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3. DIFFERENTIATED POSTSECONDARY SYSTEMS AND THE ROLE OF THE UNIVERSITY: THE CASE OF EGYPT

INTRODUCTION

The focus of this essay is to demonstrate and analyze how Egypt responds strategically to massification issues in the context of the global knowledge economy and increasing national and international competition in the organization of its academic system. The analysis of the postsecondary system considers its size and structure, the diversity and core missions of different institutional types, degrees of institutional autonomy and academic freedom, mechanisms to expand equitable access and quality assurance, and finally, strategic and policy decisions and initiatives to address these realities.

HISTORICAL DEVELOPMENT OF THE POSTSECONDARY SYSTEM

Modern Egyptian education began during the time of Mohamed Ali (1798-1801 AC) when he established schools for engineering, medicine, and law. At that time, distinguished graduates were sent to Western Europe to pursue further higher education. Upon their return, these internationally educated graduates helped to advance the education system in Egypt. In 1908 a national university was established in Egypt. In 1953, following the 1952 revolution, it was renamed Cairo University, and the number of universities has continually increased since that time.

Several political decisions were made on the national level that have had detrimental effects on the education system as a whole. In 1959, higher education was fundamentally transformed when a constitutional amendment established education as the right of all Egyptians, offered free at all levels. The result has been the expansion of the public system, from four universities in the 1950s to 23 in 2016, with plans to continue expansion due to the increasing number of eligible candidates within the age cohort. As a result, the number of students enrolled in undergraduate education (university, higher education institutions, technical institutes, as well as new forms of delivery) increased from nearly 0.3 million students at the beginning of the 1960s to

P. G. Altbach et al. (Eds.), Responding to Massification, 29–38.

over 2.6 million by 2016, a nearly nine-fold increase in participation over more than six decades without a corresponding increase in the educational infrastructure, thus presenting challenges for quality.

Public demand for higher education increased significantly in 1963 when the Egyptian government launched a scheme that guaranteed a job in the public sector to all university graduates. This decision committed the government to employ all graduates, irrespective of the need for personnel or suitable job opportunities. The overstaffing of the public sector led to the deterioration of services and burdening the system with bureaucracy and inefficiency. The decision was reversed in the mid-1980s (Said 2003).

In 1992, the Egyptian Parliament passed a law allowing the establishment of private for-profit universities. At that time, the American University in Cairo (AUC) was the only private, not-for-profit institution. In 1996, four, for-profit private universities were granted authorization with successive approvals to additional private universities ongoing. The expansion of the private sector was a decision made by the government to expand education opportunities to all graduates from secondary education.

As early as the 1980s, many public universities began to operate parallel, fee-based programs in which instruction was offered in foreign languages other than Arabic (Said 2014, 2017). This new trend led to competition among public universities for permission from the Supreme Council of Universities (SCU) to offer similar programs as they produced a significant source of revenue to fund educational activities and services, particularly to free tuition students. Fee-based programs offered by public universities allowed for increased enrollment as well as income, but were heavily criticized by the academic and public communities for creating parallel tracks with different standards, and discriminating between students who attended for free and those paying fees. The same professors were teaching both groups of students, but with different remuneration schemes and often in better equipped facilities depending on which students were being taught.

THE EGYPTIAN POSTSECONDARY EDUCATION SYSTEM

The most recent statistics from the academic year 2014-2015 show the total number of students eligible for admission to postsecondary education at around 600,000. According to the Constitution, the government of Egypt is committed to find places for all students graduating from secondary schools, thus creating major enrollment challenges for higher education. The postsecondary education infrastructure in its current state cannot accommodate this level of intake resulting in overcrowding and quality challenges.

Approximately 2.61 million students are enrolled in 912 different types of public and private institutions as indicated in Table 1. Nearly 30% of students in the age cohort (age group 18-22) are enrolled in postsecondary education, a rate that while

comparable with the global average for OECD (OECD 2010), still falls short of the target of 45% established by the Egyptian government for the year 2030 (SDS 2030).

The postsecondary education system includes public universities, private universities, technological colleges, and private higher institutes offering intermediate and advanced professionally oriented diplomas. In addition, the system includes specialized institutions such as Al-Azhar Islamic University and institutions employing new delivery systems. Table 1 provides an overview of the postsecondary system with the distribution of undergraduate and postgraduate students and academic staff by institution type. Currently, 80% of the enrollment is concentrated in public postsecondary education with the remaining 20% in private institutions. Fewer than 5% of the students in private postsecondary education are enrolled in universities. Although private investment in postsecondary education is encouraged, the stringent requirements for obtaining a government license to offer university programs slows the growth of private universities.

Over 99% of the enrollment in postgraduate studies is concentrated at public universities. Private universities are establishing postgraduate studies to increase their research capacity once their undergraduate programs meet the quality requirements of the Egyptian National Authority for Quality Assurance and Accreditation of Education (NAQAAE). However, enrollment in postgraduate studies in private universities is limited by the availability of highly trained academic staff. Private universities must recruit faculty members from public universities that host approximately 80% of the academic task force.

All types of educational institutions have their own core mission and by-laws. However, they are required to adhere to the global core mission specified in the SDS 2030 — "A high quality education and training system should be available to all, without discrimination, within an efficient, just, sustainable, and flexible institutional framework. It should provide the necessary skills to students and trainees to think creatively, and empower them technically and technologically. It should contribute to the development of a proud, creative, responsible, and competitive citizen who accepts diversity and differences, and is proud of his country's history, and who is eager to build its future and able to compete with regional and international entities" (MOP 2016).

There are separate legislation, acts and decrees that govern the operation of higher education in Egypt for public universities (Act 49, 1972), private universities (Act 101, 1992), private higher education institutes (Act 52, 1970) and technical colleges (Act 528 2003). The MOHESR has been trying to establish unified legislation to govern all types of postsecondary education that caters for their diversity and needs. New legislation is debated publicly through an elaborate review process but has been resisted by the academic community that demands that adequate remuneration constitute an integral part of the new legislation under consideration.

Table 1: Types and numbers of Postsecondary institutions, student enrollment in each category, number of academic staff and assistants, Academic year 2014-2015

Types of Institutions	*Number of Institutions*	*Under-graduate Students Enrolled*	*Post-graduate Students Enrolled*	*Number of Faculty Members*	*Number of Assistants and Assistant Lecturers*
Public Universities	23 Universities (408 Colleges) 102 Other types of Colleges)*	1,177,827 (45.12%)	377,923 (95.00%)	45,722 (77.61%)	33,562 (65.51%)
New forms of Delivery (Public Education offered for-fees)	121 Institutes + Open University	477,856 (18.31%)			
Private Universities	22 Universities (145 Colleges)	115,669 (4.43%)	36 (0.00%)	2,815 (4.78%)	3,635 (7.10%)
Technological Colleges offering two-year degrees)	8 Technological Colleges1 Adv. College + 1 Technical Institute for Advanced Industries	97,745 (3.75%)	–	661 (1.12%)	1,406 (2.74%)
Al-Azhar University	79 Colleges (48 Male + 31 Female)	301,304 (11.54%)	16,142 (4.06%)	6,631 (11.26%)	8,790 (17.16%)
Private Higher Education Institutes offering university equivalent degrees	150 Institutes, 3 PG Institutes, 3 Academies, 11 Branches for Workers University (Four-years programs)	405,573 (15.53%)	3,714 (0.93%)	3,013 (5.11%)	3,777 (7.37%)
Private institutes offering two-year vocational certificates	14 Institutes	34,422 (1.32%)	–	73 (0.12%)	63 (0.12%)
Total		2,610,396 (52% Male)	397,815 (52% Male)	58,915 (62% Male)	51,233 (46% Male)

Source: Information and Documentation Centre (IDC) – Ministry of Higher Education (MOHE) SPU/MOHE 2016.

Formal Technical and Vocational Education and Training (TVET) in Egypt is provided through secondary education in industrial, commercial and agricultural schools, in postsecondary education in technical colleges and middle institutes (formerly known as Middle Technical Institutes, MTIs), and in faculties of industrial education (known also as Industrial Education Colleges, IECs). In general, TVET education is classified into eight different categories according to the type of institute: technical colleges, technical health and nursing institutes, private middle institutes, worker university, integrated technical education clusters (ITECs), and faculties of industrial education. All these institutes offer two-year programs leading to a diploma; an exception is the faculties of industrial educations which offer a bachelors degree upon completion of a four-year program.

The ITEC model has four main components: a technical secondary school (TSS) providing three years of study to students graduating from postsecondary levels, a technical institute (TI) providing two-year intermediate-degree programs, an advanced technical institute (ATI) that offers three-year programs that include one-year of on-the-job training and lead to a bachelor degree in technology, and a vocational training center (VTC) providing advanced training programs teaching skills to adults according to labor market needs. This model has been successfully implemented and is currently being replicated in other geographically distributed governorates (SPU 2012, Said 2014).

Private higher education institutes listed in Table 1 offer bachelors degrees in arts and sciences that are equivalent to those offered by public universities. The expansion and investment in this type of education is highly encouraged by the government to address the massification of the postsecondary system. These institutes focus on education programs in specific areas of specialization, unlike private universities that are multidisciplinary and require larger investments and must respond to strict requirements for official recognition. The quality of these private institutions, however, has been and remains a challenge. The government established stringent conditions for granting licensure to these institutes but suspended requirements for specific numbers of qualified faculty members as mandatory at inception.

Some challenges for higher education persist. Faculty members in all Egyptian postsecondary education lack full academic freedom and autonomy. While they have ample freedom to conduct their own research, supervise theses, and undertake consulting assignments, they have limited authority over grading students. The system of examination and evaluation is centralized and subject to administrative control. Final exam papers are assigned secret numbers, a measure to ensure transparency and to safeguard student rights. NAQAAE imposed further restrictions by encouraging faculty to collaborate in the preparation of final exams. Finally, faculty members and students are not free to participate in certain activities or debates without prior permission from the relevant authorities within the university for security reasons.

MASSIFICATION CHALLENGES AND RESPONSES

The gross enrollment rate in postsecondary education is expected to increase from 30.7% in 2010/11 to 37.5.0% in 2021/22, or possibly 40%. Assuming a rise in higher education participation from 30.7% to 37.5% by 2021, an additional 1.1 million students will need to be accommodated with an average growth rate of 3% per year (SPU 2008). The OECD/WB review (OECD 2010) confirms that this is a manageable expansion provided that the bulk of growth is accommodated in private non-university institutions, shorter programs and mixed mode learning. However, achieving the necessary change in patterns of student enrollment will require fundamental structural and cultural changes that successive governments have tried to achieve through various reform measures.

Several government initiatives have been attempted to address massification issues and the deterioration in quality caused by the high demand for access and the limited ability of the public sector to expand its infrastructure. Realizing the need to encourage private sector investment in postsecondary education without sacrificing quality, the government has undertaken several reform measures introducing incentive schemes such as tax exemptions and encouraging partnerships under the Public-Private-Partnership (PPP) law. In addition, several initiatives were implemented in the form of national projects/programs such as the Engineering and Technical Education Project (ETEP) supported by the World Bank in the early 1990s (Said 2003) and the Higher Education Enhancement Project (HEEP) in 2003, also co-funded with World Bank support, focusing on issues related to access, quality, efficiency, relevance, governance and financing the postsecondary system.

Concerns about the quality and overcrowding of the system led to the development of a fifteen-year strategic plan (2002-2017). The strategy has been endorsed by the academic community and resulted in twenty-five distinct projects to be implemented in 3, five-year phases (Said 2003).

To encourage private investment in postsecondary education, the Ministry of Higher Education and Scientific Research (MOHESR) established a roadmap to consider education needs by geographic location with an emphasis on underserved regions. To address challenges emerging from the concentration of postsecondary education in densely populated urban centers and to alleviate pressures on the overcrowding of student hostels, the roadmap stipulated at least one public university per governorate and several private universities, institutions and/or community colleges depending on local needs. Priority for licensure was given to investors developing locations identified on the roadmap. Institutional diversity and new modes of delivery were also encouraged and were part of the criteria for government support and incentives. It was hoped that private higher education would substantially expand opportunities while maintaining standards of quality.

Despite the efforts made by the government, future success will depend on expand-

ing and improving of the quality of educational infrastructure, increasing the supply and quality of human capital formation, improving the linkages between higher education and labor market needs, and strengthening the links between higher education, research and national innovation, as well as broadening international economic ties.

ROADMAP FOR THE TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET)

The TVET stream of education was limited to two years of study following the US community colleges model and covers priority areas determined by the government to support the SDS 2030. Unfortunately, public perception judged this stream to be inferior. To address this social obstacle, the MOHESR has taken measures to integrate the TVET stream into the education system and offer the possibility of continuing studies towards a diploma, masters and PhD in technology (SPU 2012, Said 2014), thus creating a parallel stream, but with access to further university education. It is hoped that such fundamental change will alter social perceptions and attract more students to this sector. However, chances of success depend on hiring faculty qualified for the technological nature of this type of education, on creating a remuneration scheme that matches, or even surpasses that of the traditional academic stream, as well as creating the necessary technological infrastructure.

Graduate students achieving highest grades and best academic performance have been sent to universities in Europe, mainly in UK and the Netherlands, with government scholarships to study for a masters degree as a step towards building a cohort of technically oriented teachers. A select group of additional candidates were sponsored to pursue studies towards PhD degrees in technological areas to address local industry needs (Said 2003 2014). Around 50% returned to Egypt after earning their degrees. Additionally, well-trained and skilled individuals with practical experience can teach in TVET education without the need for earning higher postsecondary degrees.

A National Qualifications Framework (NQF) is currently being prepared by NAQAAE based on the European model and will be applied to manage education quality and skills that meet labor market needs. The NQF for the hotel and tourism industry, as well as for the construction and manufacturing industries has been completed and implementation is underway. NQF for other specializations as prioritized by the government for labor market needs will be introduced successively. The success of implementing the NQF, however, will depend on the government's ability to make it mandatory (Said 2014).

QUALITY ASSURANCE AND ACCREDITATION EFFORTS

The Egyptian National authority for Quality Assurance and Accreditation of Education (NAQAAE) was established in 2006 with a mandate to inform the public about

the quality of institutions and programs, through assessments based on national academic standards and accreditation procedures. On the postsecondary level, focus is on institutional accreditation, although some programmatic accreditation is also required. A slow rate of accreditation has made it very difficult for NAQAAE to achieve the target of accrediting all postsecondary institutions let alone undertake reaccreditation every five years. It has become mandatory for NAQAAE to be accredited by globally recognized accrediting bodies in order to validate its accreditation processes and the accreditation of postsecondary institutions.

THE EGYPTIAN KNOWLEDGE BANK (EKB)

The government of Egypt has recognized the need for a sustainable, comprehensive long-term development strategy for higher education coordinated with a national developmental agenda to join developed countries in the emerging global knowledge economy. Following are some of the initiatives to support Egypt's Sustainable Development Strategy (SDS) 2030 and enable more provision for online education to better address massification challenges.

In August of 2014 the President of Egypt created the Specialized Council for Education and Scientific Research (SCESR) to foster an "Egyptian Learning Society" encouraging citizens to learn, think and innovate. Several initiatives were proposed including the Egyptian Knowledge Bank (EKB). The EKB is a large digital library that contains research, journals, periodicals, books, electronic magazines, basic and university education curricula, databases, search engines, video digital libraries and photos, in all specializations in addition to computer programs in mathematics and other areas of science and technology. It is available free to all citizens. The EKB content, provided by over 25 publishing houses, was made available in January 2016. Several initiatives have been undertaken to make full use of the EKB including orientation sessions to university faculty and researchers, as well as providing opportunities for more online delivery (ECSPC 2016).

Although the concept of the EKB was well received by academia and the community at large, its economic viability remains questionable. The annual subscription fees for the EKB are said to total USD $64 million. Despite the many positive arguments put forth by the coordinator of SCESR, the fact remains that the cost clearly adds to the country's budget deficits. Other challenges to the EKB stem from the limited ICT infrastructure in the country and the limited demand for the service. The financial model for the EKB needs to be re-examined, including options other than government funding. A successful model was previously adopted in Egypt to make research journals and periodicals accessible to all Egyptian universities based on needs as prioritized by the academic departments within Egyptian public universities. Payment for the annual subscription fees was initially paid in full by the government, then deducted, in phases, from public universities budgets (Said 2017). A phased approach for sustainability of the EKB is needed.

CONCLUSION

While the challenges of massification continue to prevail in Egypt, there are indications that the government has the political will to continue to address the growing demand for postsecondary education. While the SDS 2030 offers a plan for future, previous experience in Egypt indicates that each new government tends to develop new strategic directives without focusing on implementation, outcome or indicators for success.

A national commission needs to be established to monitor, assess performance and follow-up with respective ministries on the timely implementation of their action plans; provide incentive schemes to facilitate and encourage diversity to attract additional private sector investment in postsecondary education, particularly not-for-profit national universities, technical institutes and research universities to mediate the pressures of massification and to promote knowledge, creativity and innovation.

The current 80/20 public/private mix of the postsecondary system needs to be altered to release pressure on the government to provide more enrollment opportunities in the public sector and focus on better quality there. NAQAAE needs to focus on its international recognition and to accelerate the accreditation process to meet the increasing demand on, and expansion of the postsecondary system.

All postsecondary institutions, particularly private ones, must commit to the development of more qualified faculty members to meet their own academic needs as well as those of new institutions; organizational structures need to be established that ensure efficiency; relationships between academics and their institution have to be formalized and renewed based on merit and performance; increased management autonomy needs to be awarded to public universities policy to cultivate institutional capacity to self-manage; and finally admissions policy need to be improved to enroll students with the capacity to learn, think and innovate— the educational qualities that are needed to respond to the global knowledge economy.

Egypt has moved over the past fifty years from a free public higher education system in the 1960s towards its current differentiated system of postsecondary education. This differentiation incorporates new private universities and other new types of education, as well as free public universities and tuition-based education in the public sector. This differentiation resulted from increased demand for higher education and the limitations of the state to adequately respond to massification simply by expanding free public education. Given the priority of increasing access to postsecondary education from the current 30% to 40% of the age cohort, additional measures are needed such as expanded vocational education (TVET) and digital innovation (EKB). At the same time, there is a need for increased quality overall in postsecondary education. Challenges in addressing these needs are the limited academic staff to staff these new institutions, negative public perceptions of vocational education, and insufficient funding.

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