that on average, HE constitutes about 1% of total household spending in Egypt[31]. Most of the expenditure on HE goes to cover current expenses and not towards capital; as such, infrastructure investments in HE have been low[32].

Politico-Institutional Analysis

HE is highly centralized in Egypt. The country's 20 public universities, which enroll approximately 78% of the HE student population, do not have much influence over their curriculum, staff hiring, and budget[33]. All of these decisions are made at the Ministry level. In addition to the public institutions, there are approximately 30 private institutions; a number which is growing very rapidly. (See Appendix C for a complete list of public and private institutions in Egypt.)

When school fees were eliminated at all levels following the 1952 Revolution, enrollment in HE rose rapidly. Free education for all is a tightly held promise in Egyptians. In 1997, in response to the increasing rate of student enrollment in HE, a separate ministry—the Ministry of Higher Education (MOHE)—was established and a minister appointed. Up to 1997, HE was under the jurisdiction of the Ministry of Education (MOE).

MOHE has undertaken some reforms since its inception. In the same year, legislation was passed to provide greater autonomy to HE institutions in making their own curricular and development decisions. Many would argue, however, that the reforms were ineffective, as the system is still highly centralized in its decision-making. In 2002, MOHE embarked on a multi-phase Higher Education Enhancement Project (HEEP) together with the World Bank in order to increase the efficiency and quality of the HE system. The effects of the HEEP have yet to be evaluated in a comprehensive way.

1.3 System Description

Pathways to Higher Education

Nine years of basic education is mandatory for all citizens in Egypt i.e. all citizens have to complete primary and "preparatory" school. Many students take longer than the stipulated time to complete their programs. After Grade 9, students are put in "General" (40%) or "Technical" (60%) tracks. Only those in general secondary schools take the *Thanawiya Amma* exam— the Certificate of General Secondary Education, which is the only way to access public HE in the country. Those in the technical track may go to technical colleges, which offer two-year programs leading to a Diploma[34]. (For a schematic of the Egyptian education system, see Appendix A.)

Universities offer four-year programs which lead to the equivalent of a Bachelor's degree. One's results from the *Thanawiya Amma* determine one's HE program based on a highly stratified point-system. For example, in 2008's examination, a score of 98 out of 100 total points allowed one to qualify for the Faculty of Medicine at Cairo University (CU), a

score of 95 for the Faculty of Political Science and Economics at CU, and so on. Business, Commerce, Law, and Social Services were disciplines with lower score requirements. Similarly, more prestigious universities, such as CU, Alexandria, and Ain Shams University had higher score requirements. Cutoff scores that would not be admitted at the Faculty of Medicine at CU, for example, may be admitted in Assiut University. After obtaining their *Thanawiya Amma* results, students rank (up to) all available programs at all universities and are given admission based on the highest cutoff score for which they are eligible. This ranking is now done online. There is often a mismatch between choice of program and ability to gain admission to a program. Many students are offered programs that they do not really want.

More recently, MOHE has imposed geographic restrictions on admission. Administrators at Alexandria University said that students now have to apply for their program of choice at the university in their geographic zone. A student may not apply for programs in another university that are already available in his or her local university, even if the student is eligible for a program at a more prestigious university.

In 2009, the World Competitiveness Report ranked the quality of public higher education in Egypt 126th out of 134 countries[35].

1.4 Summary

- Egypt has been experiencing a **population boom**, and its education system and labor market have not been able to fully absorb the **youth bulge** of the last twenty years.
- **School fees at all levels were eliminated** as one of the promises of the 1952 Revolution. Many hold strongly to the "right" of free HE; **HE has a strong social value.**
- While **education enrollment has risen at all levels**, student-teacher ratios have risen while per-student expenditures have fallen because of the large yearly student increase.
- HE currently consumes **28% of total education fiscal spending**, which is very high compared to other lower middle income nations and even OECD countries.
- The Egyptian education system, including its system of public universities, is **highly centralized and highly stratified.**

PART II

Problem Analysis

2.1 Goals of Higher Education

In order to analyze the existence and extent of problems in terms of equitable access to HE, we must first consider the goals of HE. Based on a broad survey of literature, a reasonable set of goals for HE in Egypt would be the following:

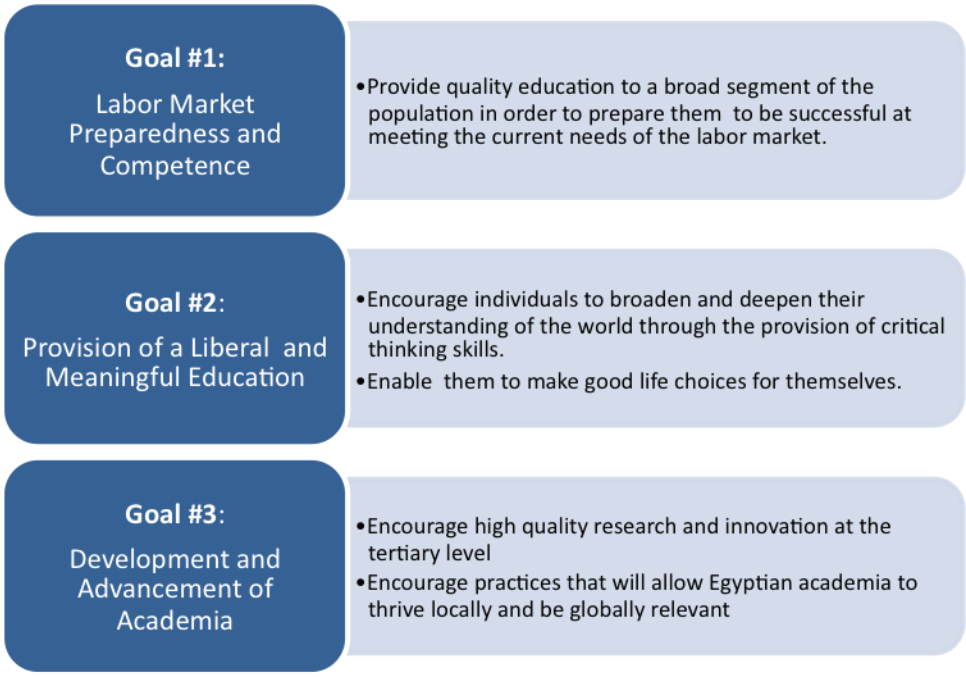


Figure 4: **Goals of Higher Education from author's own research and assessment.**

Labor market preparedness is prioritized because of the pressing need for the supply of high quality workers and entrepreneurs for Egypt's labor market. The second goal is that of personal development, which often leads to increases in individual welfare. Many studies have shown that the private benefits of obtaining a high quality tertiary education include better health status and increasing social mobility for the individual; in aggregate, this will lead to progress in terms of human development for the nation. The third goal is related to the development of the institution of HE itself; this is what needs to be done in order for the institution to sustain itself and make meaningful contributions to national education and worldwide academia. This goal is particularly pertinent if Egypt wants to participate in and keep up with the demands of the Knowledge Economy.

The problems of equitable access in higher education will be assessed in light of the goals above.

2.2 Research Design

In order to evaluate the existence and/or extent of problems in terms of equitable access to HE, this research focused on the following activities:

- **Literature Review**: Developing the research background and assessing the current state of knowledge on access and equity issues in the country. World Bank and UN agency reports and studies, documents from MOHE, and academic research papers provided the main sources for this component.
- **Quantitative Analysis**: Analyzing forms and determinants of disparities in tertiary education including gender dimensions, intra-country regional disparities in primary and secondary education levels, socioeconomic background, and proximity to higher education institutions.
- **Qualitative Analysis**: Conducting interviews with university administrators, professors, NGO workers, and students in Egypt to further understand issues of access to and equity in HE, and to identify possible policy solutions.

Scope of Analysis

The scope of this analysis is restricted to formal HE within the political and geographic boundaries of Egypt and does not include foreigners studying in Egypt or Egyptians studying abroad. It mainly focuses on problems in and solutions to the public system, but does consider the private and non-profit sectors in the analyses insofar as they affect public HE. For the purpose of this research, "access" is defined as "one-time enrollment as a full-time student in an academic institution of higher learning", the assumption being that the student is eligible for the equivalent of a Bachelor's degree at an institution that is able to grant such a degree. This analysis does not devote much attention to attrition, retention, flow efficiency, or any other measure of participation in HE and tries to assess issues of equity in access from the perspective of the student/family, as well as from a national or budgetary perspective. Policy recommendations are designed mostly for government and university administration action, with some roles for NGOs, and the private sector. Given the government's financial constraints, recommendations do not include increases in budgetary allocations.

Quantitative: Empirical Analysis Based on Household Survey Data

Empirical analysis was conducted on a data set provided by the World Bank. The Egypt Labor Market Panel Survey (ELMPS) was done in 1998 and 2006, in cooperation with the Economic Research Forum (ERF). This is a nationally representative household

panel survey. The data used in this research is from the year 2006, when a total of 8346 households were surveyed[36] in 13 of Egypt's 29 governorates.

The survey was based on two different questionnaires: a household-level and a community-level questionnaire. The household-level questionnaire includes several modules on demographic characteristics of all household members, household assets and housing conditions, but also on education and work of above-6-year-old members. The community-level questionnaire includes modules on access to education.

Qualitative: Interviews with Key Players

Informational interviews were conducted with 34 people in Egypt and some additional sources in the United States. Most of them were students, university professors and administrators, and NGO workers. (Appendix I provides information on the number and types of sources.)

The foci of these interviews were to:

- understand, mostly from anecdotal evidence, the barriers faced in entering HE
- determine if the evidence gathered in these interviews corroborates the quantitative model
- provide additional influential factors that predict access to higher education that are not captured in household surveys
- understand current higher education cost financing policies in Egypt
- understand current measures implemented to ease the costs of higher education for low income or historically marginalized students

(See Appendix D for a list of main research questions and sub-questions for both the quantitative and qualitative component.)

2.3 Problem Analysis: Quantitative Data

General Access to HE

The analysis focuses only on persons who were "university-aged" in the sample in 2006, i.e. being in the age range of 19 to 23 years. This cohort comprises 1944 persons from the households surveyed. The research finds that approximately 15% of the persons in the cohort had access to higher education[37].

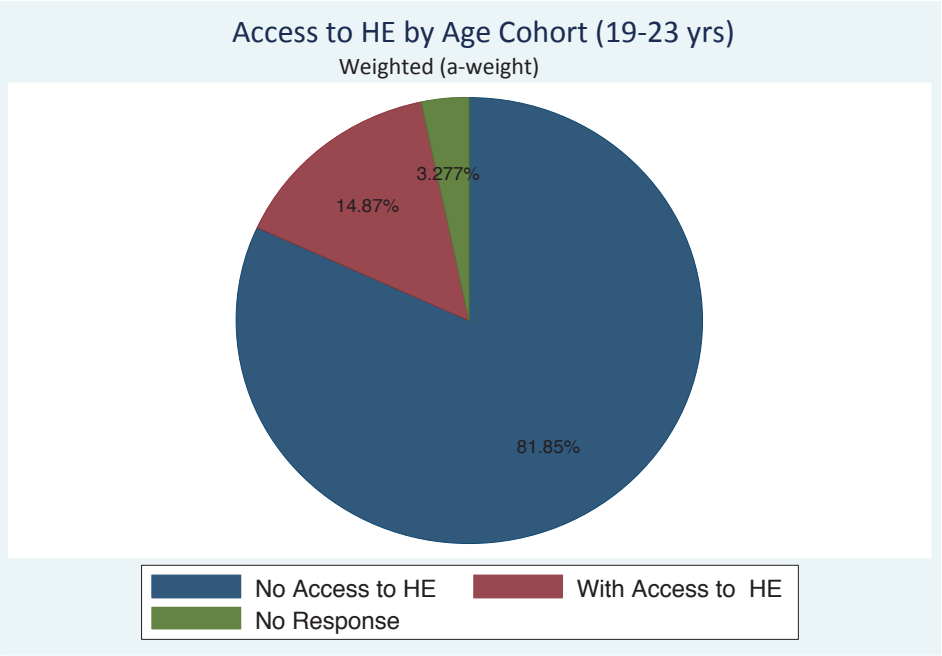


Figure 5: **Access to HE by Age Cohort from ELMPS, MNSHD World Bank**

Determinants of Access to HE

The following variables have been found to be the typical determinants of access based on a broad literature review:

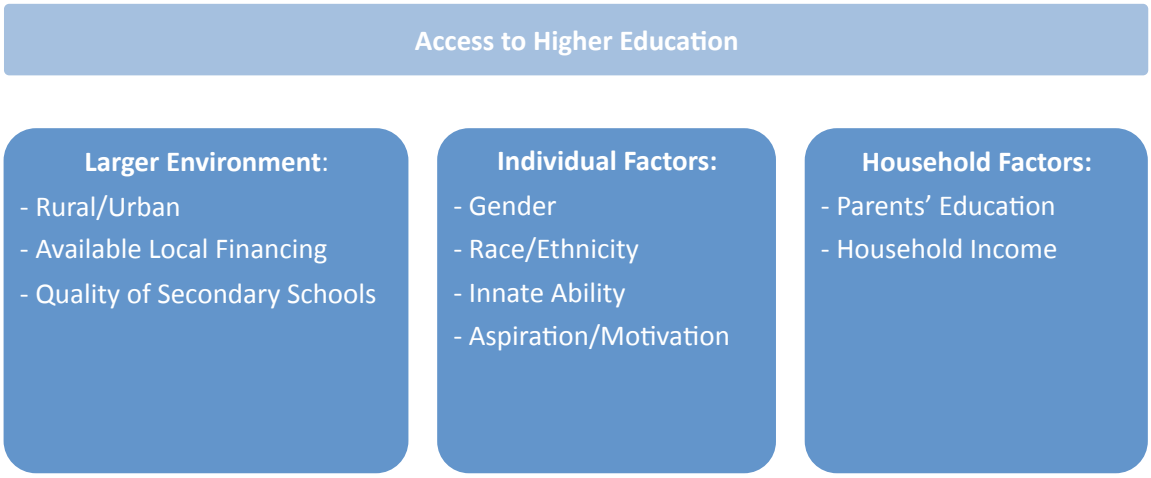


Figure 6: **Potential Determinants of Access to Higher Education from various resources based on the author's own literature review**

Many of these typical determinants of access have been found to be applicable in the case of Egypt. Gender, household income, geographic location, parents' education level, and parental presence in the home influence the probability of a student entering HE in Egypt.

In *Figure 5,* the descriptive data has been plotted into a probability chart with the main influential variables. The horizontal line represents the mean probability of accessing HE, if no additional variables were taken into account i.e. the line is set at the 15% access rate discussed above. The vertical lines represent how specific variables increase or reduce the probability of access.

Mothers' education is clearly the largest predictor of access to higher education—if a mother had a college degree, her child would have more than a 50% chance of accessing higher education. Fathers' education was the second most important indicator; if a father had attended higher education or secondary school, his child would have a 28-30% chance of accessing higher education. If a person in the age cohort was married, he or she would have a reduced probability of 5% of accessing higher education. Having a household income above median increased one's probability of accessing higher education by 5%; similarly, living in an urban environment increased one's probability by 8%. Being female increased one's probability of attendance only slightly-about two percentage points-and having both parents present in the household increased the probability by 1%. (Actual figures according to demographic variables can be found in Appendix E.)

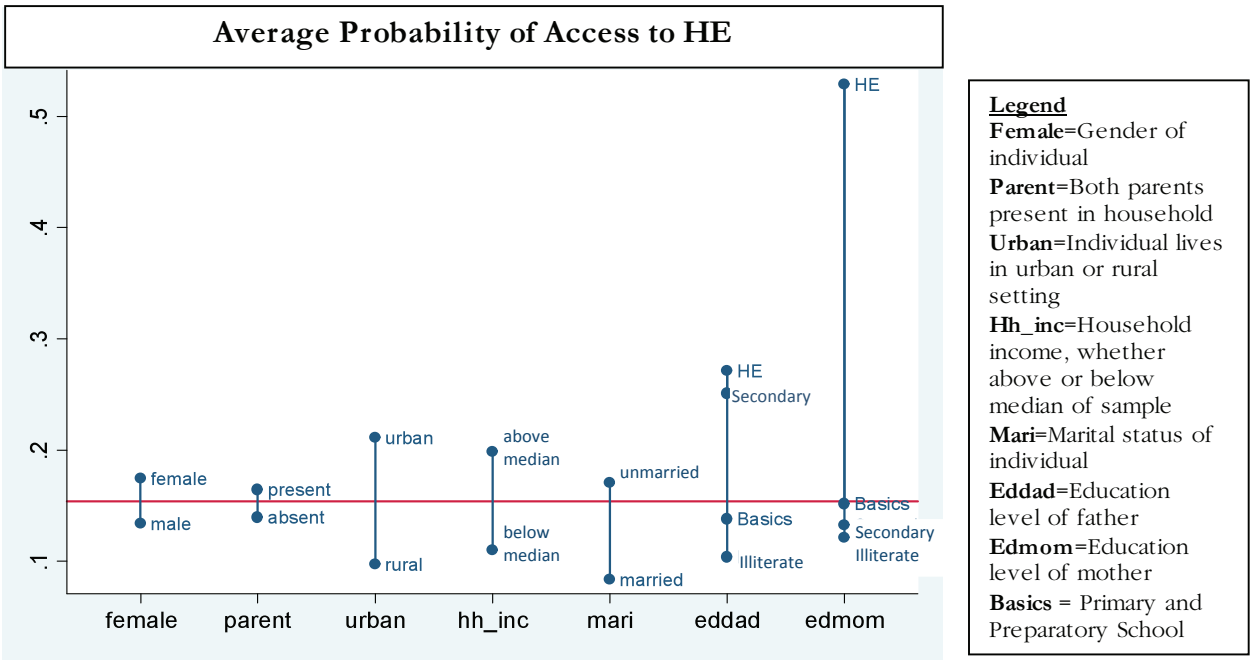


Figure 7: **Average Probability of Access to Higher Education based on Global Determinants of Access from MNSHD World Bank**

Using a simple logistic regression model, it can be easily determined that these variables-gender, parents education, presence of both parents in the household, marital status (significant for both men and women), household income, and an urban environment-were statistically significant. Using a Wald Test of significance and a Chow Test by income level, the research finds that there are statistically significant differences in how access is determined for the richest as compared to the poorest segments of the sample. In other words, these demographic differentials are more significant as determinants of access to HE for the poorest Egyptians. (Please see Appendix *G* and Appendix H for the regression taxonomy and Wald and Chow test outputs[38.])

Prototypical Student without Access to HE in Egypt

- Low household income
- Rural location
- Parents have low levels of education, especially mother
- Married by typical age of entry to university (19-23 years of age)

Figure 8: Prototypical Student without Access to HE in Egypt

Secondary School Analysis

To see if these access differentials were long-term systemic factors, a brief study of secondary school access was undertaken. A student can only access HE if he or she goes to the General Secondary School track. The results were strikingly similar: a 17% overall access rate and similar determinants. This seems to imply that there are systemic differentials that affect a student's ability to access HE from secondary school, and probably even earlier. As such, increasing access at the HE level may not completely eradicate inequities in the system. (See Appendix F for descriptive data and Appendix *G* for regression taxonomy.)

Overall, in Egypt, the descriptive analysis seems to complement the econometric analysis, and is consistent with the body of research already done on determinants of access to higher education. Inequalities in access seem to be often found in demographic variables such as household income, parents' education, gender, urban/rural environment, and marital status. These inequities seem to exist even at the secondary school level, and determine a student's path to or away from HE.

2.4 Problem Analysis: Qualitative Data

Below are the general findings based on interviews with different individuals related to public HE as students, academia or representatives of the NGOs active in the field.

General Access to HE

In general, most of the sources believed that access to HE was not a significant problem. Many interviewees did not subscribe to the view that many students needed financial assistance to access HE. Most believed that access had increased significantly since the 1950's.

Some professors said that they saw socioeconomic differentials in students in specific faculties. For example, a professor at the Medical Faculty at CU, where admission standards are very high, said that many of his students drove to class in their own cars-an indication of higher socioeconomic status.

Financial Constraints: Direct Costs

Some individuals stated that there was a small segment of the population who still was not able to afford HE in spite of only having to pay registration fees. These individuals were mostly NGO workers who had worked with very low income populations in rural areas. At the time of interviews, university fees ranged from EGP 150 to EGP 700 (USD 30 to USD 140).

Some students believed that financial constraints did exist. One student, who aligned herself with the Communist party in Egypt, said that because of her work in rural areas, she believed there were large financial barriers to HE. She said that in 2003 university fees were increased triple-fold and she began a petition to call for fee reductions that eventually got 5000 signatures[39]. She was expelled from university the next day. Other students did not report such financial strains, even though some of them did report fee hikes in the early 2000's.

University faculty and administrators said that there were financial assistance schemes to assist poor students, however, very few were able to give concrete details about these schemes. Ain Shams University seemed to require a district-level certification of "poverty"; Alexandria University required students to go to the university "welfare office." Professors seemed to feel that the system was fairly straightforward. On the other hand, very few students knew of the details of the system.

Levels of assistance varied widely: Ain Shams provided a stipend of 200 per month for all expenses, and Alexandria a maximum reduction of 30% of fees[40]. This is minimal compared to scholarships offered by private universities, particularly Egypt's most expensive and prestigious private university-the American University in Cairo (AUC). AUC offered a living stipend of EGP 1800 in addition to a transportation stipend and full fee coverage. Public institutions offer financial assistance to a larger number of students than

private universities, however. One professor said that Ain Shams offered financial aid to approximately 100 students per year at each faculty; AUC only offers approximately 50 full scholarships per year and some additional financial aid monies[41]. On the whole, the proportion of students covered by financial assistance packages seems to be small.

These financial assistance packages at public universities are funded by individual donors and fall under the administration of the Deans of faculties. It seemed to be a very informal system of give-back by alumni and religious communities.

Financial Constraints: Indirect Costs

Students, in general, felt that the "side costs" of education, such as the costs of extra classes and books, were high. Because classes are so large at public universities, students felt the need to go to extra classes offered by Teaching Fellows-graduate students, also called *muayid*-or professors. These classes could be expensive, so at the very least, a student had to buy class "notes" in order to pass the course. These notes, which are actaully documents that provide hints as to what would be on the final examination, cost between EGP 25 and EGP 50 a semester (USD 5 to USD 10).

The necessity of extra classes depended on specific faculties. These classes seemed to be critical in the Faculties of Pharmacy, for example, and could cost up to EGP1000 (USD 250) per semester, exclusive of books. Students usually take between five and six courses per semester. Students in the Law Faculty at CU said that extra classes were not important, while students in the Faculties of Medicine, Commerce, and Engineering said that they were. It was difficult to determine whether or not indirect costs influence enrollment decisions, and if they did, to what extent.

Compounding the burden of these direct and indirect costs was the lack of availability of financing options, such as student loans. Banks in Egypt do not provide student loans and there seems to be high risk aversion to debt incurrence in this largely cash-based society.

Financial Constraints: Opportunity Costs

Some very low income families said that they were reluctant to invest in education because they did not see how it "paid off." In general, very low income families seem to perceive very low returns to education. In addition, low income students often score lower on the *Thanawiya Amma* and thus anticipate being relegated to the social science faculties, where wage returns from the labor market are lower than for graduates from other faculties. These families also seemed to believe that private universities were not interested in providing quality education and were only interested in making profits

from tuition. This view only seemed to be strongly held by very low income families; most families seemed to value highly a university degree, and were less skeptical of private universities.

Non-Financial Constraints

A combination of financial and cultural reasons seemed to be preventing access to HE for some subsets of the population, such as rural women. One professor who studied poverty in Egypt said that some rural women, most likely from the south of Egypt, did not want university degrees because their work options upon graduation would involve working alone with men, such as at a retail store, which was considered shameful. Employment in large companies, which was much more desirable from a social perspective for these women, was harder to obtain because these women were not competitive as employees. One student who had made a deliberate choice to not attend university after completing high school said that she was influenced by her friends, who also did not want to go to university. Another student who had a child while still in university said that she found it difficult to complete school because of the demands of her new family. Universities did not have many accommodations for students with disabilities or different lifestyle needs.

Quality Issues in HE: Crowding

A major problem cited by various individuals interviewed was the annually increasing enrollment rate which cannot be accommodated by the public HE system[42]. For example, at the Faculty of Law at CU, some classes held up to 10,000 students. Seats in lecture halls were often sold at this faculty because there were far more students than seats. At Ain Shams' Faculty of Engineering which has the capacity for 700 students, current enrollment is 3000 students.

Many informants believed that the quality of educational institutions at the tertiary level had declined in Egypt after fees had been abolished, and that it made little sense to increase access at the expense of quality. Many informants cited the 1970's as the start of the period of decline. "Cairo University had four Nobel Laureates in the past, but now there is no way that this would happen," said one professor.

Many public institutions feel forced to graduate students, regardless of their level of preparation for the labor market, to make way for the upcoming class. In private institutions, similar pressure is exerted by parents who feel entitled to good grades and a university degree in return for the fees they pay.

While many felt that private universities, in general, did not provide better quality education, the mere class size made it more likely that an average student would learn more at private institutions as opposed to public ones. The exception to this rule was AUC, which had a good reputation in Egypt, even though the cost of education there was approximately 400 times that of the public institutions[43]. In faculties where the ratios were smaller, such as the Japanese Department at Ain Shams, students felt that they got a good, affordable education.

In terms of financial resources, university administrators said that each year their budgets were stretched thinner. Federal funds were not getting larger in proportion to the student numbers. Egyptian universities have no tradition of alumni giving and private endowments are not allowed by law. Some universities have developed "private streams" for some of their programs. In general, they charge higher fees to their students in exchange for smaller class size. University administrators almost unanimously find this system helpful in offsetting some costs in the general stream.

Quality Issues in HE: Institutional Structure and Management

In general, universities do not have ownership of their curriculum, budget, and staffing. Most of the decision-making is at the Ministry level. The board of each university, which makes some low-level decisions, usually comprises the university's own faculty, which makes the system prone to stagnation, and very likely, corruption.

All universities are currently accredited by the Egyptian Authority for Quality Assurance and Accreditation (NAQAAE) which was created in 2007. The Authority is independent and reports directly to the Prime Minister. However, many feel that the Authority is not effective, and has neither incentive nor mandate to improve the current level of performance of universities.

Quality Issues in HE: Professorate

Limited federal budgets have led to low professor salaries. One professor said that as a full professor, he made less than EGP 2000 (approximately USD 400) per month)- an unlivable wage in the city where he taught.

Many professors said that they resort to making money by selling the textbooks they write in their courses, and consulting or teaching in the private sector. They are not required to do research or maintain satisfactory evaluations from students in order to get tenure or promotions. Many students said that professors do not seem interested in their courses and that they did not pay much attention to whether or not students understood

what they were trying to teach. Students said that they "learned nothing" and "wasted their money."

Quality Issues in HE: Student Services and Career Preparation

Given their student-teacher ratios and financial constraints, public HE institutions do not have the capacity to provide mentoring, academic advising, or career guidance. Students said they saw a real difference when "career centers" funded by NGOs opened up at Cairo University and Ain Shams University. Most universities do not have the resources to sustain these centers on their own.

Quality Issues in HE: Research, Institutional Integrity and Viability

Public universities in Egypt do not conduct much research; professors said it was very difficult to get research grants, and there was no real incentive to do so. Graduate students said that research opportunities were limited and that most research projects were not "independent" as all questionnaires had to be vetted by the government.

Some professors felt that the autonomy that is supposed to be present in institutions of HE is not present in Egypt because of the high level of federal funding. These professors believed that intellectual exchanges and collaboration for regional development are not possible, given that HE is state-driven and state-controlled.

There is a culture of intellectual in-breeding in public institutions. All university teaching staff are usually former students. The HE system ensures life-long tenure for all *muayids* and professors from their first contracts. As such, many never work at other institutions and there is little incentive to engage with others in their fields.

Finally, foreign professors said that they found very few instances in which students were encouraged to engage in interdisciplinary study; intellectual "cross-fertilization" seemed to be discouraged by the highly structured curricula of universities. These professors felt that this would limit Egyptian students in the long run, as they would not be innovative or competitive as workers.

Quality Issues in HE: Incoming Student Quality

Many professors felt that the quality of the incoming students was low and that they had to fill in large knowledge and skill gaps. They cited low secondary school quality as the cause of this problem. In addition, they felt that students had the attitude that a university degree was a "paper credential" only, and that students did not have a real passion for academic inquiry.

2.5 Two Major Problems in Creating Equitable Access to HE

The figure below summarizes the two major problems—access and quality—in creating equitable access to HE (from both the quantitative and qualitative data):

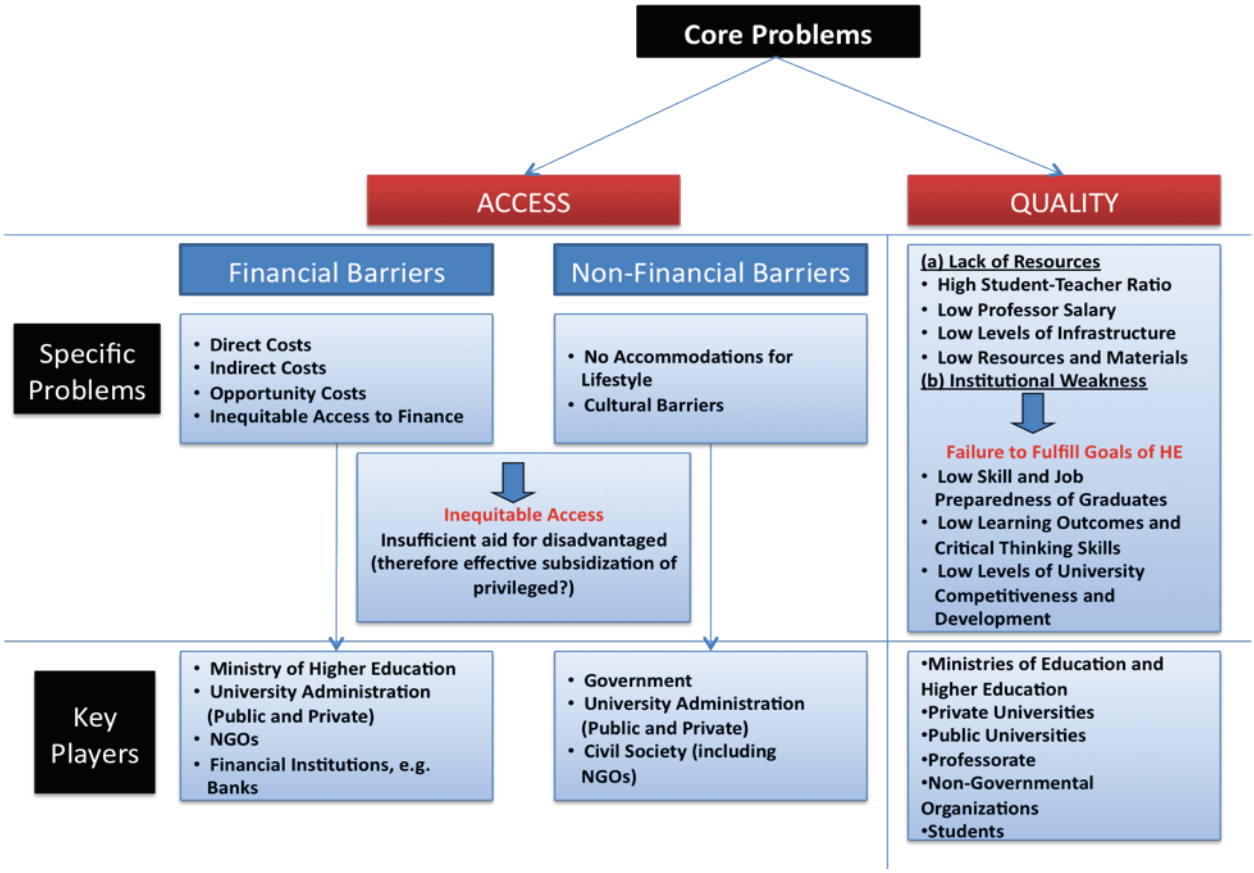


Figure 9: **Summary of Problems in Creating Equitable Access to HE in Egypt from various sources**

2.6 Framing the Tradeoffs

In sum, there seems to be a significant tradeoff between **equity in terms of access** and **quality of HE** given the limited resources available in Egypt. This tradeoff is not unique to Egypt; many studies in other African countries, that have abolished fees, have suffered from a corollary attenuation of qualiy[44]. Both equitable access and quality are important for the HE system to be successful. Quality is important for the HE system to achieve the tripartite goals of HE discussed at the beginning of the chapter; equitable access is important so that the system serves all segments of the population. Unless the structure and quantity of HE financing changes for both individuals and institutions , the tradeoff between access and quality will have to be managed. Reforms that aim to increase both access and equity must pay careful attention to how these tradeoffs occur.

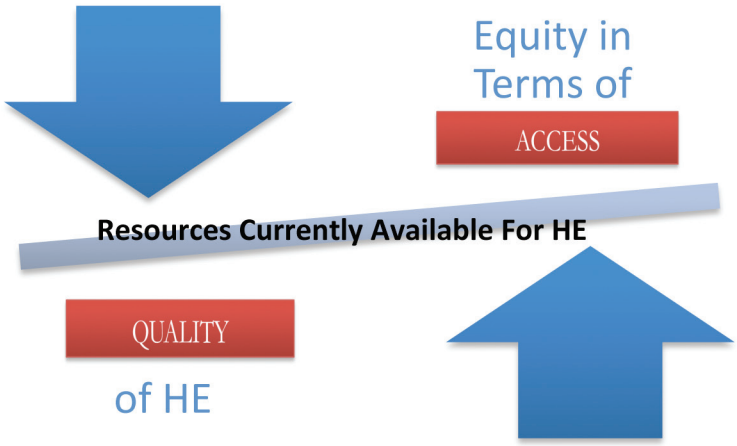


Figure 10: Interrelated Factors of Consideration: Access, Equity, Quality, and Resources Available for HE from the author's own analysis.

2.7 Summary

- **Financial constraints** still prevent access to HE for low income segments of the population, particularly in rural areas. **Non-financial barriers** also exist, often in combination with financial barriers, for a subset of the population in poor, rural areas.
- By and large, the **direct costs of public HE are considered affordable** however, many find that the **indirect costs of HE are high.** The extent to which these side costs influenced students' decisions to enroll is unclear.
- Many consider the **quality of public HE to be very low,** and the system is failing to achieve its goals.
- Low quality at public institutions is mainly due to (a) **low resources** vis-à-vis increasing student enrollment, and (b) **institutional weaknesses**.
- There seems to be a fundamental **tradeoff between access and quality** in the HE system.

PART III

Policy and Strategy

3.1 Policy Framework: Goals, Limitations, and Overall Strategy

Dual Goals: Increasing Both Access and Quality

As discussed before, both equitable access and quality are important for the HE system to achieve its goals. Thus, the dual goals of the policy framework are to increase both access and quality in the HE system, while paying careful attention to tradeoffs.

Limitations of Framework

Given the policy focus of this project, very long-term cultural and institutional changes will not be discussed as solutions to the problems raised in Part II. These include:

- initiatives to change cultural perceptions of education affecting disadvantaged populations, such as women in rural areas
- initiatives to induce economic growth and thereby increase labor market demand and rates of return to education
- initiatives to reform the basic and secondary school system and increase HE incoming-student quality
- initiatives to stem off demographic pressures, i.e. curb population growth

Policy recommendations are designed mostly for government action, with some roles for public university administration, NGOs, and the private sector. Given current financial constraints, recommendations will not include federal budgetary increases.

Policy Strategy: Reasonable Expectations from a Mixture of Long-Term and Short-Term Measures

Barring the problems eliminated by the limitations above, the remaining problems from Part II can be categorized into three problem areas, as seen in *Figure 11*. To achieve the dual goals, all three problem areas must be addressed.

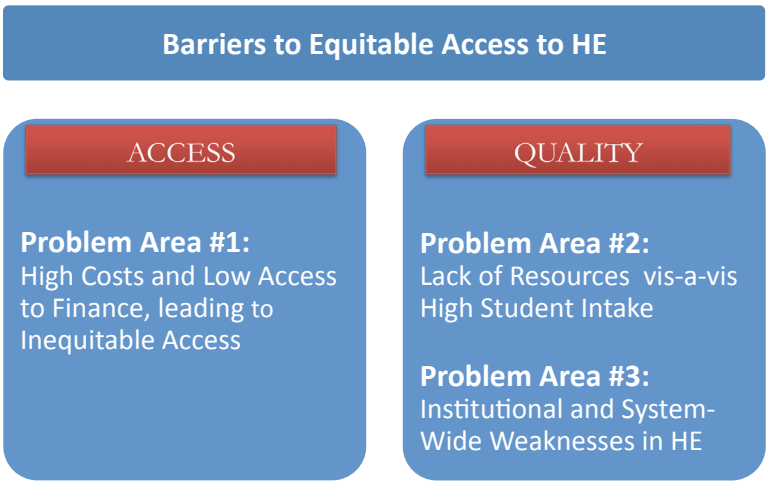


Figure 11: **Summary of Problem Areas in Creating Equitable Access to HE based on the author's own analysis.**

Adequately and sustainably addressing all three problem areas requires a combination of short-term and long-term initiatives. As with all multi-term policy initiatives that attempt to address large scale problems, we can reasonably expect some gains in the short run and net gains in the long run. *Figure 12* summarizes the policy strategy:

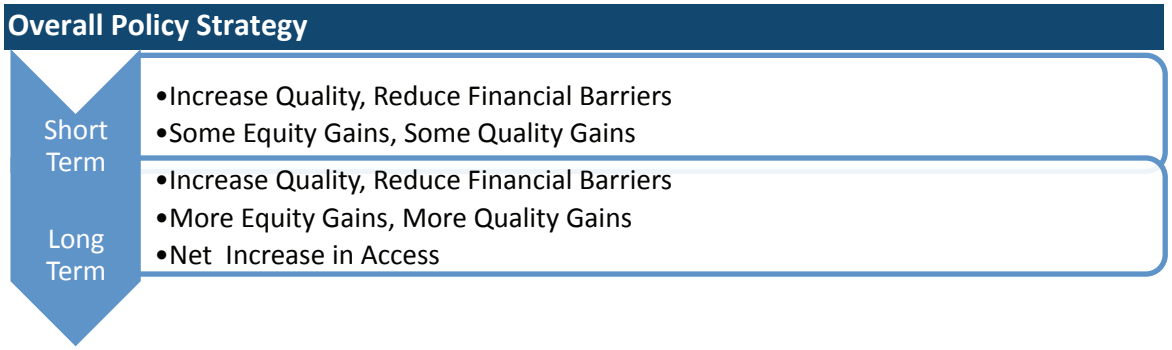


Figure 12: **Overall Policy Strategy based on the author's own research.**

3.2 Specific Objectives and Strategies

Four objectives have been identified to achieve the dual goals of increasing access and quality in HE, as seen in *Figure 13*. What follows is an evaluation of the policy alternatives for each objective in turn, and final policy recommendations.

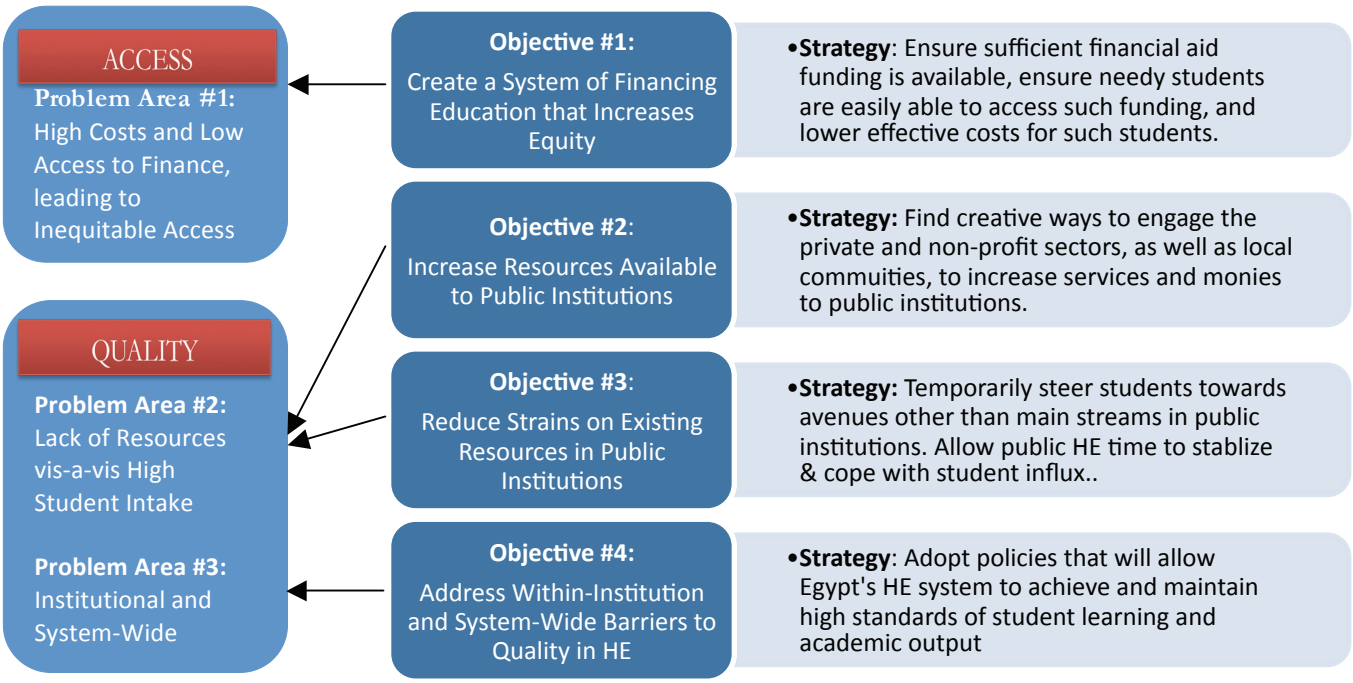


Figure 13: **Four Objectives for Addressing the Three Problem Areas and Achieving Goals of Project based on the author's own research.**

Objective #1:
Create a System of Financing Education that Increases Equity

- Ensure sufficient financial aid funding is available
- Ensure needy students are easily able to access such funding
- Lower effective costs for such students

To create a system of education financing that increases equity in HE, we must implement policy initiatives that equitably distribute financial aid (FA) funds[45] to students in need. A variety of policy interventions are outlined below:

Table 3: Policy Alternatives for Objective #1

Policy Alternative	Predicted Outcome for Access	Predicted Outcome for Quality[46]	Feasibility	Evidence on Success/Failure	Assessment Likely Net Gains + Time Frame + Priority	Adopt?
Streamline and simplify FA procedures for students	Increase access; larger gains if comprehensive costs covered	Likely to lower quality → student increase	Difficult to discriminate amongst recipients if funds insufficient	Many studies show increases in access when costs are lowered[47]	Medium Gains Short Term **High Priority**	√
Create systematic and reliable FA funding streams	Reliable and possibly more comprehensive coverage	Uncertain, depends on who takes up	Difficult to develop and manage at university given staff limitations	FA systems in the US and Canada are highly reliable	**High Gains** Short Term **High Priority**	√
Encourage privately funded scholarships	Increase access at private and public institutions	Uncertain, depends on where funds applied	MOHE should undertake; low risk or cost	AUC scholarships very effective and generous but limited in number	Low Gains Short Term Low Priority **Low Cost**	√
Transition to a need-based financial aid system	Increase access in equitable way	Likely to lower quality → student increase	Large undertaking, major coordination	FA systems in the US and Canada are highly reliable	**Largest Gains** Long Term **High Priority**	√
Create student loan schemes via partnership with banks	Increase access but not for poorest; likely to private universities	Likely to lower quality → student increase	Requires regulation and change in perceptions	Student loan programs in developed countries are effective	Medium Gains Long Term Low Priority	√
Prohibit the sale of exams, notes, & seats	Uncertain; depends on students' awareness of, and response to, costs	Likely to increase quality in long run if it indirectly supports improvement of the general quality of instruction and if unprepared students less likely to pass courses	Difficult given centralized system, status of professors	None	Medium Gains Long Term Low Priority	√
Regulate "extra classes" → solely supplementary	Uncertain; depends on awareness of costs	Increase quality	Difficult given centralized system, status of professors	Studies in East Asia show extra classes a form of inequity[48]	Medium Gains Long Term Low Priority	√

***Source*: Various**

Policy Recommendations

Based on Table 3, the best policies to adopt, in order of implementation timeline, are:

Short Term: Create easily navigable and transparent procedures for obtaining financial aid (FA) at public universities, however minimal to begin with. Develop reliable flows of funding and additional scholarship opportunities.

1. **Streamline and Simplify FA Procedures at Public Institutions (High Priority)**
   The system to obtain FA varies by university and involves much red tape. Many students are not aware of how the system works. The process should be made transparent, fair, and easily navigable; students should have reasonable expectations of future levels of FA. The system should be housed within the university, e.g. at the Student Services department, and should ideally be administrated by a few specific persons. The information about obtaining FA should be made known to students while they are still in secondary school.

2. **Create Reliable FA Flows of Funding (High Priority)**
   Universities currently rely on individual donors and some federal funds for FA. Universities should build reliable donor bases by formalizing pledges of individual donors and encouraging the participation of the private sector. MOHE could provide a consistent flow of funds specifically for FA to universities each year. As overall fund flows increase, universities should provide more comprehensive coverage to low-income students, such as providing funds for books, clothing, and food. A discussion to be had in MOHE is whether or not universities could transition to a (currently banned) system of endowment, perhaps specifically for FA.

3. **Encourage Scholarships by Private Institutions and the Private Sector**
   Private universities, such as the American University in Cairo (AUC), have provided competitive, prestigious scholarships for students. While generous and effective at reducing cost at private institutions, they are few in number. MOHE should encourage additional such scholarships, whether merit-based or need-based. While the net gains are expected to be medium at best, the costs of encouraging private sector participation are also low.

Long Term: Transition to a system of need-based financial aid with reliable fund flows, and effective regulation to reduce indirect costs.

1. **Transition to a System of Need-Based FA (High Priority, Highly Controversial)**
   The experiences of the USA and Canada show that a need-based FA system has allowed students with a high ability to pay for HE to effectively subsidize those who cannot afford HE, thereby creating net gains in equity. This is because the limited financial resources provided to universities may not be used to effectively subsidize poorer students if high income students are more likely to gain access to HE and can pay for it anyway.

   A need-based FA system charges fees to students who can pay and provides a "package" of aid to poorer students according to their ability to pay, usually taking the form of (1) no tuition fees or low fees; (2) grants; and (3) student loans[49]. The idea is that fee-paying students-students who have the willingness and ability to pay for HE-will provide additional support for the HE institution in which they are enrolled, and government subsidy dollars can be directed to students in real financial need[50]. This system will certainly ease the current strain on financial resources available in public institutions, although in Egypt, it is likely that a large share of the student population is going to be on a significant level of FA. The incidence of fees may only fall on a small segment of the population based on current data on the distribution of income in the country. Nonetheless, it will still provide some financial relief to the already resource-low public HE institutions, and increase equity in terms of government spending on HE. At this point, it seems unrealistic to expect the federal government to provide the additional funding to keep up with student enrollment.

   Such a reform is likely to be a highly controversial endeavor. Many people hold tightly to the right to a free education promised by the Revolution of 1952, and HE has a high social value. In addition, low income students are likely to be suspicious of the new FA system. FA processes will have to be clear and easily navigable. Perhaps creating individual FA accounts for low-income students may increase their trust in the new system.

2. **Create Student Loan Schemes through Partnerships with Banks**
   Private HE institutions should be encouraged to partner with banks to provide student loans. Risks could be shared between the HE institution, banks, and possibly MOHE. Providing such loans will enable students from medium income backgrounds to choose institutions that otherwise may have been too expensive for them. This will likely ease pressure on public institutions by re-

ducing their enrollment. MOHE will have to carefully investigate and monitor loan terms so that students and their families are offered fair terms.

3. **Effectively Regulate Practices that Increase Indirect Costs**
   Many students in public institutions have to expend money on cheating (e.g. buying examinations), purchasing class notes (which essentially only prepare students for questions that are likely to appear on the examination), and even buying seats in lectures in order to pass their courses. Such practices should be prohibited in HE. In addition, extra classes, now considered a staple for some faculties, should only be supplementary to actual lectures. They should not provide information over and beyond that of the lectures. Eventually, professor and *muayid* salaries should be high enough that they do not have to resort to creating such "side markets". While the impact of indirect costs on student decisions to enroll in HE is unclear, it will still be useful to regulate such practices. Some studies in primary and secondary schools in Sub-Saharan Africa have shown that when indirect costs are high, students are less likely to attend school[51]. Preventing the unscrupulous imposition of indirect costs will also increase the credibility of the HE system.

Objective #2:
Increase Resources Available to Public Institutions

- **Strategy:** Find creative ways to engage the private and non-profit sectors, as well as local commuities, to increase services and monies to public institutions.

To increase resources available to public institutions without increasing federal budgets, we must implement policy initiatives that effectively engage the support of local communities, and the private and non-profit sectors. A variety of policy reforms are outlined below:

Table 4: Policy Alternatives for Objective #2

Policy Alternative	Predicted Outcome for Access	Predicted Outcome for Quality[52]	Feasibility	Evidence on Success/Failure	Assessment Likely Net Gains + Time Frame + Priority	Adopt?
Decentralize financial decision-making	N/A	Quality increase.	Initial administrative burdens for universities. Need buy-in of many stakeholders.	Pilots done at secondary level found increased community donations (220% more)[53]	**Highest Gains** Long Term **High Priority**	√
Engage NGO support for provision of additional services, e.g. Career Centers	N/A	Likely some quality increase.	CU and Ain Shams University have shown support and goodwill. Feasible. Path already forged.	Career centers at CU (CEDO) and Ain Shams University (CDC) have been successful	Medium Gains Short Term Low Priority **Low Cost**	√
Encourage Partnerships with Private Sector →Training, Service, Financial and In-Kind Donations	N/A	Uncertain, but likely to be some quality increase.	Given success of CEDO and CDC in amassing support, should be open doors.	None. Private sector plays an important role in HE in developed countries, particularly by providing career-related support.	Medium Gains Long Term Low Priority **Low Cost**	√

***Source*: Various**

Policy Recommendations

Based on Table 4, the best policies to adopt, in order of timeline of implementation, are:

Short Term: Continue to encourage the NGO sector to provide services, and encourage partnerships with the private sector.

1. **Encourage NGOs to Continue Service Provision**
   NGOs have stepped in to provide services that public institutions are unable to provide for their students, such as career service offices. Two successful career centers funded by local and foreign NGOs (and the private sector) have been opened in CU and Ain Shams University. Their student clientele has been growing at strong rates each year, and students report high satisfaction with their services. Further such participation should be encouraged and expanded to other skill and service areas not offered by public institutions themselves, such as in supporting students with lifestyle differences (such as children) and students with disabilities.

2. **Encourage Partnerships with the Private Sector**
   While little collaboration exists between public HE and the private sector in Egypt, other developed countries have had high degrees of success, particularly in career preparation, through partnerships with the private sector. AUC has successfully funded many of its student service programs, such as its career center, through private support. NGOs dedicated to preparing unemployed graduates for careers, such as Education For Employment (EFE), profits many ways from collaborations with the private sector. University administrations should consider pursuing such partnerships, as this seems to be an area ripe with benefits for public HE.

Long Term: Transition to a decentralized system of university finance.

1. **Create a Decentralized System of University Finance (High Priority)**
   Financial decision-making for HE is currently made at the Ministry level. Through a gradual decentralization process, such decisions should transition to the jurisdiction of universities. This will increase each university's ownership and control of its finances, and it can better plan to efficiently allocate its resources (and perhaps reallocate its resources across budgets and faculties). Universities can also engage in activities to raise their own revenue through service provision, research, consulting, and fundraising from the local community. In pilots done at the secondary school level, community donations increased after finances were decentralized because there seemed to be greater

interactions between communities and schools. As such, there is evidence that financial decentralization can be carried out relatively quickly and with few problems in spite of Egypt's highly centralized education system. In 1997, legislation for financial and planning decentralization in HE was enacted with little effect. Such legislation should be revisited, modified, and effectively implemented. In order to make balanced decisions, universities should include other stakeholders, such as members of the community, on their boards. University boards are often solely staffed by the university's faculty.

Objective #3:
Reduce Strains on Existing Resources in Public Institutions

- **Strategy:** Temporarily steer students towards avenues other than main streams in public institutions so that the public HE system has time to stablize its resources and cope with student influx..

To reduce strains on existing resources in public institutions, we must implement policy initiatives that steer students towards other institutions or create parallel streams within public institutions that reduce pressure on resources in the main stream. This objective is seen as a temporary one; the instrumental purpose is to allow the system to recover from influx shock and prepare itself to handle the rising demand for HE. A variety of policy interventions are outlined below:

Table 5: Policy Alternatives for Objective #3

Policy Alternative	Predicted Outcome for Access	Predicted Outcome for Quality	Feasibility	Evidence on Success/Failure	Assessment Likely Net Gains + Time Frame + Priority	Adopt?
Institute and support private streams in public universities	Likely none on overall access; may create inequity in access to private streams in public universities	Large quality gains in private stream; mild gains in main stream	Most universities already have some form in place. Many programs looking to expand.	Many universities report success in increasing income and increasing quality in private streams. Most administrators in favor.	**High Gains** Short Term + Long Term **High Priority**	√
Encourage creation of private universities	Likely none on overall access as cost is higher in private universities; some access increases in terms of choice to select programs and/or if located in area without HE	Some gains to public institutions because of diverting away students; quality of private institutions varies widely.	Strong demand for private institutions; market incentives already in place	Has eased some pressure on public institutions; some private universities have good reputations in the labor market.	Medium Gains Long Term Low Priority	√
Encourage creation of non-profit universities	Likely none on overall access as cost is higher in non-profit universities; some access increases in terms of choice to select programs and/or if located in area without HE	Some gains to public institutions because of diversion, current non-profit institutions of high quality.	Lower interest in creating non-profit model vs. private model of HE.	AUC has strong reputation for quality and prestige, and good reputation in labor market.	Medium Gains Long Term Low Priority	√
Increase number of public universities	Likely none on overall access as cost is higher in non-profit unis; some access increases in terms of choice to select programs and/or if located in area without HE	Likely no quality increase because no net increase in overall budgets for HE.	Low financial resources available; public HE system already strained without additional capital costs.	Current public institutions not sufficiently funded and lacking in quality.	Low Gains Long Term No Priority	X

***Source*: Various**

Policy Recommendations:

Based on Table 5, the best policies to adopt, in order of implementation timeline, are:

Short Term: Institute and support "private streams" in public institutions, with a view to transitioning to a "parallel stream" system in the long term.

1. **Institute Private Streams with a Mixed Admissions Strategy (High Priority)**
   Many faculties within public institutions have already instituted private streams with smaller intakes. They are sometimes called "Centers for Excellence" or "Credit Hour" systems. Sometimes admission is based on merit, but most times faculties charge their students fees in exchange for smaller classes. Fees are approximately 10-15 times the registration fees in the main stream. In return, class sizes are significantly smaller[54]. These faculties should continue to institute or expand such streams through a strategy of mixed admission. Private streams should offer admission to high performing students who may not be able to afford the fees. Specific cost studies should be undertaken at each faculty to optimize the ratio of paying students to high performing students.

2. **Transition to a Parallel Stream System (High Priority)**
   Over time, the private stream should achieve financial sustainability and ideally contribute to the financial health of the main stream. The long-term goal should be to transition to a system where both streams run parallel with approximately equal student intake and resources (such as teaching staff and materials). Financial accountability is of utmost importance for long-term sustainability, and universities should carefully manage this process.

Long Term: Encourage the creation of non-profit and private universities, while simultaneously strengthening accreditation and evaluation processes in order to ensure their quality.

1. **Encourage the Creation of Non-Profit and Private Institutions**
   Financial incentives are already in place for the creation of non-public sector universities, as demonstrated by the burgeoning number of private institutions in the country. There is growing demand for HE in Egypt, and these institutions are able to benefit from the high demand for HE. However, the quality of education provided varies widely, and while these institutions ease enrollment pressure in public universities, they may not address the quality problem in Egyptian HE. It will be important to encourage rigorous accreditation and evaluation processes so that the quality of institutions is ensured in the country (see Recommendations for Objective #4). American University in Cairo (AUC)

is the only non-profit university in Egypt, and is highly regarded in terms of the quality of education provided. However, it is also the most expensive university in the country. As such, there needs to be some adaptation in the non-profit model in order to cater to a larger segment of the Egyptian population. Some individuals interviewed for the research recommended increasing the number of public universities in order to ease burdens on current universities; however, given the scarcity of resources in the public HE system, this is an unadvisable move.

Objective #4:
Address Within-Institution and System-Wide Barriers to Quality

- **Strategy**: Adopt policies that will allow Egypt's HE system to achieve and maintain high standards of student learning and academic output

To create a robust and effective system of HE, Egypt will need to adopt policies that strengthen its public HE institutions and provide the right incentives for quality improvement. A variety of policy reforms are outlined below:

Table 6: Policy Alternatives for Objective #4

Policy Alternative	Predicted Outcome for Access	Predicted Outcome for Quality	Feasibility	Evidence on Success/Failure	Assessment Likely Net Gains + Time Frame + Priority	Adopt?
Increase compensation and performance-based incentives for professors	None	Quality increase if right incentive structures in place	Difficult to obtain budgetary increases that will have large impacts on the entire professorate	Research finds significant relationships between school quality in developing countries and incentives for and monitoring of teachers[55].	Medium Gains Long Term Low Priority	√
Decentralize planning and decision-making processes in universities	None	Large increases in quality	Some pilots already done at the basic and secondary school level. Few problems reported.	Pilot was very successful; schools reported high satisfaction[56]. Increased school ownership of education goals.	**High Gains** Long Term **High Priority**	√
Increase the powers of the national accreditation board	None	Likely medium increases in quality	Feasible. NAQAAE already created in 2007. Plans long underway to increase its authority and visibility of findings.	Publicly available ranking systems, such as the College Board or the Princeton Review, strongly influence choice of consumers of HE in US market.	Medium Gains Short Term Low Priority **Low Cost**	√
Increase opportunities for research and incentives for intellectual exchange	None	Long term increases in quality	Difficult to finance initiatives, difficult to create a culture of research and intellectual exchange	Top HE systems have a strong culture of research and intellectual exchange	Medium Gains Long Term Low Priority	√

***Source*: Various**

Policy Recommendations

Based on Table 6, the best policies to adopt, in order of implementation timeline, are:

Short Term: Increase the authority of the national HE accreditation board and increase the visibility of its findings so that HE consumers can make informed decisions, thereby providing incentives for public and private institutions to improve institutional quality.

1. **Increase the Authority and Visibility of the NAQAAE**
   The Egyptian Authority for Quality Assurance and Accreditation (NAQAAE) was created to ensure that all HE institutions maintained reasonable quality. The Authority should raise its minimum standards and make its performance indicators clear to all HE institutions. There should be clear and severe consequences for failure to meet NAQAAE's criteria for accreditation; the federal government's role will be critical in anctioning increased authority. Results of institutional evaluations should be made freely and amply available so that students can make informed choices. This will also create incentives for institutions to engage in positive competition and improve the quality of their education provision.

Long Term: Decentralize planning and decision-making processes to public HE institutions so that they have increased ownership over quality goals and can steer themselves according to their specific needs.

1. **Decentralize Institutional Planning and Decision-Making (High Priority)**
   Most decisions related to university curricula, programs, and staffing are made at the Ministry level. Decentralizing these decisions will allow individual universities to set reasonable and progressive goals for achieving quality. As HE development can be university-specific, decentralized decision-making will allow universities to be more effective in meeting their goals. Through a greater sense of ownership, universities will be able to steer themselves according to their specific needs. Financial decentralization will be important for this reform to be optimally effective. In addition, a decentralized planning and financial system will increase intellectual independence in HE, which is critical for HE's integrity and long-term viability.

2. **Create Incentives for Increasing Institutional Quality: Professor Performance, Research, Innovation, and the Development of Academia**
   In order to develop academia in Egypt so that it can achieve its tripartite goals and sustain itself in the long term, proper incentives need to be provided to professors, researchers, and students. Professor salaries should be boosted so that professors do not have to find supplementary sources of wages. Professors and *muayids* should be given incentives to engage in collegial intellectual exchanges to develop their respective fields. Universities should engage in regional cooperation in order to stay globally abreast. Funding opportunities for research and innovation should be increased and, to the extent possible, students should be encouraged to participate in these initiatives to develop academia.

3.3 Six "High Priority" Policy Recommendations

Overall, the highest impact and highest net gain policy recommendations are, not surprisingly, high effort policies which require long-term change. These policies aim to transform the FA system and overall university structure at public institutions. All of them require buy-in and effective action at the university level. Some policy recommendations, such as the transition to a need-based FA model of fees, will be highly contested given the social value of a free HE.

Transform the FA System at Public Universities

1. •Streamline and simplify FA procedures for students.
2. •Create reliable streams of FA funding.
3. •Transition to a system of need-based FA.

Transform Institutional Structure at Public Universities

4. •Institute and support mixed admission private streams within public institutions, with a view towards transforming into a parallel stream system.
5. •Create a decentralized system of university finance.
6. •Create a decentralized system of university planning.

3.4 Three "Low Cost" Policy Recommendations

In addition to the six high priority policies above, three policies can be implemented with relatively low effort, no tradeoffs, and little financial cost to the government or the public HE system. Privately funded scholarships should continue to be encouraged by MOHE through tax breaks and local recognition. NGO and private participation initiatives are already in place and should continue to be encouraged. The incipient accreditation board's powers should be increased and its findings made more visible to encourage positive competition in the HE system.

Low Cost Policy Recommendations

1. Encourage privately funded scholarships.
2. Engage NGO and private sector participation for service provision and partnerships.
3. Increase the authority and visibility of the national HE accreditation board, and make information publicly available.

3.5 Summary

- In order to address the **dual goals of increasing access and equity**, policy recommendations must pay careful attention to **potential tradeoffs**. The analyses show that policies to increase HE quality have little or no anticipated effect on access, while policies to increase access very often have significant impacts on HE quality.
- **Four objectives** were identified to achieve these dual goals:
  - Create a system of financing education that increases equity
  - Increase resources available to public institutions
  - Reduce strains on existing resources at public institutions
  - Address institutional and system-wide barriers to quality in HE
- Given the broad-scale and long-term reforms that it attempts, the **overall policy strategy involves a mixture of long-term and short-term policy reforms, with paced expectations.**
- **Six high priority policies** are recommended to address two main areas of reform:
  - transforming the **financial aid system**, and
  - changing the **institutional management structure** at public institutions.

PART IV

Action Plan

4.1 Implementation Timeline

The six policy recommendations should be implemented gradually, optimizing how gains resulting from one policy will increase gains in others.

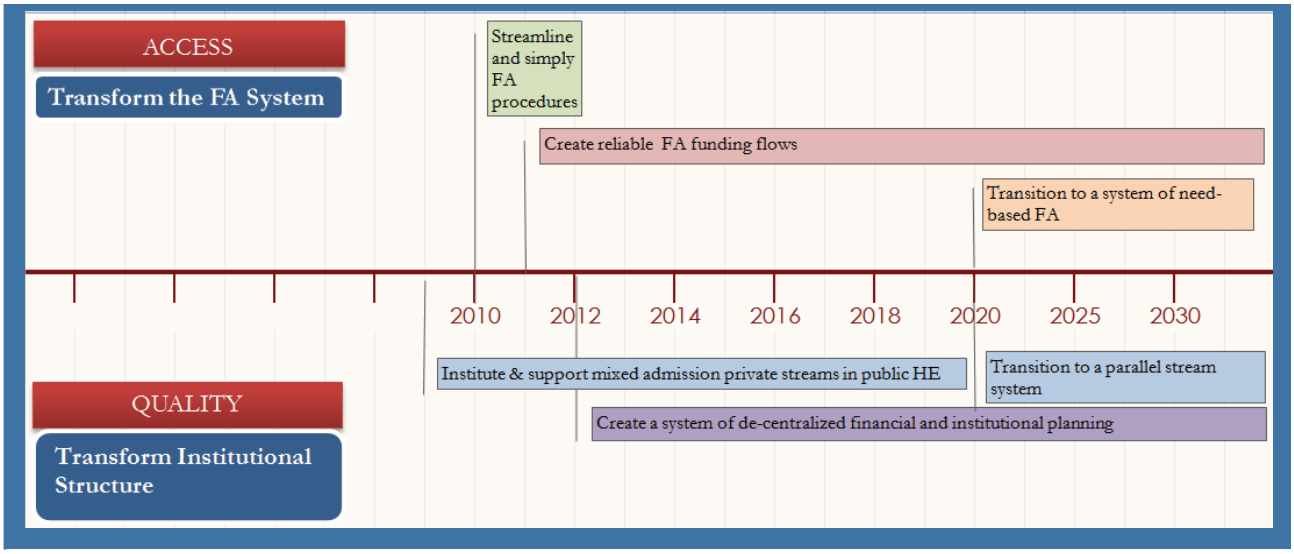


Figure 14. Suggested Implementation Time Line

As seen in *Figure 14*, immediate action measures are to simplify existing FA procedures and institute private streams with mixed admission. Students should be made aware of the general FA monies available to them upon gaining admission to (the main streams of) the university, as well as the FA available to them if they succeed in gaining admission to the more selective private stream[57].

The next set of reforms will be to decentralize financial and institutional planning to the university level while simultaneously developing a reliable and sustainable system of FA funding. Decentralization will increase university ownership of the FA process and will allow public institutions to more effectively develop the system for FA funding. In addition, a decentralized system will increase intellectual autonomy in HE, which is critical for HE's integrity and long-term viability. This set of reforms should commence in the next two years, spanning approximately five years to fully take shape.

In about ten years, when the FA's aid funding system has been sufficiently developed and public institutions have had time to stabilize their finances, there should be

a transition to a parallel stream system and a need-based FA system. These reforms go hand-in-hand and will require major transition management. Over time, the numbers of students in each of the streams should equalize. Fees charged to private students should be maintained but FA aid should be increased as funds become available. At the point of transition, resources available in both streams should be equal and the reputations of both streams should be about the same[58]. Upon gaining admission, students should be guaranteed FA based on need, and assigned randomly to streams.

4.2 Implementation Strategy and Performance Indicators

In order for the six high priority policy reforms recommended in Part III to be effective, implementation strategies with clear and accurate performance indicators should be put in place. Egypt's MOE has already created a comprehensive set of performance indicators for basic and secondary schools. This document—National Education Indicators for Egypt Technical Guide (January 2009)—could serve as a useful guide for the development of performance indicators in HE (see References).

Table 7 provides brief guidelines for their creation of an implementation strategy and performance indicators:

Table 7: Implementation Strategy and Performance Indicators

	Guidelines for Implementation Strategy	Guidelines for Determination of Performance Indicators
Transform the FA System at Public Universities		
Policy #1: Streamline and simplify FA procedures for students.	(a) Identify existing funds & evaluate coverage potential (b) Create easily navigable process of obtaining FA (c) House administration in one central location within university (d) Disseminate information on how to obtain FA and what to expect from FA at secondary school level	• Changes in uptake of FA • Changes in total funds • Changes in perceptions of procuring FA (of students and families)
Policy #2: Create reliable streams of FA funding.	(a) Identify reliable donor base (b) Set up systematic methods of contributing to university (c) Document use of funds and disseminate information to donors to increase pledges	• Changes in number of donors Changes in total amount of • contributions • Contribution changes by year
Policy #3: Transition to a system of need-based FA	(a) Clearly outline changes in system and what to expect (b) Set up online and in-person means for students to get information on changes	• Changes in perceptions of fees in HE • Changes to uni. enrollment & completion rates • Changes to quality of institution • Other effects on uni. system
Policy #4: Institute and support mixed admission private streams, eventually create parallel stream system.	(a) Based on available scholarship funds, determine optimal ratio of paying students to scholarship students (b) Set up guidelines on how revenue from the fees is going to be used (c) Create plan for long-term financial sustainability (d) Gradually try to equalize the allocation of resources and students between streams (e) At switchover, ensure financial sustainability of FA and operational needs of university	• Changes in ratio of fee payers to scholarship students over time • Changes in student achievement-e.g. graduation rate, in-class performance, student satisfaction, examination score, external academic achievements-due to smaller class size • Differentials in student achievement by fee payment
Policy #5: Create a decentralized system of university finance.	(a) Together with the MOHE, determine areas of jurisdiction of Ministry and that of uni. (b) Establish expectations of yearly federal funding and own fundraising goals (c) Assess efficacy of university board in executing financial reform, include other stakeholders, such as the private sector, civil society, and families (d) Create an overall financial sustainability strategy (e) Structure task-based sub-committees based on newly acquired areas of financial jurisdiction	• Financial health indicators, such as budget surplus/deficit, by year • University funding mix, by year • Financial health indicators, by newly acquired areas of jurisdiction
Policy #6: Create a decentralized system of university planning.	(a) Together with the MOHE, determine areas of jurisdiction of ministry and that of uni. (b) Create an overall Strategic Plan based on determined goals (c) Assess efficacy of university board in executing planning process, include other stakeholders as above (a) Structure task-based sub-committees	• Performance indicators specific to areas of jurisdiction

***Source*: Author's own research**

4.3 Critical Factors for Success

Three factors are critical for the successful implementation of these reforms. These are the existence of **political and social will**, sound **reform management**, and an **effective monitoring and evaluation process** that continually informs the overall reform process. This document will not be able to cover each of these factors in depth, but will briefly outline their importance to the efficacy of policies.

Political and Social Will

The various stake-holders in the HE system, such as MOHE, university administration, NGOs, students and families, and the community at large, have different interests, concerns, and levels of influence on reform. The support of the government—MOHE and MOE—is extremely important for the implementation of these policies. Even though these policies do not directly solicit budgetary increases from the government[59], decentralization requires them to take the greatest initiative. There may be a lack of political will to do so, as decentralization may be perceived as weakening the position of the central government.

In addition, university administrations need to take on increased responsibility for the financial wellbeing of their universities. Here too there may be a lack of will, particularly if decision-making administrators, mostly professors in Egypt, do not see this as their primary role. Finally, in order to transition to a system of need-based FA where fees are charged (albeit incrementally) to some students, there must be sufficient social will. As mentioned before, many Egyptians hold strongly to the promise of free education, and it will be hard to change such deep-rooted sentiments, even though the incidence of fees is likely to fall on a very small percentage of the population[60].

Reform Management

In order for these reforms to succeed, the offices or administrative units that direct the implementation of these policies must be tightly monitored to ensure transparency and efficacy. If these offices are perceived to be corrupt or inefficient, the reforms will not be effective, particularly reforms that aim to change cultural perceptions. Offices need to be meticulous about documenting procedures and outcomes; for example, in creating private streams, revenues from fee income and spending should be accurately documented and be available for routine audits.

Monitoring and Evaluation (M&E)

Finally, an M&E system should be implemented along with each of these reforms, so that:

- gradual adjustments can be made to policies as problems arise, and
- there is a systematic, long-term lesson-learning process in place

M&E should be done both internally and externally; there should be consistent monitoring of progress by staff in offices that implement the reforms as well as by external evaluators who can assess the overall outcomes and impacts of the new policies.

4.4 SUMMARY

- An implementation strategy that provides **clear performance indicators** is critical to ensuring that the execution of policies is effective.
- **Gradual and deliberate implementation**, as shown by the implementation timeline, will be important in ensuring that reforms are properly paced, expectations are realistic, and outcomes optimized.
- Three other important ingredients for the success of these policy reforms are:
    - **Political and social will**
    - **Sound reform management**
    - **Effective monitoring and evaluation**

Conclusions

Understanding the intricate interplay between access, equity, and quality is of great importance in reforming the Egyptian HE system.

There seem to be students in Egypt with multiple disadvantages who, in spite of fee abolition, are still unable to access HE *solely* due to financial constraints.. These students are constrained by multiple factors: they are poor, live in a rural area, are likely to be married by the age of entry to HE, and probably have parents who are not well-educated and thus do not place much value on HE. They are probably bound by social perceptions that education does not bring about much benefit and can even be detrimental to one's social status. These factors have systematically lowered these students' probability of accessing HE from secondary school and, very likely, even earlier. There are likely very few well-qualified students who are unable to access HE due solely to financial constraints.

The policies proposed here include significant student-level interventions, such as financial aid system reform, that will increase access to HE for students with financial constraints. However, we can expect progress to be slow because students with financial constraints are very likely to be inhibited by multiple constraints. It will be difficult to quickly and effectively dissolve all the barriers that exclude these students from HE.

The more pressing concern for Egypt-and the reform area that seems to have the largest potential for gain-seems to be the quality of its HE system. Major structural changes need to take place to increase universities' financial viability, the quality of its professorate, the quality of its infrastructure and resources, and the quality of its product-a higher education. These structural changes are much needed for Egypt's development, and if, carried out well, have the potential to make large contributions to individuals and society at large.

Policies that aim to increase both access and quality will have to be carefully formulated to avoid large and lasting tradeoffs. Policies that aim to increase equitable access to HE invariably have to take into account quality implications, as access increases have a strong dilution effect on quality. In Egypt, the correlation seems to be so strong that it often prevents public HE institutions from meeting their basic goals of creating skilled workers for the labor market, providing a liberal education with reasonable learning outcomes, and ensuring the academic viability of the system itself. This is due in large part to the unique youth bulge in the country, which funnels an additional 6% of HE students into the system each year. The labor market, like the HE system, is unable to keep up with student increases. Increases in quality will probably have an effect on access as well, that is, access in terms of choice of program or institution**.** This has not been the focus of this document, and remains a dimension for further research.

Given the scale of these reform endeavors, implementation will have to be gradual, and Egypt will have to be patient in waiting for results. Political will and social acceptance of such fundamental reforms is of utmost importance in the Egyptian context. The hope is that with a combination of student-level and institution-level policy interventions, carried out progressively over the next ten years, the dual goals of increasing access and quality will be achieved without gains in one domain offsetting the progress made in the other.

Appendices

Appendix A: Paths to Higher Education in Egypt

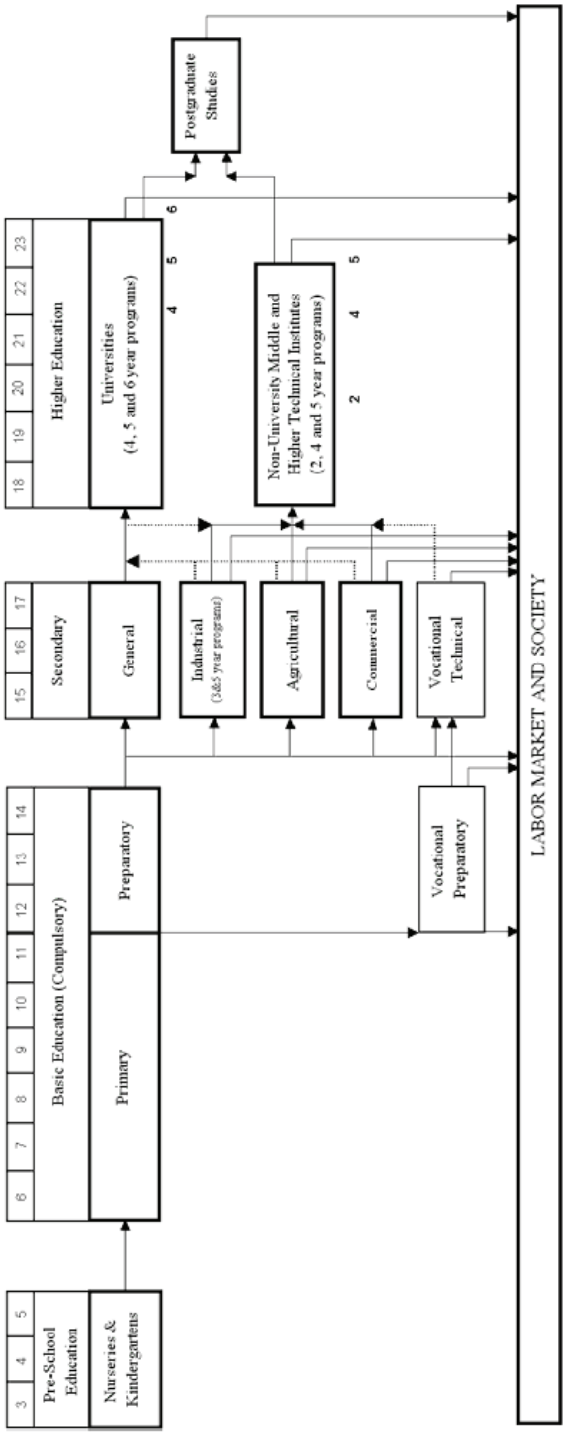


Figure 15: **Paths to Higher Education in Egypt from Ministry of Higher Education, 2001 (from UNESCO)**

Appendix B: Teaching Staff Growth vis-à-vis Student-Teacher Ratios in HE in Egypt

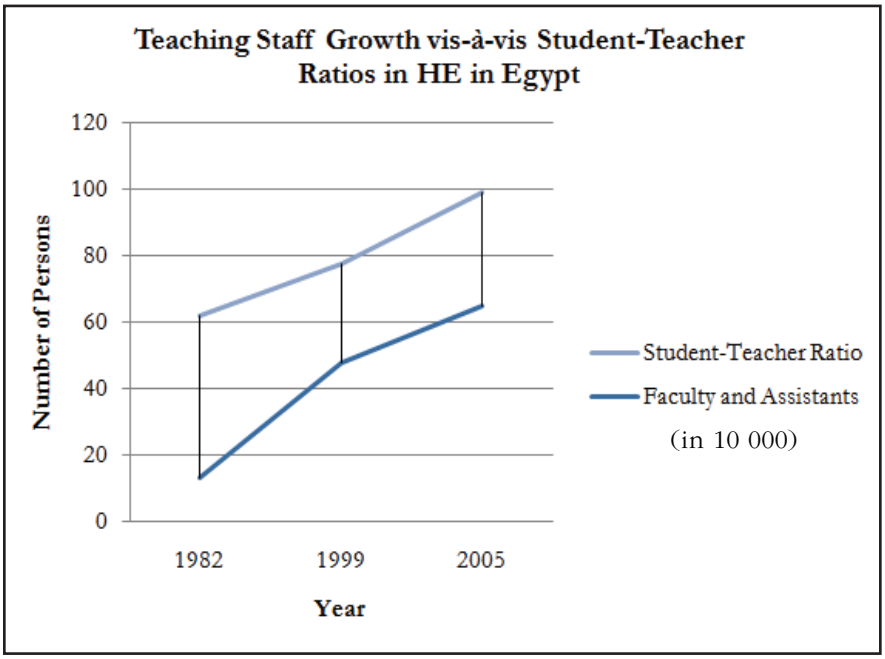


Figure 16: **Teaching Staff Growth vis-à-vis Student Teacher Ratios in HE in Egypt from Said (2001), World Development Indicators**

Appendix C: Alphabetical Listing of Private and Public Universities in Egypt with Geographical Location

Table 8: Alphabetical List of Colleges and Universities in Egypt and City

Universities	Town(s) of Location
Ain Shams University	Abbassia
Akhbar El-Yom Academy	Cairo
Al Azhar University	Cairo
Alexandria University	Alexandria and other locations
American University in Cairo	Cairo
Arab Academy for Science & Technology and Maritime Transport	Alexandria and other locations
Assiut University	Assiut and other locations
Banha University	Banha
Beni-Suef University	Beni-Suef
Cairo University	Cairo
Delta University for Science and Technology	El Mansoura
Fayoum University	Fayoum
Future University Egypt	New Cairo
German University in Cairo	New Cairo
Helwan University	Cairo
Higher Technological Institute	Tenth of Ramadan City and other locations
Kafr el-Sheikh University	Kafrelsheikh
Mansoura University	Mansoura and other locations
Menoufia University	Shebin El-Kom and other locations
Minia University	El-Minia
Misr International University	Cairo
MISR University for Science and Technology	6th of October City
Nahda University	Cairo
Nile University	Cairo
October 6 University	6th of October City
October University for Modern Sciences and Arts	6th of October City
Pharos University in Alexandria	Alexandria
Senghor University	Alexandria
Sinai University	Cairo
Sohag university	Nasser city
South Valley University	Qena and other locations
Suez Canal University	Ismailia and other locations
Tanta University	Tanta
The British University in Egypt	El Sherouk City
Université Française d'Égypte	El Sherouq City
Zagazig University	Zagazig

***Source*: 4 International Colleges and Universities**

Appendix D: Main Research Questions and Sub-Questions

Quantitative Analysis

Main Research Question and Sub-Questions

Which individuals in Egypt have access to higher education?

- What is his or her gender?
- What is his or her average family income? (also using wealth proxies)
- How educated are his or her parents?
- Were both his or her parents present in the home?
- From what part of the country did he or she come? (addressing regional disparities)
- What kinds of secondary schools did he or she go to?
- What was the quality of his or her secondary school? (using proxies)
- How close did he or she live to his or her secondary school?
- How large was his or her family?
- Was he or she married?

Qualitative Analysis

Main Research Question and Sub-Questions

Which individuals in Egypt have access to higher education?

- What is the population makeup of your university/faculty, with a general breakdown by demography? (Gender, income, rural/urban, etc.)
- What are comprehensive costs for attendance? Fees, cost of residency, etc.
- Is there a general access issue for low-income students? What prevents students from accessing HE?
- Is there a choice issue for students? Are they limited to certain programs or universities?
- Comment on quality of education at public universities.
- What are some solutions for increasing overall general equitable access or increasing access to quality education?

Appendix E: Descriptive Statistics for HE Access Analysis

Table 9: Descriptive Statistics for HE Access Analysis

		Higher Education Access for All Adults ***(above 18)***			Higher Education Access for Higher education Age Cohort ***(19-23)***		
Variables	**Modalities**	**No**	**Yes**	**No Response**	**No**	**Yes**	**No Response**
Gender	Female	52.1	42.5	31.4	47.8	56.1	33.9
	Male	47.9	57.5	68.7	52.2	43.9	66.2
Urban/rural	Rural	59.5	80.9	58.8	43.1	22.8	43.1
	Urban	40.5	19.1	41.2	56.9	77.2	56.9
Marital status	Not married	27.8	34.4	94.1	81.3	89.1	96.9
	Married	72.2	35.6	5.9	19.0	10.9	3.1
Secondary Type of School	Public	8.1	21.2	0.0	12.9	19.4	0.0
	Private	0.8	2.5	0.0	1.4	2.7	0.0
	Missing	91.1	76.2	88.3	85.7	77.9	100.0
HH income per capita ***(Sample Median: 165 EGP / mth)***	Below the median	54.9	31.3	50.0	50.5	34.7	47.7
	Above the median	45.1	68.7	50.0	49.5	65.3	52.3

***Source*: ELMPS, World Bank MNSHD**

Appendix F: Determinants of Access to Secondary School

For the secondary school analysis, a methodology similar to that of the HE analysis was used. A current cohort of 1419 secondary-school-aged children who were enrolled in different types of secondary schools in 2006 was studied. The descriptive data can be found in the two figures and one table below, and the econometric findings in Appendix *G*.

Overall, it was found that the significant factors for access to General Secondary School were gender, marital status, household income, and fathers' education. Mothers' education (in the regression analysis) did not seem to be significant, mostly because of the unusually low response rate of mothers (see full table on descriptive statistics below).

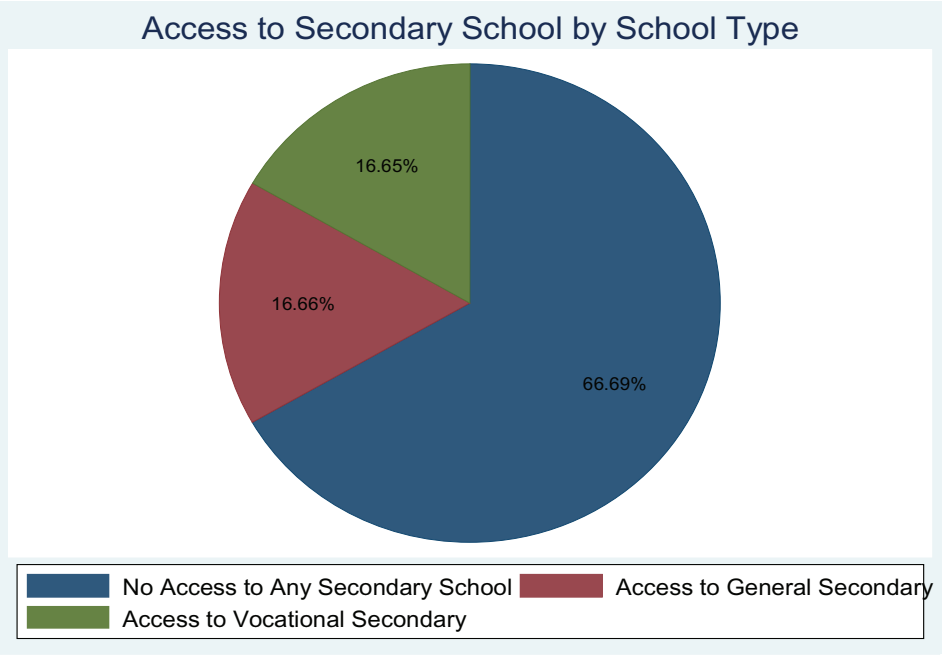


Figure 17: **Access to Secondary School by Type from ELMPS, MNSHD World Bank**

Appendix F: Determinants of Access to Secondary School (cont.)

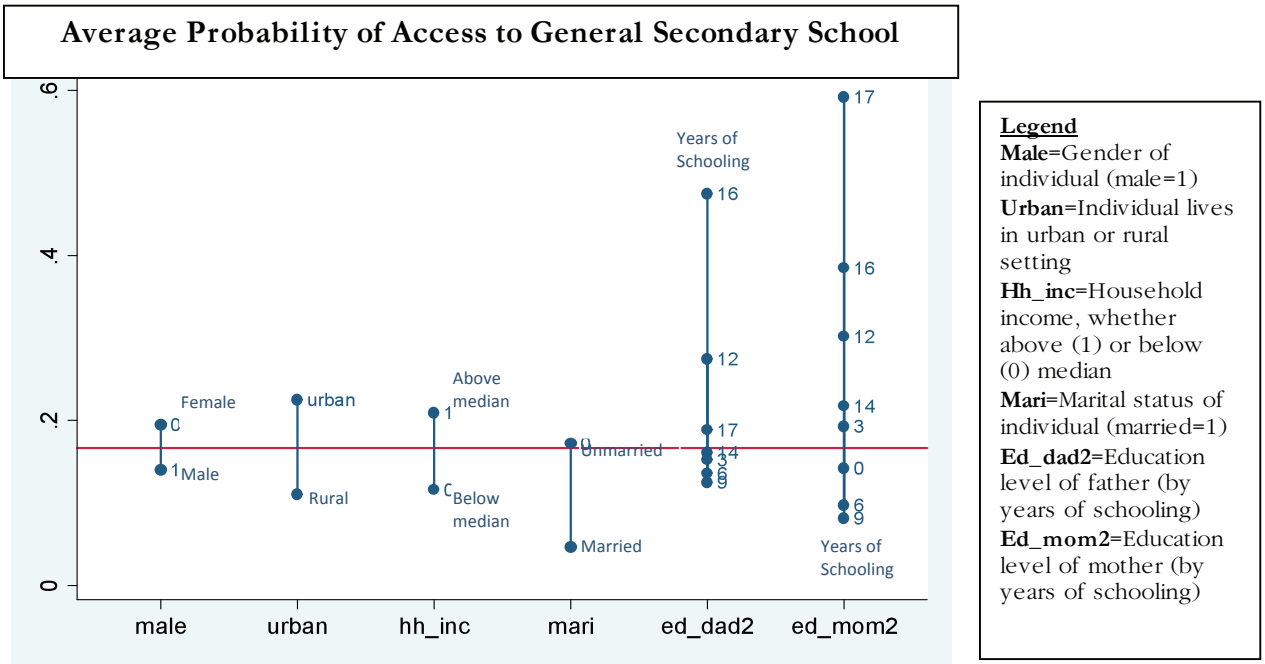


Figure 18: **Average Probability of Access to General Secondary School by Determinants from ELMPS, MSNHD World Bank**

Table 10: Descriptive Statistics: Secondary School Access by Age Cohort (Ages 15-19 Years)

		Secondary Access for Secondary Age Cohort *(ages 15-19)*		
Variables	**Modalities**	**General Secondary**	**Vocational Secondary**	**No Access**
Gender	Female	46.48	48.20	48.59
	Male	53.52	52.80	51.41
Marital status	Not married	1.41	2.16	4.55
	Married	98.59	97.84	95.45
Marital/Female *(restricted for female)*	Female/Not Married	96.97	96.27	91.13
	Female/ Married	3.03	3.73	8.87
Urban/rural	Rural	36.62	56.83	59.21
	Urban	63.38	43.17	40.79
Secondary Type of School	Public	12.9	19.4	0.0
	Private	1.4	2.7	0.0
	Missing	85.7	77.9	100.0
HH income per capita *(Sample Median: EGP 165 per month, approximately USD33 per month)*	Below the median	57.75	53.24	56.54
	Above the median	42.25	46.76	43.46

***Source*: ELMPS, MNSHD World Bank**

Appendix G: Regression Analysis for Determinants of Access to HE for Age Cohort

Table 11: Final Parsimonious Model: Determinants of Access to Higher Education

	(1) Access to HE	(2) Access to General Secondary School
Intercept	-18.2018***	-13.4784***
Age	0.7454***	0.6502***
Marital Status	-0.7067**	
Urban	0.8332***	0.3849*
Male	-0.5472***	-0.5633***
Father Education	0.0597***	0.0894***
Mother Education	0.0457**	-0.0202
Presence in Household	0.4443**	
Household Income Per Capita	0.0001*	0.0004*
Goodness-of-fit		
Pseudo-R^2	0.1578	0.1575
Observations	1830	1419

Key:~p<0.1 *p<.05 **p<.01 ***p<.001

***Source*: ELMPS, MNSHD World Bank**

Appendix H: Wald and Chow Tests for Differences in Determinants by Income Level

Table 12: Wald Test for Differences in Determinants by Income Level

Share of the richest	5 %	10 %	25 %
Wald Statistic	25.653616	29.125949	29.908903
Quantile of the Chi2	21.026	21.026	21.026
Decision (at 5% significance level)	Reject H0	Reject H0	Reject H0

***Source*: ELMPS, MNSHD World Bank**

Table 13: Chow Test for Differences in Determinants by Income Level

Variable	model_poor95	model_rich05
age	0.782***	1.622***
region_2	-0.149	-1.086
region_3	-0.015	-0.036
region_4	-0.431	-1.196
region_5	-0.897***	-1.668
region_6	-1.410***	-0.886
female	0.517***	0.885
ed_dad	0.062***	-0.007
ed_mom	0.055**	0.145*
presence	0.399*	1.232
hhincome_p~a	0.001***	0.000*
_cons	-18.948***	-37.030***
N	1718.000	89.000
ll	-583.107	-29.176
chi2	211.196	22.824
aic	1190.214	82.352
bic	1255.601	112.216

legend: * p<0.05; ** p<0.01; *** p<0.001

***Source*: ELMPS, MNSHD World Bank**

Appendix I: Number of Sources for Interviews, by Type of the Source

Table 14: Number of Informants for Interviews, by Type of Informant

Type of Informant	Number of Persons
Students	13
University Professors and Administrators	9
NGO Workers	9
Others	3
TOTAL	34

Source: **Author's own research**

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Endnotes

1 Prepared in collaboration with UNESCO. See References.
2 World Bank and UNESCO 2000
3 Barro and Sala-i-Martin (1995); Jenkins (1995); Lin (2004); Bloom et al. (2005) as cited in World Bank (2009)
4 Whether or not HE, or education in general for that matter, contributes to growth remains a debate. Many researchers in the 1990's found that it does, while other studies—notably more recent research—has shown that it does not, or when it does, the effects are marginal. Researchers who have found that education contributes to economic growth include Lucas (1988), Barro (1991), and Mankiw et al. (1992). Those who found that it does not, include Pritchett (2001) and most recently Acemoglu and Angrist (2000), as well as Moretti (2004). See References.
5 (World Bank 2009)
6 Section 2.1 will discuss the methodology more thoroughly.
7 For a more comprehensive description of the state of higher education in Egypt, please see World Bank/OECD's Higher Education in Egypt (2009). Most of the data in this section is drawn from this World Bank publication.
8 Bayoumy (2009). The number stood at 73 million based on a census survey conducted in 2006 (World Bank and OECD 2009).
9 World Bank and OECD (2009)
10 Bayoumi (2009)
11 ibid.
12 ibid.
13 World Bank (World Development Indicators 2010)
14 Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Net enrollment only takes into account children of the recommended age cohort, i.e. Net enrollment ratio is the ratio of children of official school age based on the International Standard Classification of Education 1997 who are enrolled in school to the population of the corresponding official school age. (World Development Indicators).
15 Source, where not quoted, refers to the author's own research
16 Said (2001)
17 World Bank (World Development Indicators 2010). Another 2005 estimate is 30.5% (Said 2006).
18 World Bank (World Development Indicators 2010)
19 World Bank (World Development Indicators 2010) and Said (2001)
20 The data on this varies largely--Said (2001) estimates the student-teacher ratio in HE to be 100:1 in 2005, while Fahim (2009) estimates 32:1 based on the Global Education Digest (2007). However, all sources put Egypt's ratio as much higher than the world average.
21 Fahim (2009)
22 Fahim (2009)
23 Ibid.
24 World Bank (World Development Indicators 2009) Data from previous years is not

available.

25 Said (2001)

26 Fahim (2009)

27 ibid.

28 The government's financial constraints are high; thus, policy recommendations will not include increases in budgetary allocations.

29 ibid.

30 ibid.

31 Fahim (2009)

32 Fahim (2009)

33 World Bank and UNESCO (2000).

34 World Bank and UNESCO (2000). Approximately equivalent to an Associate's Degree given by a US community college.

35 Fahim (2009)

36 This number includes a nationally representative sample of 4816 households that were visited in 1998, households who split from that sample between 1998 and 2006 (some members moved out of the original surveyed household to form their own households) and a refresher sample of 2500 households surveyed in 2006.

37 As mentioned before, "access" is defined as "one-time enrollment at a tertiary institution in Egypt, with no regard for completion or attrition rates". Some sources estimate the drop-out rate to be as high as half of all enrollees.

38 Clearly, the quantitative analysis done here is very cursory and much more can be done to explore more deeply the inequalities that exist in terms of access. The econometric model could be improved by including other poverty indicators, such as regional indicators of disparity within Egypt. More data on the costs of a university education could be gathered and included in the regression model as well. Further analysis could be done using better weights or clustering techniques. Perhaps multilevel modeling could be done at the household and community level. In addition to household income, perhaps a Principal Components Analysis could be done on indicators of wealth or consumption, given the high unemployment levels. All these are ripe avenues for further analysis.

39 Select faculties seem to have increased fees dramatically in 2003. For example, fees changed from EGP 250 (approximately USD 50) to EGP 600 (approximately USD 120) for the Faculty of Commerce, and from EGP 150 (USD 30) to EGP 700 (USD 140) in the Faculty of Political Science at CU. There were no increases in the Faculty of Law.

40 Alexandria University's fees were between EGP 140 and 240 (approximately USD 28-48). The student must have other siblings in school in order to qualify for the reduction.

41 The 50 scholarships are funded through the LEAD program, which is sponsored partially by USAID. Additional monies come from a combination of private and non-profit sponsors.

42 Yearly increases in HE enrollment are estimated at 6% (Bayoumi 2009).

43 Current fees at AUC stand at EGP 80,000 for an undergraduate degree (approximately USD 16,000).

44 For example, Al-Samarrai and Zaman (2007) found such an effect when primary school fees were eliminated in Malawi. Deininger (2001), and Grogan (2006) found similar effects when primary and secondary school fees were eliminated in Uganda (using two separate surveys).

45 Financial aid (FA) is used as a general term for financial assistance throughout this paper.

46 Assuming that the system remains as is.

47 Studies done in sub-Saharan African countries show that when direct and indirect costs of education are lowered for very low income people, access to education is higher. However, most studies have been done on primary and secondary school. See Al-Sammarai & Zaman (2007), Borkum (2009), Deininger (2001), Grogran (2006), Grogran (2008) for positive effect of fee abolition on enrollment. One study that did not find an impact of fee abolition on enrollment was Valerio et al. (2006).

48 Ability to access prestigious programs at universities depended on a student's ability to afford high quality extra classes; as such, extra classes made entrance to universities inequitable based on income level (Peng Wang 2008).

49 Johnstone (2004)

50 "The World Bank Poverty Reduction Strategy Report 2003-2004", as cited by Fahim (2009), finds that HE spending on the lowest quintile in Egypt is approximately 15% of the total expenditure, while spending for the highest quintile is approximately 25% of the total.

51 See Al-Sammarai & Zaman (2007), Borkum (2009), Deininger (2001), Grogran (2006), Grogran (2008) for positive effect of cost reduction on school enrollment.

52 Assuming that the system remains as is.

53 Research Triangle Institute (2010)

54 For example, in Ain Shams university, the main stream enrolls 40,000 students, while the credit hour stream enrolls approximately 1000. In the Faculty of Engineering at Alexandria University, the main stream enrolls 3000, and the credit hour stream only 500.

55 In a comprehensive review of international education, Glewwe and Kremer attribute low school quality to low teacher incentives (2007). In addition, Figlio and Kenny (2007) find that Israeli secondary school teachers respond well to performance-based incentives. See also Duflo, Hanna, and Ryan (2008) which found that teachers in India were responsive to attendance monitoring and pay incentives. In HE, there seems to be a high quality of education in systems where professors are paid well, e.g. United States, Singapore, and Japan.

56 See Research Triangle Institute (2010).

57 The assumption is that sufficient funding exists to provide these scholarships to the private stream, however few at this point.

58 However, perceptions of quality may take additional time to change completely.

59 For at least a large majority of these reforms, significant budgetary increases are not requested.

60 Given current income distribution data, it is likely that the incidence of fees is not going to create significant impact on the majority of students in the public HE system.

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