

MINISTRY OF HIGHER EDUCATION (**MOHE**)
PROJECTS IMPLEMENTATION UNIT (**PIU**)

HIGHER EDUCATION IN EGYPT

Manuscript Prepared by

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LIST OF ABBREVIATIONS

AC	After Christ
AUFE	Ain-Shams University Faculty of Engineering
BC	Before Christ
CAPMAS	Central Agency for Public Mobilization and Statistics
CU	Cairo University
CUFA	Cairo University Faculty of Agriculture
CUFC	Cairo University Faculty of Commerce
CUFE	Cairo University Faculty of Engineering
CUFL	Cairo University Faculty of Law
CUFM	Cairo University Faculty of Medicine
CUFN	Cairo University Faculty of Nursing
CUFS	Cairo University Faculty of Science
DPS	Department of Public Services
EEDP	Engineering Education Development Project
ETEP	Engineering and Technical Education Project
EU	European Union
EUN	Egyptian Universities Network
FOD	Faculty of Dentistry
FOE	Faculty of Education
GAI	General Authority for Investment
GDP	Gross Domestic Product
GOE	Government of Egypt
H&SS	Humanities and Social Sciences
HE	Higher Education
HEEP	Higher Education Enhancement Program
HEEP-ECM	HEEP Executive Committee Member
HEEP-NCM	HEEP National Committee Member
HEEP-OCM	HEEP Organizing Committee Member
HEEP-SCM	HEEP Sub-Committee Member
HEEP-TFM	HEEP Task Force Member
HEI	Higher Education Institutes
HTI	Higher Technical Institutes
ISP	Internet Service Provider

IT	Information Technology
MA	Master of Arts
MAD	Minister of Administration Development
MDP	Mechanical Design and Production
MIS	Management Information System
MIT	Menoufia Institute of Technology
MOE	Ministry Of Education
MOF	Ministry of Finance
MOH	Minister of Health
MOHE	Ministry of Higher Education
MOI	Ministry of Industry
MOIC	Ministry of International Cooperation
MOP	Ministry of Planning
MP	Member of Parliament
MSc	Master of Science
MTI	Middle Technical Institute
NQAC	National Quality Assurance Commission
NQF	National Qualifications Framework
NUS	Non-University Sector
OECD	Organization for Economic Co-operation and Development
PA	People's Assembly
PCU	President of Cairo University
PhD	Philosophy Doctor
PIU	Projects Implementation Unit
S&T	Science and Technology
SCHE	Supreme Council of Higher Education
SCU	Supreme Council of Universities
TE	Technical Education
TTEDP	Technical Teachers Education Development Project
UNIV	Universities
US	United States
USAID	United States Agency for International Development
VP	Vice President
WB	World Bank

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The draft of the manuscript was sent to many experts in the field of Higher Education who have made notable contributions in the development of Egypt's current higher education reform plan, for their review and comments. Nearly 50% responded. The following is a list of contributors from the National HEEP Committee chaired by the Minister of higher education Dr. Moufid Shehab, and/or reviewers who responded (marked with an '*'), and who provided valuable comments on the draft manuscript, or parts of it, many of which were taken into consideration in the final version.

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HIGHER EDUCATION IN EGYPT

Historical Background

Higher Education in Egypt may be considered the oldest education system in the world. The world's highest educational ranking was granted from Oun educational institution established in the second millennium BC, North-East of Cairo. The following millennium witnessed the movement of the center of education to Alexandria, about 300 years BC. Al-Azhar, an Islamic establishment for well over one thousand years (established in 975 AC), was primarily dedicated for teaching Islamic religion topics, and studying the holy Quran. It took about seventeen years to build Al-Azhar mosque (971 – 988 AC), which was used then as the premises of the educational establishment. Modern Egyptian education, however, started in the time of Mohamed Ali Pasha (1798 AC) when he established many schools for Engineering, Medicine, Law, ... etc. At that time, distinguished graduates were sent to Western Europe, in particular to France, to pursue higher education. Upon their return, they helped a great deal to advance the education system in Egypt.

In 1908 a national university was established in Egypt. Later in 1925, this national university was merged into a public university, and later in 1940 was named after the king of Egypt at that time, Fouad El-Awal. In 1953 after the revolution it was named Cairo University. The number of universities kept increasing ever since.

Modern education in Egypt was legalized in 1923 when the first constitution was issued to stipulate legal provisions for education that “primary education is compulsory for all Egyptian children”. In 1952, the government of the revolution forward undertook a major executing step. The development of a unified primary compulsory education was one of the main objectives of education.

Egypt participated in the ratification of the World Agreement on economic and social rights, and the contents of the agreement have become part of the state laws. In 1971, an article to stipulate “the state guarantees equal opportunities for all citizens” amended the constitution. In the same year, another amendment article was issued stipulating, “All citizens are equal before the law,

regardless of their responsibilities, duties, sex, origin, religion or belief⁷. In order to support the statements issued under these two articles, a constitutional framework was set up for the entire education system that included the following principles in the form of legal articles:

- Education is a fundamental right.
- The state is responsible for providing education for all, and supervises education to ensure equity.
- Education in public institutions (state run institutions) is free at all levels.
- Literacy is a national responsibility.
- Both Primary and Preparatory education are compulsory – A Law was passed by the Egyptian parliament in the year 1981 to announce Preparatory as compulsory as well along with the Primary (9 years of basic education).

In 1988, however, a new law was passed to stipulate 8 years of basic education as compulsory, changing the terminal year from grade 6 to grade 5. In 1999, a new counter law announced the duration of compulsory education to be nine years, six years in primary and three years in preparatory level, returning back to the original system as it was before the 1988 law. Although the intentions of the 1988 law were meant to reduce the cost of compulsory education due to the inability of the system to maintain the level of investment needed, the consequences on the education system as a whole were quite harmful. The number of secondary school students were doubled in the year grade six was eliminated and overcrowding of students entering the university three years later caused many problems. Overcrowding of students continued for many years and the current education system is still suffering from the consequences of this action. Failing students, together with the newly admitted students maintained the large number of students in successive years.

As one of the strategic and prime mandates of the Egyptian government is to admit all students coming out from secondary education into tertiary education, the number of students admitted to higher education institutions was nearly doubled. Obviously the infrastructure in government institutions was not prepared, nor ready to accommodate this sudden increase in the number of students admitted. Inadequate expansion, poor and limited facilities, complemented by overcrowding, considerably affected the overloading of the system, and led to the deterioration of the average quality of the graduate. A note worth mentioning, however, is that ‘above average’ students graduating from the system perform well according to international standards.

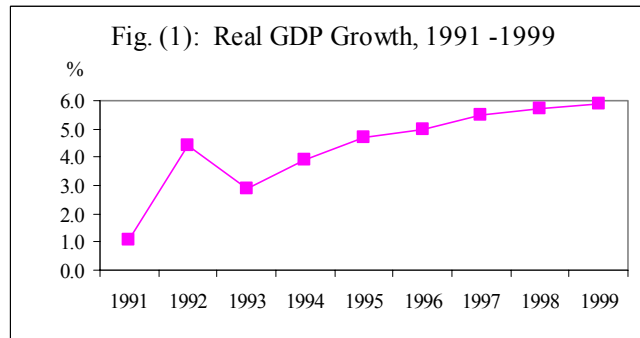
The large number of students accepted and admitted yearly to top ranking universities in the US, Europe and other reputable universities worldwide supports this argument. Over one thousand postgraduate students are supported annually by the Missions Department of the MOHE, which holds a budget of 1.25 billion L.E. over the government's current five years plan (1997 – 2002).

Approximately one-third of the students enter general secondary schools, the traditional route to universities. Almost 70% of students are channeled into technical secondary education, but less than 20% gain employment when they leave. The low employment rate for graduates demands that the relevance of technical education as presently structured be reconsidered, including the possibility for merging of the 'two tracks' into an effective unified education system with internal options for matching student abilities with learning opportunities. To start with, ambitious reform plans, partially supported by the World Bank, the European Union, USAID and others, are currently being implemented. The reform plans aim at channeling approximately half of the students admitted to secondary education into general secondary schools over the next five years. This secondary education reform measure will cause further overcrowding, and will add further burden on the higher education system as a whole.

Background on Egypt's Recent Economic Status

Over the second part of the twentieth century, Egypt's economy has been over burdened by three wars that exhausted the greater part of its resources. Ever since the wars were over, economic reform plans were the main object of successive governments. In the 1990s, however, the Egyptian economy witnessed wide-ranging reforms towards a more competitive market-based system. The initial phase of economic reform involved removing many of the distortions in the price system and impediments to trade and investment. The results of the reforms were positive on the macroeconomic front. The budget deficit was brought down, liquidity creation was managed, inflation was reduced, exchange-rate stability was maintained, external reserves increased, and growth accelerated. The second phase of the reform effort focuses on the microeconomic level by deepening structural reforms to induce a strong and sustainable supply-side response from the private sector.

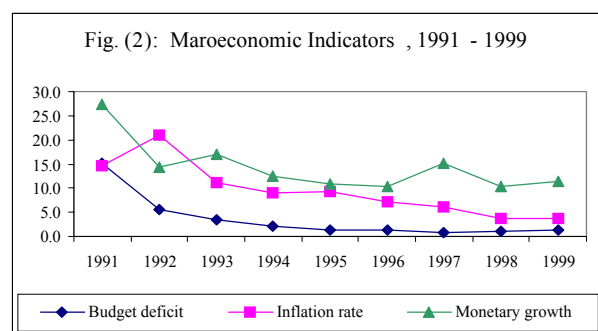
In recent years, real GDP growth has been rising steadily and is estimated at 6.0 percent in 1998/99, Fig. (1). The accelerated growth is largely attributed to the increasing participation of private sector in economic activity with the government commitment to reform.



Government investment in infrastructure to improve the country's productive capacity has also contributed to economic growth.

While private sector activity is picking up and the role of private investment in the development process is increasing, there are yet some obstacles hindering greater participation. These obstacles are mainly institutional. Among these are: (i) high and unrealistic assessment of tax liabilities, (ii) slow and costly procedures in the commercial judicial system, and (iii) lack of an effective mechanism for financing small-scale enterprises which represent the bulk of the private sector. These obstacles necessitate microeconomic reforms, including institutional capacity building.

The Egyptian authorities have been particularly successful in containing the budget deficit and keeping it at a low level (1 - 1.3 percent of GDP), Fig. (2). The same applies to controlling monetary growth and domestic inflation, which remained at 3.8 percent in 1998 and 1999. It should be noted,



however, that fiscal deficit increased significantly in 1999, reaching 4.2 percent of GDP, associated with expansionary public expenditure on large national projects. But the authorities iterated that fiscal discipline will be restored mainly through better tax administration and higher privatization proceeds on the revenues side. Table (1) contains some of the key economic indicators that reflect recent progress in Egypt's economy. Exchange rates have been maintained nearly constant over the past 10 years, reflecting economic stability. More recently, however, the last quarter of year 2000 and the beginning of year 2001 witnessed a sudden devaluation of

the Egyptian pound versus the US dollar by nearly 20%, which is expected to reflect negatively on the economic stability.

Table (1): Key Economic Indicators

Key Indicator	1996	1997	1998	May-99
Population (millions)	60.6	63	65	66.9
GDP Per Capita (L.E.)	3,767	4,067	3,942	3,830
Real GDP Growth Rate (%)	5	5.3	5.7	6
Average Annual Inflation (%)	7.3	6.2	3.8	3.8
Unemployment (%)	9.2	8.8	8.3	7.7
Fiscal Deficit (%)	1.3	0.9	1	1.3
Current Account % GDP	0.3	0.2	3.4	1.5
Foreign Dept (% GDP)	46.8	38.8	34.3	31.5
Total Liquidity (M2), (L.E. millions)	168,023	193,426	209,966	230,413
Net International Reserves (L.E. million)	90,737	94,031	81,616	67,218
Central Bank Reserves (L.E. millions)	61,478	67,751	67,023	60,786
Reserves/months of Imports (months)	15.7	15.7	14.3	14.8
Exchange Rate (US\$/L.E.)	3.393	3.389	3.395	3.396

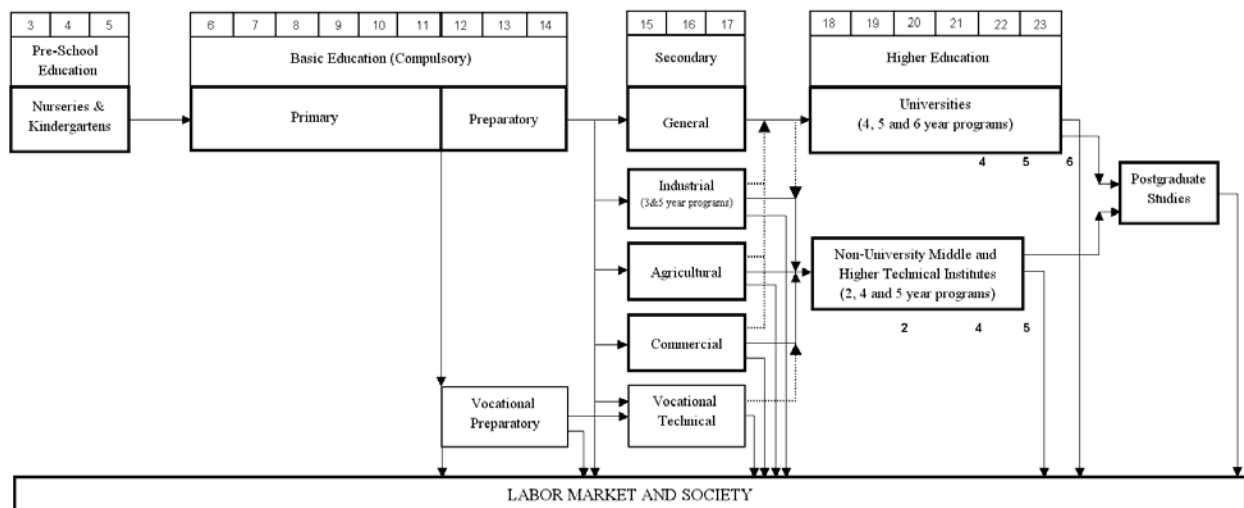
Source : Egypt 2000 Annual Statistics Booklet , Ministry of Economy , November 2000.

CURRENT STATE OF THE HIGHER EDUCATION SYSTEM IN EGYPT

Overall Education Structure

When talking about higher education, it is very difficult to rule out the rest of the educational ladder prior to higher education. Outputs from secondary education are the normal stream of input to tertiary, or higher education. The current overall education structure in Egypt by age and level is schematically represented in the layout shown in Fig. (3). The layout gives a comprehensive overview of the education system in Egypt highlighting entries to and exits from the different levels of education into the labor market and society.

Fig. (3): Overall Education Structure in Egypt by Level and Age



Students coming out of pre-school education (nurseries and kindergartens) are all streamed into the six years primary education, followed by three years of preparatory, thus completing the basic compulsory education. After the six years of primary education, provision is made in the system to stream the student either into the regular three years preparatory, or into vocational preparatory which also lasts for three years. The output from the three years vocational preparatory may exit directly to the labor market, or may continue for a three years of vocational technical secondary education before leaving to the labor market and society. Provision is also made in the system to enable outstanding students to join the non-university stream of higher education. On the other hand, output from the three years regular preparatory may be channeled into four different streams of three years secondary education, namely; general, industrial (3 and 5-year programs), agricultural and commercial, in addition to the vocational technical secondary. Graduates of the 5-year programs have better chances of getting into university education, and receive better offers and opportunities from the labor market than graduates from the 3-year programs. The entrance to secondary education streams is based on the grades achieved in the preparatory phase. Output from the four streams of secondary education, however, have the following options as clearly visualized in the layout of Fig. (3).

Graduates from general secondary are streamed directly into 4, 5 or 6 year programs of university education, whereas, graduates from the other three streams; industrial, agricultural and commercial secondary education, are all channeled into non-university education where options are available to be enrolled in 2, 4 or 5 year programs offered in middle and higher technical institutes. Graduates from general secondary education can join the non-university stream of middle and higher technical institutes when their grades do not meet the grades needed for enrollment into university education. Chances for industrial, agricultural and commercial secondary school graduates to join university education also exist, provided they score a grade of 75%, and pass an entry general exam set for each of the three streams of secondary education. Although the chances of this category of graduates for getting into university is limited, the flexibility of the system allows equal opportunities to all students graduating from secondary education to be admitted into university if they wish to do so, after passing the entry exam. In the current academic year 2000/2001, only 326 students were able to meet enrollment criteria into university education.

Literacy Rate Versus Enrollment

In 1992 the President of Egypt declared that education as a whole is the prime goal to meet the challenges of maintaining strong economic growth and sustainable development, and of building strong communities and a cohesive society. Extensive efforts have been made by the government to improve the literacy rates and the education sector as a whole. Table (1) shows the improvement in adult's literacy rates by gender during the period 1986 – 1999. It is clear from the figures included in the table that the total literacy rate increased from nearly 50% in 1986 to more than 65% in 1999, giving an average annual improvement of more than 1%, which reflects on the increase in enrolment.

Table (1): Adult Literacy rates by gender (1986 - 1999)

Year	Literacy rates among males	Literacy rates among females	Total percentage of Literacy
1986	62.2	38.2	50.6
1990	64.5	44.8	52.9
1996	71.0	49.8	61.4
1999	76.0	55.0	65.8

Source: CAPMAS, September 2000

Population Growth Versus Enrollment

Population and enrollment by gender are given in Table (2) to reflect access to education, participation and progression to higher education during the period 1998 – 1999. Classification is made by the same age groups of the education levels included in the layout of the overall education structure in Egypt¹, Fig. (3). Percentage gross enrollment ratios to population are also included in the table to reflect the proportion of each age group enrolled in the corresponding education level. It is clear from the figures that nearly all the population is enrolled into education in the age group of compulsory education². About 62% of the population belonging to the age group 12 – 14 years is admitted to secondary education.

In higher education, however, the total population belonging to the age group 18-22 is nearly 6.9 million students and the total enrollment of undergraduate and postgraduate students in public and private universities, including higher education institutions, is nearly 1.29 million students giving a percentage enrollment ratio to population of about 19%. If part-time students are

¹ The majority of students within the age group 18 - 22 join the university in 4 and 5-year programs. Only medical students, however, are enrolled in the 6-year programs.

² Percentage gross enrollment ratios to population vary in total between 98% and 107% in the compulsory education age group. The lower percentage (less than 100%) indicates that not all the population of the age group is enrolled into compulsory education, whereas, the higher percentage shows that population from higher or lower age groups are enrolled with the regular age group.

included (about quarter of a million), the total number of students becomes nearly 1.53 millions giving a ratio of approximately 22%. It is evident that the higher education enrollment rate in Egypt is comparable to those of OECD countries [1]. Ambitious plans of the government are targeting an enrollment rate between 25 to 30% during the coming decade. To reach this figure, however, extensive amounts of funding need to be raised in order not to deteriorate further the level of education, which directly reflects on the quality of graduates.

Table (2): Population and Enrollments by Gender (1998/1999), reflecting Access to Education, Participation and Progression to Higher Education.

Age Groups by Gender	Population			Enrollment			% gross enrollment ratios to population		
	1999	1999	1999	1998/99	1998/99	1998/99			
	Males	Females	Total	Males	Females	Total	Males	Females	Total
6	665413	631814	1297227	688282	633378	1321660	103%	100%	102%
7	684970	646878	1331848	745503	664931	1410434	109%	103%	106%
8	758924	714604	1473528	765750	672543	1438293	101%	94%	98%
9	773595	725852	1499447	833677	715152	1548829	108%	99%	103%
10	786990	736382	1523372	885679	746223	1631902	113%	101%	107%
11	799376	746613	1545989	838215	732272	1570487	105%	98%	102%
Age 6-11	4469268	4202143	8671411	4757106	4164499	8921605	106%	99%	103%
12	810338	756122	1566460	695703	618042	1313745	86%	82%	84%
13	818756	763596	1582352	681356	587036	1268392	83%	77%	80%
14	822846	766924	1589770	174383	174809	349192	21%	23%	22%
Age 12-14	2451940	2286642	4738582	1551442	1379887	2931329	63%	60%	62%
15	820587	763676	1584263	175983	167785	343768	21%	22%	22%
16	810699	752353	1563052	137618	138130	275748	17%	18%	18%
17	794179	734261	1528440						
Age 15-17	2425465	2250290	4675755						
				Tertiary Enrollments(not available by single year age group)					
18	775534	714797	1490331						
19	754276	693659	1447935						
20	725598	665458	1391056						
21	688391	629072	1317463						
22	645447	587693	1233140						
Age 18-22	3589246	3290679	6879925			1286107			19%

Source: Ministry of Higher Education Supreme Council of Universities and CAPMAS September 2000.

Patterns of Student Enrollment Growth

Since 1990, the Government has increased its pre-university education budget by 150% in real terms. This has helped to bring about nearly universal access at the basic level and an enrollment rate of 62% at the secondary level. Combined with an expanding age group, this success has created strong demand for post secondary education. As mentioned earlier, a total of

approximately 22% of the 18-22 students age group (about 1.53 million students, of which about 40% are female) were enrolled at that level in 998/99. Three quarters attended universities, and one quarter were enrolled in non-university institutions. The overwhelming majority (about 99% of all students) attended public institutions. A note worth mentioning here is that the number of female students enrolled in Egyptian universities/institutes have been continuously increasing as the literacy rate among females increased (on average from about 30% to 40% over the last 20 years), Table (1).

University Enrollment [2, 3]

The system is comprised of 12 public universities (spread over 20 individual campus sites), and only 5 private universities (four for-profit, and one non-profit, the American University in Cairo)³. The MOHE is setting-up the regulatory measures and criteria to establish private universities and is continually refining them based on the experience gained from the already established ones. Table (3) includes a list of all the Egyptian public and private universities indicating their year of establishment, location and the number of faculties/ institutions classified into two categories, Science and Technology (S&T) and Humanities and Social Sciences (H&SS). Al-Azhar University, our Islamic university, is included separately in the table as it is not under the administration of the Ministry of Higher Education.

The numbers of undergraduates, postgraduates, staff and their assistants, and the budgets of Egyptian public universities during the period 1988/1989 through 1999/2000 [2], are given in Table (4). The table shows the progress of undergraduate students admitted and enrolled into, and graduated from the system over the past 12 years. Students enrolled in, and graduated from the different levels of postgraduate studies (Diploma, M.A., M.Sc. and Ph.D.), together with the total number of academic staff and their assistants are all included in the table over the same period of time. Breakdown of the total annual budgets of public universities included in Table (4) is given in Table (5), classified by university for the fiscal years 1988/1989 through 1999/2000. The percentage budget increase in 1991/1992 (35%) was the highest increase during the last 12 years, and the lowest annual increase in 1997/1998 (4%), was followed by a steady annual increase of about 10%.

³ Many applications are pending with the Ministry of Higher Education to open additional private for-profit universities/institutions (French, British and German universities are among the pending requests).

Table (3): Public and Private Universities in Egypt (2000/2001)

Public University System					
University	Year Established	City/Town	No. of Faculties/Institutes		
			S&T	H&SS	Total
Cairo	1908	Cairo	22	21	43
Alexandria	1942	Alexandria	13	14	27
Ain Shams	1950	Cairo	8	9	17
Assiut	1954	Assiut	9	9	18
Tanta	1972	Tanta	10	11	21
El-Mansoura	1972	El-Mansoura	10	11	21
El-Zagazig	1974	El-Zagazig	15	15	30
Helwan	1975	Helwan	6	12	18
El-Menia	1976	El-Menia	8	10	18
El-Menoufia	1976	El-Menoufia	7	9	16
Suez Canal	1976	Suez Canal	12	10	22
South Valley	1994	South Valley	7	10	17
Total			127	141	268
Al Azhar University					
Al Azhar	1961	Cairo	9	13	22
Private University System					
American University in Cairo(AUC)	1919	Cairo	2	2	4
Six October	1996	Six October City	7	4	11
Misr for Science and Arts	1996	Six October City	2	1	3
October for Science and Technology	1996	Six October City	6	2	8
Misr International	1996	Cairo Ismailia Road	2	2	4
Total			25	13	38

S&T: Science and Technology

H&SS: Humanities and Social Sciences

Source: Supreme Council of Universities September 2000.

Table (4): Number of Undergraduates, Postgraduates, Staff and their Assistants, and Budgets of Egyptian Public Universities During the Period 1988/1989 - 1999/2000 (1 US\$ ≈ 3.4 L.E.).

Academic Year	Under-Graduate Studies			Post-Graduate Studies								Staff & Assistants		Budget in Million L.E.
	Admitted	Enrolled	Grad.97/98	Enrolled				Graduated 1997/1998				Staff	Assistants	
				Diploma	MA&MSc	PhD	Total	Diploma	MA&MSc	PhD	Total			
1988/1989	75375	484206	90452	44495	30255	10846	85596	9539	5158	2108	16805	17385	15764	889
1989/1990	66990	467611	94300	42570	29367	10532	82469	10636	5859	2054	18549	18426	15830	1078
1990/1991	69949	443120	94211	37397	30353	11258	79008	10632	4471	2185	17288	19783	15679	1212
1991/1992	74310	431863	92488	40706	34408	11718	86832	11899	4495	2128	18522	20876	15733	1638
1992/1993	110333	471358	88542	46892	39105	13354	99351	12745	4741	2176	19662	22297	15650	1968
1993/1994	131007	519536	81320	46836	40030	13942	100808	14118	5053	2324	21495	23546	15294	2179
1994/1995	148378	597964	85609	42753	40946	15293	98992	13923	5342	2597	21862	24660	15928	2458
1995/1996	237873	755606	103963	41534	42191	15491	99216	13937	5388	2508	21833	26230	15683	2939
1996/1997	268967	926325	118309	44151	42759	15703	102613	15513	5329	2455	23297	27560	15857	3482
1997/1998	240904	1043765	139631	46444	42894	16820	106158	17050	5154	2744	24948	28351	16285	3616
1998/1999	221530	1167891	216226	49781	49919	18551	118251	16280	5240	2600	24120	29717	18060	3985
1999/2000				53215	45400	18493	117108					30467	18768	4397

Source: Supreme Council of Universities(SCU), September 2000.

Table (5): Expenditures by Public University for Fiscal Years 1988/1989 - 1999/2000
in Million L.E. (1 US\$ \approx 3.4 L.E.).

University	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000
Cairo	161	259	233	445	465	585	643	724	840	893	944	1130
Alexandria	104	115	154	180	232	253	269	325	344	390	460	482
Ain Shams	142	159	162	212	263	286	337	384	465	522	566	604
Assiut	73	95	98	158	191	197	159	206	256	244	311	278
Tanta	62	68	78	86	118	126	141	164	206	213	276	259
El-Mansoura	84	80	134	133	149	159	196	274	326	317	292	408
El-Zagazig	103	115	130	164	199	214	244	290	337	330	352	391
Helwan	55	60	71	83	99	100	128	165	199	157	190	221
El-Menia	32	39	41	48	70	70	84	108	123	134	133	168
El-Menoufia	44	46	60	58	87	100	101	110	152	149	163	167
Suez Canal	29	42	51	72	95	89	107	110	132	138	164	158
South Valley	-	-	-	-	-	-	49	79	102	129	134	131
Total Budget	889	1078	1212	1639	1968	2179	2458	2939	3482	3616	3985	4397
% Budget Increase	-	21%	12%	35%	20%	11%	13%	20%	18%	4%	10%	10%

The total number of students newly admitted, enrolled and graduated from Egyptian public universities (1998/1999) is give by gender in Table (6). The total number of faculties and institutes in each university is also included in the table to reflect the comparative size of each university. The ratio of newly admitted male students to female ones is nearly 2:1, whereas, this ratio is nearly 1:1 for enrolled and graduated students. It is interesting to note that the highest number of newly admitted students is in Al-Azhar university, which is comparable in size of enrolled students to Cairo University, the largest and oldest university in Egypt, Table (6).

Table (7) includes the latest number of colleges and institutes in Egyptian universities classified in accordance with the specializations of the 18 Sectors under the Supreme Council of Universities (SCU). A total of 268 colleges and institutes exist.

Complementary to the regular students enrolled into public universities, the number of part-time students registered in universities during the academic years 1994/1995 through 1999/2000 is given in Table (8). Well over quarter of a million part-time students are currently registered in public universities, adding further burden to the higher education system. Examining the percentage increase of this category of students shown in Table (8), a 55% increase is noted in the academic year 1995/1996, and this percentage increase kept reducing until it became constant at 13% during the last two years. This trend reflects the government's intentions to control the expansion in this category of education.

Table (6): Total Number of Students Newly Admitted, Enrolled and Graduated from Egyptian Public Universities (1998/1999).

University	No. of Faculties & Institutes	Newly Admitted		Enrolled		Graduated 97/1998	
		Total	Females	Total	Females	Total	Females
Cairo	43	32999	14586	185158	81864	23861	10334
Alexandria	27	23205	11162	126675	60880	14578	7488
Ain Shams	17	26236	14640	154708	86255	20476	11387
Assiut	18	14600	5227	62776	22474	6129	2091
Tanta	21	19303	8918	102924	47599	13705	6260
El-Mansoura	21	20842	10067	103689	50055	12996	6664
El-Zagazig	30	26693	11264	145219	61346	17253	7718
Helwan	18	17687	8331	97221	45781	8215	4000
El-Menia	16	7982	3089	36149	14001	4461	1670
El-Menoufia	18	12011	4973	59893	24816	6480	2887
Suez Canal	22	8233	3957	39935	19036	4522	2419
South Valley	17	11739	5447	53544	24819	6955	2877
Total	268	221530	101661	1167891	538926	139631	65795

Source: Supreme Council of Universities(SCU), November 1999.

Al-Azhar	22	39754	11690	182378	53642	18939	5694
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Source: Ministry of Higher Education October 1999.

American University in Cairo(AUC)	4	694	385	3624	1856		
6 October	11	1845	560	2405	1080		
Misr for Science and Arts	8	985	260	1245	579		
October for Science and Technology	3	195	91	286	187		
Misr International	4	107	55	162	171		
Total	30	3826	1351	7722	3873		

Source: Supreme Council of Universities(SCU), November 1999.

Table (7): Number of Colleges and University Institutes by Sector (2000/2001)

No.	Sector	Number of Colleges	Number of Institutes	Total
1	Engineering	19	1	20
2	Medicine, Physio Therapy, Nursing	26	5	31
3	Agriculture	17	1	51
4	Veterinary	11	-	11
5	Pharmacy	11	-	11
6	Basic Science	18	1	22
7	Dentistry	7	-	7
8	Genetic Engineering& Bio-Technology	1	-	1
9	Statistical Sciences	1	-	8
10	Music	1	-	1
11	Artistic Studies	6	-	6
12	Physical Education	17	-	7
13	Education	28	2	30
14	Political Science	1	-	1
15	Law	11	-	11
16	Arts, Humanities, & Social Sciences	37	22	59
17	Commerce & Business Administration	18	-	18
18	Computer Science & Informatics	6	-	6
	Total	236	32	268

Source: Supreme Council of Universities September 2000

Table (8): Numbers of Part-Time Students adjunct to Public Universities
in Years 1994/1995 - 1999/2000

University	1994/1995	1995/1996	1996/1997	1997/1998	1998/1999	1999/2000
Cairo	14167	20307	28206	36142	42748	48151
Alexandria	9769	15269	21170	25189	26261	28251
Ain Shams	12782	19302	26720	36819	43365	48213
Assiut	4411	6678	9484	11202	11881	12946
Tanta	6934	10218	13059	16666	19831	24273
El-Mansoura	7983	13220	15756	17157	18615	20963
El-Zagazig	11027	17218	23133	27820	30373	31951
Helwan	3399	7258	10787	14224	18000	18581
El-Menia	2196	3425	4254	5293	5636	6224
El-Menoufia	4599	7052	9174	10438	11296	12968
Suez Canal	1942	3371	4574	5397	6025	7239
South Valley	4855	7119	8443	9428	10470	11116
Total	84064	130437	174760	215775	244501	270876
% Increase	-	55%	34%	23%	13%	13%

Source: Supreme Council of Universities(SCU), November 1999.

Faculty Enrollment and their Assistants [2]

The total number of staff members and their assistants, the number of non-academic staff, and the number of resident students on campus in each of the public and private universities, including Al-Azhar university, as well as the academies and institutes in the year 1998/1999 is included in Table (9). The number of regular students and the ratio of number of students per staff are also included to give an overall picture within the table.

Postgraduate Enrollment [2]

The number of students enrolled in, and graduated from postgraduate studies in Egyptian public universities, including Al-Azhar and the academies/institutions are all included in Table (10). Private universities, with the exception of the American University in Cairo (AUC), did not yet start their postgraduate studies, as many of them did not even graduate their first batch of undergraduate students. The AUC does not offer Ph.D. programs, but it has a very successful and well-established department for public services (DPS) that offers many courses of continuing education and training to the Egyptian community at large. In addition, the AUC, as well as the majority of public universities, offer regular for-degree and for non-degree programs at the postgraduate level.

Table (9): Total Number of Staff Members & Assistants, No. of Regular Students, Non-Academic Staff, Resident Students on Campus and the Ratio of Regular Undergraduate Students to Staff Members in Public and Private Universities, and Academies/Institutes in the Year 1998/1999.

University	Staff Members				Assistants			General		Regular Students	Non Academic Staff	Resident Students on Campus	No. of Students per Staff Member
	Professor	Ass. Prof.	Lecturer	Total	Ass. Lect.	Demon.	Total	Total	Females				
Cairo	2320	1502	2438	6260	2074	1630	3704	9964	3513	139185	11407	14374	22:1
Alexandria	1679	976	1381	4036	875	779	1654	5690	2246	97240	8522	8023	24:1
Ain Shams	1327	1026	1997	4350	1362	1083	2445	6795	3030	109007	7084	8413	25:1
Assiut	648	374	532	1555	556	468	1024	2579	686	50574	3740	12651	33:1
Tanta	498	430	873	1801	778	572	1350	3151	993	81993	3159	6885	46:1
El-Mansoura	674	507	795	1976	714	585	1299	3275	883	84207	4851	5479	43:1
El-Zagazig	1018	927	1859	3804	1092	532	1624	5428	1333	101175	6854	7378	27:1
Helwan	470	386	928	1784	806	828	1634	3418	1441	79221	3124	7314	44:1
El-Menia	238	279	538	1055	496	150	646	1701	348	30147	2324	6729	29:1
El-Menoufia	313	287	617	1217	483	372	855	2072	523	47817	3853	5881	39:1
Suez Canal	278	255	657	1190	615	505	1120	2310	589	33474	3284	6299	28:1
South Valley	78	161	450	689	343	362	705	1394	279	42838	1640	12448	62:1
Total	9541	7110	13065	29717	10194	7866	18060	47777	15864	896878	62846	101874	30:1

Source: Supreme Council of Universities(SCU), November 1999.

Al-Azhar	1520	1576	2038	5134	1081	1574	2655	7789		182378			
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Source: Ministry of Higher Education(MOHE), October 1999.

American University in Cairo(AUC)	71	60	78	209				209		3624			
Six October	19	6	16	41	18	53	134	175		3600			
Misr for Science and arts	12	2	4	18	10	35	69	87		2013			
October for Science and Technology	4	3	3	10	13	15	44	54		463			
Misr International	2	4	6	12	2	2	26	38		331			
TOTAL	108	75	107	290	43	105	273	563		10031			

Source: Supreme Council of Universities(SCU), November 1999.

Arts Academy	75	55	79	209	82	132	214	423					
Sadat Academy	20	17	46	83	37	49	86	169					
Arab Academy for Science& Tech.	74	39	50	163	31	77	108	271					
Total	169	111	175	455	150	258	408	863					

Source: Ministry of Higher Education(MOHE), October 1999.

Non-University Enrollment [3]

The non-university stream of education absorbs a significant portion of the student population enrolled in tertiary education. There are 51 public non-university institutions, of which 47 are two-year Middle Technical Institutes (MTI), and 4 are four or five-year higher technical institutes (HTI). Table (11) shows the students admitted, enrolled and graduated from both technical and commercial MTIs given by gender during the period 1987/1988 through 1998/1999. There were approximately 111,500 MTI students in 1998/99, Table (12), mostly enrolled in the commercial field (48,200), Table (12a), or industrial disciplines (48,100), Table (12b). The rest are enrolled in MTIs providing training in hotel and tourism services (2,200), Table (12c), and faculties of education (13,000). There has been a steady increase in enrollment prior to 1996/97 and a slight decrease since 1997/98.

Table (10): Total Number of Students in Post Graduate Studies
in Egyptian Public Universities

University	Enrolled 1998/1999					Graduated 1997/1998				
	Diploma	MA&MSc	PhD	Total	Females	Diploma	MA&MSc	PhD	Total	Females
Cairo	7160	10403	4985	22548	8028	2149	1310	796	4255	1681
Alexandria	5486	7015	1645	14146	5562	1910	579	245	2734	1295
Ain Shams	14761	8686	2872	26319	9805	3704	964	565	5233	2366
Assiut	1878	1866	812	4556	1317	544	174	72	790	266
Tanta	5234	2441	838	8513	3108	1959	290	106	2355	985
El-Mansoura	2878	2741	1041	6660	2305	1268	314	134	1716	740
El-Zagazig	4732	6058	2943	13733	4341	2170	599	314	3083	1381
Helwan	1559	3129	1027	5715	2374	840	304	136	1280	557
El-Menia	750	2212	634	3596	1112	444	184	84	712	264
El-Menoufia	1461	2071	848	4380	1639	697	184	130	1011	472
Suez Canal	2231	2428	589	5248	2085	728	165	104	997	464
South Valley	1651	869	317	2837	888	637	87	58	782	289
Total	49781	49919	18551	118251	42564	17050	5154	2744	24948	10760

Source: Supreme Council of Universities(SCU), November 1999.

Al-Azhar	6128	2407	2149	10684		330	451	356		1137
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Source: Ministry of Higher Education(MOHE), October 1999.

American University in Cairo(AUC)	286	668	-	954					174	
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Source: Supreme Council of Universities(SCU), November 1999.

Arts Academy	181	93	45	319		63	20	11	94	
Sadat Academy	904	89	10	1003		312	29	10	351	
Arab Academy for Science& Technology	23	361	11	395		30	20	0	50	
Islamic Studies Institute	0	1904	0	1904		0	0	0	0	
Tabbin Institute for Metallurgical Studies	30	7	0	37		8	2	0	10	
National Planning Institute	1	4	1	6		0	0	0	0	
Total	1139	2458	67	3664		413	71	21	505	

Source: Ministry of Higher Education(MOHE), October 1999.

Table (11): Graduates from Technical and Commercial MTIs
(1987/1988 - 1998/1999).

Year	Graduates from Technical MTI			Graduates from Commercial MTIs		
	Males	Females	Total	Males	Females	Total
1987/88	10,292	1,839	12,131	--	--	--
1988/89	10,524	2,404	12,928	19,750	10,289	30039
1989/90	10,696	3,059	13,755	12,664	9,567	22231
1990/91	10,276	2,925	13,201	12,577	9,036	21613
1991/92	11,927	3,394	15,321	13,049	10,466	23515
1992/93	12,090	4,598	16,688	15,156	14,541	29697
1993/94	8,054	3,390	11,444	8,170	9,758	17928
1994/95	7,352	3,954	11,306	6,687	9,934	16621
1995/96	5,585	4,573	10,158	4,314	7,850	12164
1996/97	14,903	12,152	27,055	10,141	20,079	10,141
1997/98	29,887	20,526	50,413	34,044	44,987	79,031
1998/99	11,151	8,375	19,526	6,889	12,312	19,201

Source: Ministry of Higher Education(MOHE), October 1999.

Table (12): Newly Admitted, Total Enrolled and Graduates in Non-University
Higher Institutes, 1988/89 - 1998/99.

Table (15a): Newly Admitted, Total Enrolled and Graduates in Commercial Institutes, 1988/89 - 1998/99

Year	Newly Admitted			Enrollment			Graduates		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
88/89	18047	12355	30402	40098	28051	68149	19750	10289	30039
89/90	16117	11696	27813	37598	26109	63707	12664	9567	22231
90/91	11274	18625	29899	39414	24991	64405	12577	9036	21613
91/92	20578	16812	37390	42514	30874	73388	13049	10466	23515
1988/1989	10303	10397	20700	34829	29701	64530	15156	14541	29697
1989/1990	8852	11261	20113	23600	24608	48208	8170	9758	17928
1990/1991	6352	9357	15709	18890	21895	40785	6687	9934	16621
1991/1992	14854	28385	43239	23618	39304	62922	4314	7850	12164
96/97	10336	13591	23927	27485	40491	67976	10141	20079	30220
97/98	10034	13569	23603	24010	31418	55428	0	0	0
98/99	7801	10262	18063	21584	26523	48107	6889	12312	19201

Table (15b): Newly Admitted, Total Enrolled and Graduates in Industrial Technical Institutes, 1988/89 - 1998/99

Year	Newly Admitted			Enrollment			Graduates		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
88/89	13128	3866	16816	29922	6980	36902	10292	1839	12131
89/90	14506	3802	18308	30972	7930	38902	10524	2404	12928
90/91	16939	5392	22331	33282	9393	42675	10696	3059	13755
91/92	18177	7496	25673	36306	12678	48984	10276	2925	13201
92/93	8883	3737	12620	27826	11100	38926	11927	3394	15321
93/94	9061	4704	13765	21858	9401	31259	12090	44598	16688
94/95	8152	5757	13909	18973	10859	29832	8054	3390	11444
95/96	23960	17129	41089	32805	23686	56491	7325	3954	11279
96/97	11982	7843	19825	35383	24063	59446	5585	4573	10158
97/98	11744	9964	21708	29887	20526	50413	14903	12152	27055
98/99	12471	8824	21295	28344	19865	48209	11151	8375	19526

Table (15c): Newly Admitted, Total Enrolled and Graduates in Hotel Institutes, 1988/89 - 1998/99

Year	Newly Admitted			Enrollment			Graduates		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
88/89	111	22	123	255	54	309	117	26	143
89/90	229	67	296	430	114	544	151	38	189
90/91	240	83	323	500	157	657	224	74	298
91/92	612	135	747	1149	248	1397	371	104	475
92/93	519	118	637	1126	258	1384	519	111	630
93/94	542	162	704	1197	298	1495	568	113	681
94/95	505	193	698	1059	354	1413	422	121	543
95/96	1432	604	2036	2019	780	2799	393	159	552
96/97	664	174	838	2125	634	2756	902	364	1266
97/98	887	224	1111	1913	481	2394	0	0	0
98/99	730	189	919	1801	426	2227	759	207	960

Government Education Expenditures

As stated in the constitution, the government is responsible for offering Egyptian population free education at all levels. Table (13) gives a summary of government annual expenditures by level of education during the period 1990/1991 through 1998/1999. Expenditures are classified into three groups, namely; primary and preparatory, higher education, and other types of education

expenditures grouped together. Primary and secondary education expenditure is divided among MOE expenditures, governorates education cost and Islamic schools following Al-Azhar⁴. Higher education expenditures, on the other hand, sub-divided into MOHE expenditures, non-university, university and Al-Azhar university are given separately as well. The total government education budget in 1998/1999 was more than triple the 1990/1991 budget.

Table (13): Government Education Expenditures by Level in Million L.E. (1 US\$ \approx 3.4 L.E.)

Education Level	1990/91 Actual	1991/92 Actual	1992/93 Actual	1993/94 Actual	1994/95 Actual	1995/96 Actual	1996/97 Actual	1997/98 Actual	1998/99 Budget	%
Education Expenditures by Level										
Primary and Secondary	2,813	3,363	4,499	4,823	5,720	6,920	8,068	8,225	9,540	64
<i>Central Ministry (MOE)</i>	348	438	825	792	882	1,098	1,249	1,462	1,459	10
<i>Governorates</i>	2,260	2,643	3,326	3,584	4,234	5,067	5,923	5,687	7,097	48
<i>Islamic Schools (Al Azhar)</i>	204	282	348	447	605	755	896	1,076	984	7
Higher Education	1,707	2,128	2,485	2,789	3,352	3,774	4,550	5,020	4,223	28
<i>Central Ministry (MOHE)</i>	127	239	222	261	328	427	542	440	375	3
<i>Non-University Institutions</i>								982	691	5
<i>Universities exc. Al Azhar</i>	1,438	1,714	2,069	2,275	2,751	3,032	3,581	3,066	2,632	18
<i>Al Azhar University</i>	142	175	194	253	273	315	427	532	525	4
Other	262	96	157	1,256	1,830	2,245	2,462	1,775	1,176	8
Total Education Expenditures	4,782	5,587	7,141	8,868	10,902	12,939	15,080	15,020	14,939	100

Source: Ministry of Finance(MOF), Ministry of Education(MOE) and Ministry of Higher Education(MOHE), 1999.

HIGHER EDUCATION SECTOR MAIN ISSUES: A CRITICAL REVIEW

Strengths and Weaknesses of Higher Education in Egypt

Strengths in the Egyptian higher education system are identified as the strong human resources made up mainly of university professors, the large variety of educational and research disciplines, and the existence of some institutions with very long experience in higher education. Weaknesses, however, fall mainly into two main categories, the very high loading of staff with direct consequence on the average quality of graduates⁵, and the low system efficiency. Limited financial resources, over-crowding, inadequate infrastructure, under-trained faculty members in some areas, poor instructional materials and equipment, and lack of modern education technology manifest the low quality of graduates. Low system efficiency, however, is manifested by lack of sustainable financial policy, weak accountability within the academia and lack of a formal assessment and accreditation mechanism. Accordingly, the Egyptian higher

⁴ Expenditures are given separately because their budget is not part of MOE budget.

⁵ In the academic year 1974/75, 4 assistants/staff existed on the average. In 1987/88, however, the ratio was approximately 1 assistant/staff, whereas in 1998/99, about 0.6 assistants/staff were available. A considerable drop in the assistants to staff ratio is noted over the past 15 years (almost 7 times at an average annual drop of about 0.45%).

education faces a number of challenges, namely in: (I) system-wide governance and management; (II) quality and relevance at the university level; (III) quality and relevance at the middle technical level; and (IV) fiscal sustainability of publicly financed enrollments. Each of these challenges will be briefly discussed [4].

I. System-wide Governance and Management

The governance and management framework suffers from four fundamental deficiencies: (1) complex and antiquated legislation and institutional organization; (2) inefficient resource allocation mechanisms and funding patterns; (3) absence of quality assurance mechanisms; and (4) inadequate strategic planning and management, both at the system-wide and the institutional levels. Elaboration on each of these deficiencies is given in the following.

1. Legislative and institutional framework

The present legislative framework is not up to the challenges faced by a modern higher education system, for it does not allow for diversification in the provision of or finance for higher education. This reality makes it very difficult for private institutions to operate in Egypt. In addition, the Egyptian constitution stipulates, "Education in all the country's educational institutions is free in all its different stages".

A further hot reform issue is the lack of full autonomy of individual institutions. For example, the administrative/teaching staff ratio is high by international standards (4:3), Table (9), and as a result, the share of public spending devoted to actual teaching is low. University officials cannot readily remedy this, however, as personnel management is constrained by regulations similar to those in the civil service; salaries are not linked to performance and once an appointment is made, termination is very difficult. In addition, there is no retirement age, leading to a relatively skewed distribution, an inverted pyramid of senior faculty members with fewer junior teaching staff to meet the teaching, tutoring and continuous contact needs of the majority of students. Nearly all full-time faculty members are permanent from their first appointment.

Administrative arrangements as stipulated in the legislation need to be reconsidered. The governance of the sector involves two separate frameworks and is ruled by two separate sets of

legislation - one for the university sector and one for the non-university sector. The university sector has a governance advisory body known as the Supreme Council of Universities (SCU), chaired by the Minister of Higher Education, and in theory, independent of the Ministry. A similar but far less autonomous body exists for the Higher Technical Institutes (HTI) in the non-university sector (NUS), with the same chairmanship. Intermediate NUS institutions such as Middle Technical Institutes (MTI) have no such body and are governed directly by the Ministry of Higher Education (MOHE). All major decisions concerning admission levels and standards, definition of programs and curricula, creating new academic positions for the recruitment and appointment of faculty, allocation of resources, establishment of academic standards and the assessment of those standards, are made by the MOHE and through the SCU.

2. Resource allocation mechanisms and funding patterns

There are rigidities and inefficiencies at the system-wide level, and at the institutional level. First, *at the national system-wide level*, the mechanism for determining the educational needs and public resources to fulfill those needs is inadequate. Education programs are determined by the SCU, recurrent financial resources by the Ministry of Finance (MOF), and investment resources by the Ministry of Planning (MOP) -- all need a stronger planning and coordinating link. In the absence of a funding formula, budgets of universities are determined by MOP and MOF based on individual discussions and needs assessment of each university. MOHE has a minor role in this budgeting process. Furthermore, there are no effective policymaking advisory bodies to inform the Government on resource allocation, or to coordinate with institutions to assist the decision-makers in planning system development. The SCU and the MOHE have no technical secretariat to carry out policy analysis or advisory functions, to guide system development, or to periodically monitor program quality and performance of graduates.

Second, *at the institutional level*, the resource allocation process is outdated and needs restructuring. Financial resources are limited to, mainly government funds, students enrollment fees, funds obtained from centers of excellence established in some institutions for offering community services and/or research and consultation jobs, and funds obtained from joint research activities. Institutions have very limited authority over internal reallocation of resources among budget categories, student intakes, faculty hiring and firing, or academic offerings. Within universities, inadequate budgeting practices provide few incentives for efficiency or

quality improvements, and the present governance structures do not motivate senior managers to make the best use of resources. The presidents, vice presidents, deans and heads of departments⁶ have very limited scope to manage budgets in an innovative way. These budgets are allocated in a line item format, with very limited scope for transfer between budget categories except, in most universities, by the authority of the President himself on even minor matters. Uncertainty over the amount of Government allocations or the size of the student intake at the beginning of the year prevents rational institutional budgeting.

3. Quality assurance mechanisms

Measurement of outcomes is lacking, both for individual faculty members and at the program or institutional level. There is no mechanism in place to evaluate teaching, either for formative or for summative purposes. There are insufficient criteria for assessing performance, particularly teaching. Chairs and deans are not empowered to take any meaningful action following an evidence of poor performance of their staff.

With respect to quality assurance in general, except for some individual and isolated initiatives, there is limited expertise for developing strong standards for performance, and no generally available data that could readily be used as indicators of educational quality. Most academic departments exhibit a lack of focus on evaluation of student problems or their reactions to their learning experiences. And when specific instances of creative, responsive program innovation emerge, they receive little institutional support.

4. Strategic planning and management

During the last 30 years, several institutional attempts were made by successive ministries of higher education to develop strategic plans, non of which was implemented satisfactorily because of limited funding, cultures of management and strategic planning. Nor have the governing bodies of the higher education sector (MOHE, SCU, ...) nor the universities developed modern management information systems (MIS) to assist them in strategic planning and resource allocation. Although they gather many statistics, they make little use of them. Most statistics are

⁶ Heads of departments in public universities have very limited financial resources and do not have any regular budget to manage.

collected and transformed manually, with the exception of some limited individual initiatives to computerize and automate the process⁷.

II. Quality and Relevance at the University Level

An alarming figure in undergraduate university statistics is the number of repeaters that encumber the system year after year⁸. This suggests that neither the existing student selection criteria nor the process of allocating them to programs is very robust. Another contributing factor may also be the absence of a credit system, and the fact that failure in some courses may require repeating them in a full year, and, in some faculties, repeating all the courses.

Clearly, not every student is gifted with the abilities needed to succeed at the university level and the selection process needs to be able to sort students on the basis of characteristics that are stronger predictors of success. These could, for instance, be foundation knowledge, competency in study skills, writing ability, intellectual ability, motivation, and English language proficiency especially in programs where some courses are taught in English such as medicine and engineering. Private tutoring is a service that few academic staff members (in some faculties) offer to university students and for which they are remunerated accordingly⁹. The extent to which this service is in demand suggests that either the students find themselves insufficiently prepared for their courses or that they find the instruction they receive in their courses inadequate. Another reason is the high dependence of students on private lessons during secondary education, a continuing habit they get used to, and a contagious disease to higher education.

1. Educational Input

Low quality and relevance can be attributed to deficiencies in educational inputs and in educational processes. Weaknesses in educational inputs can be classified in two groups related to, (a) infrastructure and (b) academic staff.

⁷ Cairo, El-Mansoura and Assiut Universities have already established IT centers and started to build their own modern MIS systems.

⁸ As an example, success rate of engineering students at Suez Canal University in the first year is 60-65%, and of those who complete year one, 80% graduate on time.

⁹ A medical student can reportedly spend as much as 6,000 L.E. for private tutoring.

a. Infrastructure. The size of the system poses special challenges in making substantial investments in infrastructure, its operation, continuous rehabilitation and periodical maintenance. Also, the combination of inadequate libraries and ineffective integration of IT in the educational process contributes directly to low quality in higher education. More specifically:

i. The lack of an overall technology plan: At the system and the university level, the currently employed short-term funding model, and the lack of an articulated acquisition and replacement plan, has led to an inconsistent and unproductive approach to IT implementation. The lack of a governance structure is clearly tied to the lack of a technology plan; the two processes must go hand-in-hand to achieve desirable and measurable results.

ii. Information technology (IT) and the Internet: Within individual universities there is a shortage of modern information technology (IT) for teaching, libraries and research. At the national level, the 12 universities are connected to the Egyptian University Network (EUN), with the Supreme Council of Universities (SCU) acting as the hub, or focal point of the Network. The SCU in-turn is connected to the Internet, and acts as the Internet Service Provider (ISP) for the universities. However, there is currently no content (research material, library catalog, learning media, etc.) available through the EUN.

iii. Libraries: Low rates of stock replacement and a high proportion of outdated content contributed to the currently low levels use of libraries, and the weak management means that their improvement is less likely to be made a financial priority. Existing network structures for access to Egyptian and international research databases are fragile and/or unaffordable, as are systems for the supply of primary documentation identified through secondary 'bibliographic' databases. Access to the Internet is either direct for faculty and researchers, or with the help of library intermediaries, is extremely patchy. Perhaps related to this, is the still pervasive tendency toward administrative and physical fragmentation of library facilities, rather than operation according to economies of scale. University libraries have separate identities without sharing resources, and are often maintained separately at faculty and/or departmental levels. Egypt's

twelve public universities have over 200 libraries with often poorly maintained buildings and equipment¹⁰.

b. Academic staff. Academic staff are adversely affected by (i) selection and recruitment practices, (ii) academic qualifications and competencies, and (iii) remuneration and other incentives.

i. Selection and recruitment practices: The main source of hiring academic staff in the current system is the pool of graduating students at the bachelor's level. This is a problem for four main reasons. First, hiring appears to be more an incentive to encourage and support strong students rather than a meaningful exercise for meeting program needs or advancing strategic development plans. Second, there is no injection of "new blood" into the system and hence no variation in the models of teaching and research that students might be exposed to if they obtained their degree elsewhere. Third, as it draws from a very limited pool of candidates, it limits the possibilities of identifying and hiring the most qualified individuals. Fourth, it assumes that high academic standing at the undergraduate level will be a reliable predictor of a solid performance as a researcher and teacher.

ii. Academic qualifications and competencies: Those who are graduate students themselves and have neither the experience, nor the expertise, to serve as role models for the undergraduate student body, carry out teaching. Since 1975, Egypt has had a 3-4 weeks limited program of pedagogical training in place for new faculty members. Participation in this program is mandatory for anyone seeking promotion from Lecturer to Assistant Professor. The main deficiency of the program is the lack of its continuity to maintain the development of teaching skills of faculty members, and its limit to the development of pedagogical competencies of faculty members only at the outset of their career, with no obligation and/or commitment to develop their own teaching skills.

¹⁰ A library automated system linking all the 18 faculties of engineering existing in the 12 public universities was established under the World Bank financed project for the development of Engineering and Technical Education in Egypt (ETEP). Further expansion of the library network is still needed.

iii. Remuneration and other incentives: Salaries of academic staff are very low. Across the ranks, the salary scale consists of a base (same for all within a rank) plus additional increments, the amounts of which vary depending on the number of years of experience and on extra tasks which staff undertake. Senior administrative staff (deans and chairs) gets a negligible monetary compensation for taking on administrative positions. By law, all faculty members are allowed to hold other jobs. Junior staff (below Assistant Professor) is allowed to tutor but not work as consultants until they are in the third year of their hire. Staff takes advantage of this situation and seeks other part-time employment opportunities in order to augment their income. Having two and sometimes three jobs contributes to widespread absence, particularly in the professional programs. Faculty members appear to have very limited access to public funds to support their scholarship. Research funding from the Academy of Scientific Research, even on a competitive basis, is reportedly extremely limited as is financial assistance that would help staff establish links with international scholarly communities. With the exception of one or two-year scientific mission programs, there are no paid sabbatical leaves and a systematic incentive process to encourage professional revival is absent. Faculty members, however, are entitled during the course of their academic career for a total of up-to ten years of unpaid leave (on-loan) from their universities/institutes to other local or foreign universities or even industrial enterprises.

2. Educational Process

Educational process issues can be grouped in 8 categories, namely: (a) teaching methods, (b) workload/teaching loads, (c) working conditions, (d) staff promotion, performance assessment and accountability, (e) academic staff responsibilities, (f) use of modern educational technology, (g) research and development, and (h) students activities. A brief account of each category follows:

a. Teaching methods. It is very difficult to use different innovative teaching strategies other than the well established traditional lecturing style because of (i) the large number of students that a lecturer has to deal with, (ii) the limited acquaintance and support of many of the top level administrators to the new teaching technologies, and their reluctance towards accepting these strategies as more appropriate for learning, (iii) the limited financial resources available to

acquire these teaching aids and (iv) the limited space and facilities available to accomplish the intended changes.

b. Workload/teaching loads. The normal workload allocation (8 hours per week for Full Professors, 10 for Associate Professors and 12 for Lecturers) is particularly problematic in the case of individuals who teach basic courses to all departments within a faculty. This leaves little time for preparation for teaching. If Lecturers (who comprise nearly 44% of the academic staff holding a Ph.D. degree) teach only their allocated 12 hours a week¹¹ and take the same amount of time for preparation, this would account for roughly two thirds of their week. Since a growing number of academic staff do take on additional jobs outside the university for one or two days a week to improve their income to meet the demands of life, it can be assumed that at least 44% of faculty either spend little time on course preparation or on their other academic duties.

c. Working conditions. The working environment for the academic staff in the majority of faculties does not appear to be conducive to either innovative teaching or to carrying out research. Office spaces are not adequately utilized nor properly prepared, and as a rule, universities do not provide academic staff with computers or teaching facilities. Also, the limited availability of qualified laboratory technicians is another source of major concern to faculty, particularly in disciplines, which depend on laboratory equipment for teaching and research.

d. Staff promotion, performance assessment and accountability. The majority of academic staff are hired into permanent (tenured) positions on the merit of their undergraduate academic standing, without particular consideration for actual competency or even potential ability in teaching or in conducting research. There are only two formal promotion exercises carried out during the entire career of an academic. There are no mechanisms such as merit pay to differentiate individuals and to reward superior performance on an annual or semi-annual basis. Promotion occurs in five-year intervals between each rank (from Lecturer to Assistant Professor and from Assistant Professor to Full Professor). It is carried out through education

¹¹ Under the current system, a new rule was issued few years ago stating that staff members are obligated to carry up to 2.5 times their normal loading. Very limited remuneration is given to all staff members on a monthly basis (a fixed amount based on rank); irrespective of the overload, as long as it is within the abovementioned ratio.

sector committees appointed by the SCU with representation from most senior staff (Full Professors who have been in the rank for at least 5 years) and involves an external (within Egypt) peer review process. There are neither regular student course ratings nor other mechanisms such as peer evaluations or teaching portfolios in place that would provide a measure for the quality of teaching. Neither are there any internally or externally applied measures of accountability such as annual reporting by staff for the work they do. It is true that academic staff members are poorly paid and are not entitled to many incentives, by the same token, they are not accountable for their time or productivity, as long as they are present in their assigned lectures/classes.

e. Academic staff responsibilities. In addition to the heavy teaching load, academic staff, particularly the senior ones (full professors) are over burdened by diverse responsibilities other than teaching. The SCU appoints around 120 promotion committees and each consists of at least three members who are full professors. This is only one of many committee structures that draws its membership from senior academic staff and in so doing, makes them even more burdened, and consequently less available to be actively and fully involved in undergraduate teaching and research. Moreover, participation in these committees places a heavy demand on the time of senior staff, which they might otherwise dedicate to advancing their scholarship.

f. Use of modern educational technology. In the teaching process, there are no notable examples in which modern educational technology has been directly integrated into the course curriculum, and used in a manner that would promote enhancement and extension of the course material beyond the lecture hall (few exceptions exist). Lack of resources prevents meeting the needs of better equipment, access to networks and the Internet, professional development, expert assistance, and incentives. Students complain that universities are not offering them the opportunity to employ modern technology to further their learning and critical thinking skills. Most students also complain from the lack of sufficient computing resources, the limited access to the Internet, and the limited opportunity to learn new computing skills. Many of these same students, however, indicate that they feel it is essential for them to have these skills if they are to be prepared to effectively compete on the job market.

g. Research and Development. The general environment in the majority of universities does not reflect positively on research productivity and innovation of staff members. University

research and development activities are highly dependent on individual faculty members, sum of which produce and publish research work of high international standard. The main incentive for the majority of faculty members to initiate and publish research, however, is to fulfill the requirements for promotion rather than to produce quality and innovative research. Inadequate equipment and testing facilities, limited funds allocated for research by the university, absence of remuneration for conducting the research, and the deficiency in the relationship between industrial enterprises and universities to support research, are among the factors affecting the quality and quantity of research produced by Egyptian universities. Quality research work cited internationally from Egyptian universities is relatively low, and is not proportional to the large number of faculty members enrolled in Egyptian universities, which are considered to be the main strength of the Egyptian higher education system.

h. Students activities. The higher education system in Egypt provides legal channels for students to perform their diverse activities through Student Unions. These student bodies are selected in each college through annual elections. College and/or university administration ensure that the election process is secure, and that candidates are not convicted in any way, and have no history of extreme political or religious tendencies. Students have the freedom to practice any activities within university/college campuses. Activities related to political parties are not encouraged within the premises, however, political culture and debates related to current and ongoing hot issues are welcomed and encouraged by the administration. Peaceful riots have been repeatedly practiced within university/college campuses with no objection from university/college administration. However, riots have been resisted and discouraged by the administration outside the premises because of the possibility for violent and destructive actions, either by students themselves or by other external intruders.

Another important student body established by the government is the Center for Leadership Preparation of students. The objective of the center is to prepare potential students for future leadership of the country. During mid-term and summer vacations, batches of students join this center every year for 1-2 weeks. Political debates with ministers and/or government officials, cultural meetings with eminent personalities in diverse fields, social and sportive competitions are among the activities practiced in the center.

III. Quality and Relevance at Middle Technical Level

The most dramatic example of mismatch between training and labor markets occurs in the case of Middle Technical Institutes (MTI), which enroll too small a share of all students given the needs of a modern economy (less than 10%). The graduates of the MTIs have the worst employment rate in the non-university sector (over 60% remain unemployed for at least two years). Because the quality of education provided in these MTIs is miserable, a "vicious circle" results in which (1) an insufficient number of mid-level cadres is produced, (2) cadres produced are of insufficient quality for employment at their level, and (3) the jobs for which they were supposedly prepared are taken by graduates from higher level schools (Higher Technical Institutes or Engineering Schools) at a much higher unit cost to the State.

The causes of this unfortunate state of affairs may be attributed to the following: (a) lack of relevant mission and of critical mass, (b) inadequate governance framework, (c) economically irrelevant academic programs, (d) poorly trained teaching staff working under difficult conditions, (e) outdated facilities and equipment, and (f) articulation policies for student transfer or progression to universities. Following is a brief account on each cause:

a. Lack of relevant mission and of critical mass. The Middle Technical Institutes (MTIs) have evolved over the past 50 years and are still fulfilling the same old missions, and the strategy and philosophy did not have significant changes since then. MTIs suffered from inadequate rehabilitation of infrastructure, maintenance of equipment and facilities, and materials that have become outdated. Training of the teaching staff has been neglected over the years, and they have become unqualified for the requirements of a modern economy. Many of the 47 MTIs are small (50% have less than 2000 students, 25% have less than 1000 students) and they suffer from a serious image problem in their community.

b. Governance framework. The MOHE has total central control over the management of MTIs. Even the purchase of simple equipment or basic maintenance expenditures needs to be authorized by the Ministry. Furthermore, employers have no say in the mission definition of the MTIs, or in the teaching that takes place.

c. Economically irrelevant academic programs. The academic programs in the MTIs should reflect the labor market needs for mid-level personnel in the manufacturing and service sectors of the economy. While the titles of many of the programs appear relevant to those needs (computer systems, information technology, production technology, mechatronics, ... etc.), the reality is very different. The poor quality of curricula, courseware and learning materials, the inadequacy of laboratory equipment, lack of parts and materials, and the low educational attainment of teachers, contribute to the overall poor quality of education in these institutions. Because of the poor quality of education in the technical secondary schools, in tandem with the MTIs, the preparation of technicians and mid-level personnel requires serious rationalization and reform to make the system more relevant to the needs of the economy. The MTIs and HTIs lack even limited autonomy in developing programs based on market needs.

d. Poorly trained teaching staff working under difficult conditions. Many of the MTI instructors have no work experience outside of the institute, and they receive no or little in-service training during their teaching years. They are considered employees of the MOHE and are even more poorly paid than university professors, though they have a heavier teaching load. Moreover, MTI faculty members work under difficult conditions, including poor quality infrastructure and teaching facilities. There is no apparent system of accountability.

e. Outdated facilities and equipment. Many of the MTI facilities are decaying (some have had to close due to safety considerations), and the majority of their equipment have become obsolete. Major rehabilitation and renovation is needed.

f. Articulation policies for student transfer or progression to universities. Currently, there is no way for MTI students to transfer to universities, though there are some very limited pathways for these students to gain access to Higher Technical Institutes. The barriers to university transfer are understandable, given the generally low admissions standards to MTIs and the low quality of training that students receive. Nevertheless, the lack of a rational policy for transfer could become problematic as the quality of MTIs improves. A National Qualifications Framework (NQF) needs to be established to resolve this issue.

IV. Fiscally Sustainable Enrollments

The Government funds Egyptian public education at all levels. By OECD standards, education in Egypt receives a similar percentage allocation of available public resources (5.9% of Egyptian GDP in 1997/98, equal to the OECD average), a commensurate proportion of which is allocated to higher education (28% of total public expenditures on education in Egypt were allocated to higher education in 1997/98). Overall expenditure on education as a proportion of GDP has grown from 3.9% in 1991 to 5.9% in 1998. In spite of the expansion of public spending on education in Egypt (in both absolute terms and as a proportion of GDP), the growth in the higher education student population has caused a compression of per-student resources at that level.

During the period of rapid growth in the 1990s, the real resources per student in higher education provided by the government dropped in constant 1999 pounds from L.E. 6,600 in 1992/93 to an estimated L.E. 4,000 in 1998/99, an average of 8% per year, Table (4). This reduction in resources has had a major impact on the quality of instruction and facilities. To raise higher education per-student expenditures to the 1993 levels (requiring a 5% annual increase in per-student expenditures through 2008/2009) in a climate of rising enrollments, a major reallocation of resources in favor of higher education would need to occur. Although the President and the Government have emphasized the importance of higher education to Egypt's development, such efforts would be fiscally and politically difficult to undertake if public funds continued to be the sole source of finance. Currently, the Egyptian Constitution stipulates the provision of "free education" at all levels, making it difficult to charge tuition¹².

In addition to compressing resources, the mere size of the Egyptian higher education system poses special challenges to the provision of quality education. Egypt has one of the world's largest higher education systems. In 1998/99, some 1.28 million students were enrolled, and over 47,700 faculty members were in employment, Tables (2) & (9). It is projected from data of previous years that the number of students will increase at an annual rate of at least 4% [4]. Although the Egyptian population growth rates have slowed considerably in the last decade, the population cohorts entering higher education and the labor force grew rapidly and will continue to do so, reflecting high birth rates from past years. Thus, enrollment in higher education grew

¹² For long-term reform planning, change of the constitution cannot be ruled out to allow for financial contribution (at least partial) by students in support for their higher education.

at the high annual rate of 17% during the period 1992/93 to 1998/1999, Table (4). Under conservative assumptions that take into account the changes in secondary education under the Secondary Education Reform Program (SERP), rapid but not quite as rapid growth in enrollment as in the last decade is expected to continue, roughly at 5-6% per annum over the period to 2009 [5]. The Government's dilemma can also be summarized as follows: given the high population growth, to simply maintain the share of the 18-22 age group at its present 19% level would require on average an additional 60,000 new enrollments each year over the next ten years, Table (2). It is therefore evidently clear that increasing the share to at least the 25% level over the next 10 years (a government ambitious reform target), will considerably add new enrollments each year, requiring major investments that are beyond the capacity of the government alone.

REFORM ACTIONS

Now that current situation have been critically reviewed and the higher education sector main issues have been identified, a review the *previous reform initiatives* and the *government strategy* towards the current and future reform actions is essential to complete the picture. It is a fact that fierce competition and rapid pace of progress are the main features of the new global community. To stand a chance in this competitive environment, conventional reform methods must evolve, since they can no longer cope with the current rapid rate of progress. A totally different “leap approach” has to be sought, to enhance prospects of developing countries like Egypt to narrow the gap with developed countries. Currently, with the progress made in communications and information technologies, it is a golden opportunity for developing countries to implement the proposed leap approach. Egypt has already committed itself to the global village by signing binding international agreements that already started to take effect.

PREVIOUS REFORM INITIATIVES:

The Engineering and Technical Education Project (ETEP)

The Government of Egypt through the Ministry of Higher Education and its Projects Implementation Unit has implemented a World Bank financed project for the development of Engineering and Technical Education over a period of seven years (1992 –1998). The funding of the project was 30.5 million US\$ from the World Bank complemented by the equivalent of 14 million US\$ in local currency supported by the government. The project’s goal was to improve and strengthen the Engineering and Technical Education in Egypt. To respond to this challenge,

the stated objectives of the project were: (I) to improve the quality and occupational relevance of engineering education in Egyptian universities; and; (II) to improve the quality of secondary and post secondary technical education in Egypt by supporting the development of a new, more effective type of technical education institutions, which would meet the growing demand for better prepared, and qualified technical teachers. Two project components were established to implement the reform program under the ETEP. A brief account of the achievements of each project component follows [6]:

1. The Engineering Education Development Program Component (EEDP)

Over a period exceeding six years, many activities were implemented: (a) 159 projects/proposals were commissioned on a competitive basis to establish laboratories, new programs, train staff/technicians, ... etc. Peer evaluation committees reported a 97% success rate on implemented projects; (b) over 15% of the engineering staff members were involved in the developmental activities of EEDP; (c) model curricula were developed for six basic and engineering sciences courses and were disseminated among all the eighteen faculties of Engineering; (d) links between academia and industry were supported; (e) pilot modern instructional tools (in electronic format) were developed; (f) institutional self-evaluation and quality assurance mechanisms (pilot implemented in three faculties) were introduced as a first step towards the establishment of an accreditation mechanism; (g) a comprehensive engineering education database accessible to all engineering faculties was established; and (h) library automation and Internet/Intranet connectivity, linking the eighteen faculties of engineering was established.

2. The Technical Teacher Education Development Program Component (TTEDP)

Concurrently, and over the same period of implementation of EEDP, many activities were also established under the TTEDP component: (a) two Industrial Education Colleges (IECs) were established to produce integrated teacher (theory-com-practice) graduates capable of teaching theoretical and practical subjects in an integrated manner; (b) teacher training & development centers were established in both IECs; (c) infrastructure was refurbished & developed, and 76 laboratories and workshops were equipped in both IECs; (d) 180 courses were developed in 10 specializations employing over 65 local experts from universities, technical institutes and industry, complemented by International assessment through the British Council; (e) the core

staff members were trained in Holland and England (31 students were granted the Masters degree and 7 students were sent through the Missions Department of the MOHE to complete their Ph.D. degrees); (f) in-service training programs for teachers were implemented; (g) Internet labs and library automation were initiated in both IECs; and (h) multi-media based courseware and up-to-date instructional materials (some in electronic format) were provided for both IECs.

GOVERNMENT REFORM STRATEGY

After the successful completion of the ETEP project, recent government actions toward building political consensus on issues critical to the higher education reform in Egypt have created a climate that is ripe for movement to take place on concrete reform efforts. The Government has come to realize that the growing globalization of trade, finance and information flow is intensifying competition and is raising the danger that Egypt will continue to fall behind its competitors. Implications of the information revolution and knowledge economy need to be made part of the development agenda. Encouraged by the success of a rising enrollment in primary education (to almost 100%), and the on-going enhancement of learning and adaptability skills through reforms in secondary education, the Government is advancing to make the best of these on-going efforts by improving the quality of education and opportunities for lifelong learning at the higher level, in harmony with worldwide directives [7].

The challenge of arresting the declining quality of higher education was met with the new Minister of Higher Education nominating in 1997 a national HEEP Commission, which consists of prominent members from the academic community as well as industrialists and members of the Parliament. The Commission of 25 members formed six subcommittees having over 50 other members from different disciplines and experiences such as representatives from public and private universities, higher education institutes and training centers, the industrial and business sectors, and other experienced stakeholders concerned with higher education. Each committee had a specific topic to address and held monthly meetings as well as public hearings involving major stakeholders to build national consensus for the reform program, which is meant to provide answers for the critical issues identified in the critical review section.

In the preparation phase for the development of the reform program, several events took place. Study tours to Scotland and France in January 1998 [8], and to Australia and New Zealand in April/May 1999) [9], were arranged by the World Bank for some members of the national HEEP committee (the author of this manuscript took part in both study tours). The study tour members received valuable first-hand information on higher education reform experiences in the countries visited and reported on the findings, lessons learned, and proposed recommendations for the anticipated Egyptian higher education reform [8] & [9]. The main reason for visiting the selected countries is that they have all been recently involved in the implementation of their reform plans [10] and [11], and it was timely visits for the Egyptian delegations to learn from recent reform experiences. Although there are various cultural and educational differences between some of the countries visited and Egypt, reform initiatives and implementation experiences remain universally similar.

Another important activity that took place in June 1999 involved the organization of an international Symposium in collaboration with the World Bank. The event was prepared with the objective of learning about the main worldwide trends and important issues in higher education development from a select group of internationally known reformers in such areas as: quality, diversification, economics and financing alternatives. For this reason, five higher education specialists of broad international experience were invited by the World Bank to address the symposium on major issues that influence higher education reforms. Exchanging views and ideas between national and international experts regarding the formulation of a general policy and a strategic framework for higher education reforms proved to be very valuable and fruitful for developing Egypt's reform plans. The proceedings of the Symposium were published in two volumes [12], and contain all the valuable papers and speeches presented by the international consultants and the national top-level administrators and academics.

The National HEEP committee members in their course of preparing for the reform framework, focused on higher education issues, and have reviewed and taken into consideration many valuable ideas included in three of the World Bank reports directed towards reform of higher education in the 21st century [13], quality assurance in higher education [14] and the financing and management of higher education [15].

The outcome of this reform preparation process was a National Conference, held in Cairo on February 13 and 14, 2000, with over 1200 stakeholders of higher education participating and coming to consensus on a declaration recommending legislative, financial and structural reform of higher education. The Prime Minister and the President endorsed the Declaration. Press reviews and public reactions to the Declaration have propelled the reform initiative into almost a "movement" with the public calling on the Government to act on the Declaration. Some negative reactions among staff members on certain issues were outspoken on the newspaper media. The political conditions have clearly set the stage for Egypt to begin engaging in meaningful and necessary higher education reforms. Proceedings of the conference contained comprehensive information on all the studies, reports, and proposals developed over the past two years to address the various reform issues under consideration [16].

The Declaration's reform agenda is ambitious. The Government is deliberately deciding to address all the issues above and has started work on their sequencing and logical articulation. Annex (1) contains a summary of recommendations of the National HEEP conference declaration reflecting the comprehensiveness of the ambitious reform program. Among the key areas highlighted for reform:

1. Development of a unified framework for higher education (including new legislation), establishment of a new Supreme Council of Higher Education, asserting the principle of institutional autonomy, establishment of a National Quality Assurance Committee with specific guidelines for periodic evaluation, establishing a funding formula with block grants, and establishing a higher education "master plan" at the national level, including the reform of admission policies.
2. Changes (reforms plus investments) aimed at improving educational inputs (IT, libraries, hiring of teaching staff, improving teaching methods), and criteria for the development of new academic programs and curricula (e.g. responsiveness for society's needs, attainment of standards, community orientation).

3. Development of Middle and Higher Technical Institutes - the former through a clustering of the existing institutes into regional Polytechnics affiliated with one of the regional universities and associated with the regional industry as well.

Other areas targeted for Government intervention include the establishment of a National Qualifications Framework (NQF), centers of excellence and multimedia centers, the Egyptian Open University, and the advancement of graduate studies and research. The development of a NQF would add to the robustness and flexibility of the system, and is one of the mandates and essential recommendations of the National HEEP conference. NQF is also included as one of the proposed reform projects suggested for implementation, dedicated to develop this framework. Seamless transfer from one stream of education into the other is the main feature of the NQF, provided that the academic level set for the other stream is attained through a common degree or exam. Annex (2) contains a list of all the 25 projects endorsed for implementation by the National HEEP Conference. The list contains the intended impact of each project on five main issues; access, quality, efficiency, relevance, and governance and finance, as well as the main entities concerned with the implementation of each project.

Institutional Capacity Assessment

In planning for the implementation of new projects/programs, it is essential to carry out an institutional capacity assessment study to analyze the status of the implementing bodies in order to ensure that they have the required capacity measures for the successful implementation of the project. The institutional capacity analysis focuses on issues such as organizational settings, leadership and management, financial, material and human resources, as well as on other key work practices. Identifying capacity gaps and proposing alternatives is the main purpose of this exercise. An institutional capacity study was carried out to assess the government agencies/institutions that will be involved in the implementation of the 25 projects endorsed by the National HEEP Conference. The report containing the study incorporates responses to all of the above activities [17].

Higher Education Enhancement Program (HEEP)

The Conference Declaration is comprehensive, and the reform program it outlines is ambitious and requires extensive and diversified financial support. The Egyptian government has expressed interest to the World Bank to continue its support to the education sector at large, thus extending its support to primary and secondary education to include tertiary education as well. The World Bank has over the past decade been supporting the Egyptian government in its attempts to reform the education sector at large. The primary and secondary education programs are currently being implemented with World Bank and European Union support [5], and the Engineering and Technical Education Project (ETEP) has been successfully implemented during the last decade [6].

In the World Bank endeavor to support the Egyptian government in the implementation of its current reform initiative, most -- though not all -- of the Conference recommendations, will be supported by the proposed HEEP project. This strategic choice results from both the objective urgency of alleviating many of the problems faced by the system, the fact that many of them are interrelated, and the Government's and the national HEEP Committee's strong desire to implement a comprehensive reform program. Furthermore, this broad convergence of views provides the umbrella under which an overall reform program can be financed by the Government, the Bank, and other donors to act as a catalyst to the overall reform process (the European Commission (EC) and USAID have already expressed an interest in supporting reforms in the MTI and teacher training sub-sectors, respectively).

Specifically, the HEEP program will directly address the first three of the four major issues described above: (1) antiquated system-wide governance and management framework; (2) low quality and relevance in the university sector; and (3) low quality and relevance in the MTI sector. The fourth issue, the fiscal sustainability of publicly financed enrollments, is an ongoing issue that will be the subject of further discussions and continuing dialogue. It is essential, however, that the Government decides on what its enrollment targets would be, or how it would finance them. Strategically, the government leadership has declared in so many occasions, over the media and the press, that the intention is to provide all secondary school graduates with higher education opportunities. It is expected that improved access will result from (a) an

increase in selected public sector capacity coming from more efficient use of existing capacity, e.g. in MTIs; (b) distant education; and (c) an increase in private sector capacity.

CONCLUDING REMARKS

Egypt, having one of the largest education systems in the world, has already started implementing its major reform plans for the education sector at large. The success or failure of the reform process in general, and the Higher Education Enhancement Program (HEEP) in particular, will greatly depend on how the government agencies, institutions, faculty members and students will operate under the proposed reform plans. A fundamental change in the operation process and attitude towards change is mandatory to create the appropriate environment for development. The reform of higher education is an on going process that does not materialize by issuing laws, orders, or by enforcing recommendations, but it can only be sustained and implemented successfully if all stakeholders involved are committed to the anticipated change. Everyone has a fundamental role to play that is crucial in supporting higher education reform and Egypt's plans for development [18].

The main areas of reform identified under Egypt's Higher Education Enhancement Program (HEEP) include: administrative restructuring and management development, use of information technology to establish MIS and new teaching methodologies as well as setting-up a multimedia national center, establishment of a comprehensive faculty development program, development of faculties of education, development of Higher and Middle Technical Institutes, setting up library automation and centers of excellence, enhancement of graduate studies and research, establishment of quality assurance and accreditation mechanisms, establishment of a National Qualifications Framework (NQF), and encouragement of "Distant" and "Life Long" learning.

The abovementioned areas of reform were intentionally classified into twenty five distinct projects ready for implementation. Short, medium and long-term project implementation plans were developed to address all issues related to the higher education process, and to enable continuous monitoring, assessment and evaluation of each project. Many of the proposed reform projects require minimal or no extra funding by individual institutions to achieve their reform objectives. In the newly emerging global world, it is mandatory in Egypt's reform programs to meet international standards and practices related to higher education, and to face the main future challenges of overcrowding and improving the quality of graduates.

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ANNEX (1)

SUMMARY OF RECOMMENDATIONS FOR EGYPT'S LONG-TERM REFORM PROGRAM (National HEEP Conference, February 13-14, 2000)

I: Development of a Unified Framework for Higher Education

1. New Legislation for Higher Education.
2. Establishment of the new Supreme Council for Higher Education (SCHE).
3. Establishment of Committees of SCHE for each relevant sector of higher education.
4. Asserting the principle of institutional autonomy.
5. Development of new principles for the Faculties of Education.
6. Establishment of National Quality Assurance Commission (NQAC).
7. Establishment of National Qualifications Framework (NQF).

II: New Directions for Higher Education Development

1. Use of Multimedia and Distance Education.
2. Establishment of the Egyptian Open University.

III: Framework for the Establishment of New Institutions

1. Establishment of a three phase process for accreditation of new institutions:
 - a. Initial accreditation;
 - b. Authorization; and
 - c. Endorsement.
2. Development of a process of ongoing periodic evaluation of all new institutions.
3. Development of a Master Plan for higher education expansion.

IV: Student Admission to Higher Education

1. Admission based on a plan approved by SCHE.
2. Adoption of a demand driven admission process.
3. Admission based on geographic realities and needs.
4. Diversifying the criteria for admission.

V: Development of Academic Programs and Curricula

1. Adoption of guiding principles for program review.
 - a. Responsiveness to societal needs.
 - b. Attainment of relevant competencies.
 - c. Focus on norms and values.
 - d. Community orientation.
2. Definition of educational standards.
3. Programs' requirements.
4. Institutional.
5. Faculty/College.
6. Departmental.
7. Personal.
8. Commitment of faculty members to follow approved curricula.
9. Freedom of choice of courses for students.
10. Academic autonomy of academic faculties/departments.
11. Gradual adoption of credit hours.
12. Introduction of students' counseling.

VI: Improvement of Teaching and Learning Methods

1. Relevant training of students in the industrial and service sectors in their programs of study.
2. Use of experts industry and enterprises for teaching and discipline-specific applied areas.
3. Strengthen student capacity for using libraries and information databases for research and reports.

VII. Student Evaluations and Examinations

1. Adoption of contemporary methods of student assessment including continuous evaluation.
2. Elimination of joint examination commissions and final examinations.

VIII. Books, References, and Course Notes

1. Control of unauthorized translation of foreign textbooks by professors, and enforcement of IPR laws through government agencies.
2. Adoption of recommended reading lists and avoiding the use of a single professor authored course notes.

3. Increasing the capacity of the libraries by increasing holdings its holdings of books on recommended reading lists.

IX. Faculty Selection

1. Appointment of honor students as research students, within prescribed quotas.
2. Appointment of honor students with MS degrees in the position of Assistant Professor.
3. Appointments to faculty positions would be through a competitive advertised process, and all who are qualified are eligible to apply.

X. Developing and Assessing Faculty

1. Establishment of national center for development and upgrading for teaching faculty skills, including:
 - a. Method of selection and preparation of teaching staff.
 - b. Method of promotion of faculty including assessment of teaching, research, output, and community service.
 - c. Adoption of self-assessment methods.
 - d. Commitment to institutionally based working hours.
 - e. Participation in on-going workshops and training.
 - f. Opportunity for faculty to keep abreast of new development in foreign universities.
 - g. Intensive training workshops in contemporary scientific and research methodologies.
2. Establishment of the position of Distinguished Professor to recognize professors with exceptional scientific research output.
3. Development of a code of ethics for professors and teaching staff in institutions of higher education, which addresses the issue of private tutoring.
4. Adoption of new terms of reference for the roles, responsibilities, and remuneration of faculty members and teaching staff to assure for adequate compensation for services and their commitment to their responsibilities as full time employees of their institutions.

XI. Development of Middle Technical Institutes (MTI) and Higher Education Institutes (HEI)

1. Clustering of MTI's into geographically distributed technological colleges with academic oversight provided by a university in the same region. The colleges would seek employers in the public and private sectors to provide workplace related skills development opportunities for its students.
2. Develop a comprehensive plan for the establishment of higher institutes in response to societal needs, which complements the role of the universities.

3. Upgrading of the facilities, physical resources, and equipment in the MTI's to support the educational training of graduates with relevant knowledge and skills.
4. Develop a communication strategy to change perceptions of the public towards middle and higher technical institute graduates.
5. Develop a National Qualifications Framework (NQF), a system of equivalencies that facilitates two-way student mobility between universities and MTIs/HEIs as well recognizing the diplomas of the latter, and allow the transfer of credits to the universities.

XII. Enhancement of Graduate Studies and Research

1. Adopt an accreditation system for graduate studies.
2. Establish a Faculty of Graduate Studies in each university with dedicated and qualified faculty members.
3. Limit the offering of masters and doctoral degrees to faculties that have appropriate human, scientific, and technical resources, defined in the accreditation framework.
4. Graduate programs of the applied nature should be subject to the availability of faculty with the applied experience in the offered disciplines, and the provision of using specialized external practitioners when needed.
5. Encourage faculties to develop joint inter-disciplinary programs in such areas as management of technology, public health, and environmental studies.
6. Develop a framework for admission of graduate students that includes assessments of the performance in their fields of study, their language skills, and proficiency in their use of computers, using prevailing international standards.
7. Redefine tuition fees for graduate studies to reflect actual costs, and allocate resources to award scholarships to high-achievement students.
8. Support and develop a framework for graduate studies and scientific research, which is linked to the needs of economic development with a focus on environmental studies, applied research, and emerging disciplines such as genetics engineering and lasers.
9. Expand the establishment and support to centers of excellence of scientific research in institutions of higher education and link it to partner institutions at the national and regional level.
10. Develop international exchanges and cooperation agreements with foreign universities and establish programs to obtain support from Egyptian scientists abroad.

XIII. Financing of Higher Education

1. Commitment to diversification of sources of funding for institutions of higher education.
2. Expansion of the student loan system for needy students.

3. Expansion of scholarships for honor students to be financed through additional and alternative sources, including contribution of industrialists and endowments.
4. Confirmation of the government commitment to finance 75% of the actual costs of all institutions of higher education on the basis of student enrollment to be provided as a block fund to the institutions. Affirmation of the freedom of the institutional councils to allocate the resources according to their internal policies.
5. Commitment from universities and other institutes of higher education to generate revenue through the provision of scientific and technical assistance, consulting services, and educational training programs to users and external community.
6. Universities and institutions of higher education have the freedom to use the additional revenue for development purposes such as academic development, faculty and staff upgrading, refurbishing of facilities, and procurement of equipment.
7. Universities and institutions of higher education are subject to monitoring by the central accounting organization.
8. The new legislation will confirm that universities and institutions of higher education have a degree of autonomy different from other public organizations, and give them the right to carry-over budget surpluses into the following fiscal year.

XIV. Governance and Management

1. The structure of higher education institutions will be adapted to the nature and the environment of the institution, and the creation of new organizational units to address the institutional needs such:
 - a. Communications and IT Centers.
 - b. Multimedia and educational technology centers.
 - c. Centers for the development of administrative and academic human resources.
2. Prepare a timetable for automation of administrative processes and development of the information and communication networks, and increase the use of electronic mail among institutions of higher education.

XV. Guiding Principles for Implementation of Recommendations

1. The conference affirms the need to develop a time frame to implement the recommendations as follows: Short-term projects, academic years 2001/2002; mid-term projects years 2001/2005; and long-term projects years 2001/2017.
2. The permanent National Commission for Higher Education will continue to be the executing agency for the HEEP.
3. The National Commission, headed by the Minister of HE will assign an implementation team dedicated to manage and implement the plans and projects emerging from the recommendations of the Conference. The team will be a link between the new proposed SCHE and all institutions of higher

education in the country and will undertake the planning, coordination, and follow-up for the proposed programs.

4. Commitment to a time frame for implementation, and articulation of well defined implementation phases, including fixed start and end dates.
5. A national conference for higher education will be convened once every two years to follow-up on implementation.

capture (2)

Table (1): Proposed HEEP Projects Endorsed by the National Conference

Ser. No.	PROJECT NAME	Intended Impact					Involved Entities
		Access	Quality	Efficiency	Relevance	Gov. & Finance	
1	New Higher Education Legislation	➤	➤	➤	➤	➤	GOE – MOHE – SCU – WB
2	Develop New Map for University and Higher Education	➤			➤		GOE – MOHE – SCU – PIU
3	Develop Faculties of Education and Teacher Training		➤	➤	➤		MOHE – SCU – PIU
4	Establish Learning Technologies and Multimedia National Center		➤	➤	➤		MOHE – SCU – PIU – WB
5	Enhance Study Programs and Curricula		➤		➤		SCU – UNIV – HEI
6	Develop New Admission Mechanisms to Tertiary Education	➤			➤		GOE – MOHE – SCU
7	Setup Library and Learning Resources		➤	➤			SCU – PIU – UNIV – HEI – WB
8	Develop Higher and Middle Technical Institutes		➤	➤	➤		MOHE – PIU – HEI – MTI – WB
9	Promote Open and Distant Learning	➤			➤	➤	GOE – MOHE – SCU – UNIV
10	Develop Information Technology and Networking		➤	➤	➤	➤	SCU – PIU – UNIV – HEI – WB
11	Restructure Scientific Departments.		➤	➤			MOHE – SCU – UNIV – HEI
12	Promote Faculty Development.		➤	➤		➤	SCU – UNIV – HEI – WB
13	Develop Graduate Studies.		➤	➤	➤		SCU – UNIV – HEI
14	Develop Scientific Research, Systems, and Mechanisms.		➤	➤	➤	➤	MOHE – SCU – UNIV – HEI
15	Modernize MIS for University Administration & Management			➤		➤	MOHE – SCU – PIU – UNIV – HEI – WB
16	Setup National Center for Developing Tertiary Education, Administration and Management			➤		➤	MOHE – SCU – PIU – WB
17	Promote Linkages with Business and Industry				➤	➤	MOHE – SCU – UNIV – HEI
18	Establish Alumni Center for Higher Education Institutions	➤			➤	➤	SCU – UNIV – HEI
19	Promote International Cooperation		➤		➤	➤	GOE – MOHE – SCU – UNIV – HEI
20	Enhance Cultural, Ethical and Sportive Activities			➤	➤		SCU – UNIV – HEI
21	Develop Programs for Gifted and Talented Education		➤	➤	➤	➤	MOHE – SCU – UNIV – HEI
22	Establish Centers of Excellence in Higher Education	➤	➤	➤	➤		MOHE – SCU – PIU – UNIV – HEI – WB
23	Development and Diversification of Funding Resources		➤	➤	➤	➤	GOE – MOHE – SCU – PIU – WB
24	Establish National Quality Assurance and Accreditation Agency		➤	➤	➤		GOE – MOHE – SCU – WB
25	Establish National Qualifications Framework.		➤	➤	➤		GOE – MOHE – SCU – PIU

GOE: Government of Egypt

MOHE: Ministry of Higher Education

SCU: Supreme Council of Universities

PIU: Projects Implementation Unit

UNIV: Universities

HEI: Higher Education Institutions

MTI: Middle Technical Institutes

WB: World Bank Organization

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