

SCHOOLS FOR SKILLS: A NEW LEARNING AGENDA FOR EGYPT



Schools for Skills – A New Learning Agenda for Egypt



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Foreword

Egypt is going through a major political transition. It will need to manage that transition in ways that bring about greater cohesion in the Egyptian society and greater capacity to build a more competitive and sustainable economy. Effective education is the key to both these challenges.

While gains have been made, particularly over the last decade, in improving literacy and increasing educational participation, major deficiencies persist.

Manifestations of the problems are well known to Egyptian education authorities and other interest groups. While some of the challenges are unique to Egypt's circumstances, many are shared among several countries in the Middle East and North Africa, and beyond.

This report seeks to understand the nature of the challenges ahead for Egypt and to inform decision makers with insights derived from the development of policies and practices elsewhere.

As this report was underway, the government was developing its National Strategic Plan for Pre-University Education 2014-2030 for increasing student participation and outcomes at each stage of education, including the increments in resources required (personnel, capital works, equipment and student support services).

The report was initiated in response to a request from the Government of Egypt and is concerned with the broader public policy issues that give context and purpose to the strategic plan, and are matters of interest to the wider Egyptian community.

This activity was undertaken within the Programme of Work of the OECD Directorate for Education and Skills Programme for Co-operation with Non-Member Economies in partnership with World Bank Human Development Department of the Middle East and North Africa Region, and the European Training Foundation. This activity was funded by the World Bank with in kind support from the Abu Dhabi Education Council, the European Training Foundation and the Islamic Development Bank.

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The team was able to draw upon background information prepared by the Ministry of Education, especially the Condition of Education in Egypt 2010 Report on National Education Indicators.

The team also benefitted greatly from its consultations with students, parents, teachers, school principals, and education administrators in the Alexandria, Beira, Cairo, Fayoum, Menia, Luxor and Qena governorates. The team benefitted too from its discussions with employers. Useful consultations were also held with officials from the Professional Academy of Teachers, the National Centre for Examination and Education Evaluation, the Centre for Curriculum and Instructional Materials Development, the Central Agency for Public Mobilisation and Statistics, the National Authority for Quality Assurance and Accreditation, the General Authority for Education Building, the Education Development Fund, and the Ministry of Education.

The team is grateful for all the information and assistance provided and trusts that the report will provide a useful reference on the path to progressing educational reform in Egypt.

Note from the Authors

Since the completion of the OECD/World Bank review team’s visit to Egypt in 2013 and the finalisation of its report, the Government of Egypt has adopted a new Education Strategic Plan for 2014-2030. The team only had information regarding the previous plan available to it, and focused its observations and discussions on the situation as of 2012 and early 2013. The team has not had the opportunity to consider the new plan and assess its actions and priorities against the recommendations made by the team. However, to assist readers, a summary of the key programmes of the new strategic plan as well as changes to the Technical Education system is presented below:

- **Technical Education Development Programme.** This includes the initiative of “a factory in each school and a school in each factory”, as well as implementation of the Egypt-European Union Support to the Technical and Vocational Education and Training Reform Programme in Egypt (Phase II) – known as TVET II. This programme envisions developing technical education, including reforming the Egyptian technical education curriculum in light of international models so as to prepare workers appropriately and fulfil the requirements of sustainable development. TVET II stresses co-operation amongst all the ministries concerned as well as stakeholders of technical and vocational education in order to enhance the quality and improve the efficiency of this part of the education system. In addition, a new Ministry for Technical Education has been created, and the new Egyptian constitution includes a commitment to the expansion and quality of technical and vocational education in line with international standards. Articles 19 and 20 of the constitution also specify a minimum public expenditure on education of 4% of GDP in total (2% on higher education), gradually rising over time.
- **Technology Development Programme.** The interactive classroom methodology is currently being applied in nine governorates in Egypt and will be expanded in the remaining governorates over the next three years.
- **Primary Education Development Programme.** The focus here is on mainstreaming and expanding the Early Grade Learning Programme in primary school across all governorates. This programme includes both reading and mathematics and is being carried out in partnership with the US Agency for International Development (USAID).
- **Children with Special Needs Programme.** Increased support will be provided for the policy to include children with special needs schools in public education, including equipping schools with trained cadres and the necessary tools, in addition to co-operation with non-governmental organisations to provide resource rooms and follow-up services for students with special needs.

- **Administrative Development, Legislation, and Laws Programme.** Based on the Education Law No. 139 issued in 1981, the precise roles of the Ministry of Education and governorates will be defined. In addition, in light of the new Egyptian constitution, decentralisation will be implemented more effectively and school-based reform enhanced.
- **Human Resource Management Programme.** Teachers' salaries have been raised by setting a bonus in return for the agreed job burden, effective from 1 January 2014 and with an estimated cost of EGP 6.2 billion. This serves to create a positive environment in which school children can develop.
- **Gifted and Talented Sub-programme of the General Secondary Education Programme.** A unit for science, technology, engineering and mathematics (STEM) schools will be established as part of the Central Administration of secondary education of the general education sector. An evaluation will be conducted of existing STEM schools as a basis for future development of pre-university education in Egypt.
- **Primary and Secondary Education Programmes.** The science curriculum in basic education will be reformed in light of global contemporary trends.
- **Human Resource Development and Monitoring and Evaluation Programmes.** The role of inspection and monitoring bodies at all levels will be further activated and developed.

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Acronyms

ACBEU	Admission Co-ordination Bureau of Egyptian Universities
AnPro	Analysis and Projection model
CAI	computer-assisted instruction
CAOA	Central Agency for Organisation and Administration
CAPMAS	Central Agency for Public Mobilisation and Statistics, Egypt
CCIMD	Centre for Curriculum and Instructional Materials Development
CPD	continuing professional development (of teachers)
CPO	Central Placement Office
DPG	Development Partners Group
ECE	early childhood education
EGP	Egyptian pound (unit of currency)
EUIA	Egyptian Union for Investors Associations
ENCC	Egyptian National Competitiveness Council
ETF	European Training Foundation
ETP	Enterprise TVET Partnership
FOE	faculty of education
FOEP	Faculty of Education Enhancement Project
GAEB	General Authority for Educational Buildings
GDP	gross domestic product
GNP	gross national product
HDI	Human Development Index
HEEP	Higher Education Enhancement Project
HIECS	Household Income, Expenditure and Consumption Survey
IAI	Internet-assisted instruction
ICT	information and communications technology
IGCSE	International General Certificate of Secondary Education
IIE	Institute of Industrial Education
ILO	International Labour Organization
IMF	International Monetary Fund
INSET	in-service education of teachers
IOM	International Organization for Migration
ISCED	International Standard Classification of Education
ITC	Industrial Training Council
LMI	labour-market information
MENA	Middle East and North Africa (region)
MKI	Mubarak-Kohl Initiative (German dual system of technical training)
MOE	Ministry of Education, Egypt
MOF	Ministry of Finance, Egypt

MOHE	Ministry of Higher Education, Egypt
MOMM	Ministry of Manpower and Migration, Egypt
MOITS	Ministry of Industry, Trade and Small and Medium-Sized Enterprises, Egypt
MTI	middle technical institute
NAQAAE	National Agency for Quality Assurance and Accreditation of Education
NCEEE	National Centre for Examinations and Educational Evaluation
NESP	National Education Strategic Plan 2007-2012
NGO	non-governmental organisation
NSAT	National Standardised Achievement Test
NSP	National Strategic Plan for Pre-University Education 2014-2030
NSSP	National Skills Standard Project
NTA	National TVET Authority
PAT	Professional Academy for Teachers, Egypt
PCK	pedagogical content knowledge
PISA	Programme for International Student Assessment
PRESET	pre-service education of teachers
PSPU	Policy and Strategic Planning Unit
PVTD	Productivity and Vocational Training Department (of MOITS)
RAI	radio-assisted instruction
RCI	redundancy cost indicator
SABER	System Approach for Better Education Results (World Bank)
SCHRD	Supreme Council for Human Resource Development
SEEP	Secondary Education Enhancement Project
SIP	School Improvement Plan
SMEs	small and medium-sized enterprises
SPU	Strategic Planning Unit
STEM	science, technology, engineering and mathematics
STI	Staff Training Institute
SYPE	Survey of Young People in Egypt
TCC	Technical Competency Centre
TIMSS	Trends in International Mathematics and Science Study
TVET	technical and vocational education and training
TVET II	Technical and Vocational Education and Training Reform Programme in Egypt (Phase II)
UAE	United Arab Emirates
UNDP	United Nations Development Programme
UNESCO	United Nations Education, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
VET	vocational education and training
VTC	Vocational Training Centre
WEF	World Economic Forum

Executive summary

Egypt's future depends in large part on the skills and resilience of its young people. However, too many young people are not developing the attributes that the country needs at school. Most of the working-age population do not have adequate skills for employment in a modern economy. Traditional sources of employment are not growing at anywhere near the rate required to absorb new entrants to the labour market – whether school leavers or tertiary education graduates. The urgent priority for Egypt is to make education and training relevant to its economic prospects. It will need to do so in ways that develop rounded citizens who can work together to build a cohesive society.

The transformation that is required in Egyptian education involves improving the learning experiences and outcomes of schooling so that educated youth can be productive citizens. That involves shifting the orientation of Egyptian schooling from the acquisition and repetition of knowledge to the development and demonstration of skills.

It means, therefore, reducing the current emphasis on curriculum content coverage and changing classrooms from passive to interactive places of learning. It also means using assessment to monitor student progress and inform educational interventions, rather than as a crude and unfair tool for social sorting.

It means overhauling the underperforming, under-resourced and undervalued provision of technical and vocational education and training (TVET), by upgrading its capacity and status, reorienting its offerings to current and emerging labour market requirements, and integrating it as a system at the centre of Egypt's economic transformation agenda.

Egyptian authorities have been addressing these challenges. The comprehensive National Education Strategic Plan 2007-2012 set ambitious goals. Considerable progress has been made in achieving higher rates of participation in the compulsory and post-compulsory stages of education. Student progression rates have risen and attrition rates have fallen. Attention has been paid to increasing professionalisation of the teaching workforce, greater autonomy for school principals and a more systematic approach to data collection and reporting of progress against targets.

Less progress has been made, however, on the difficult challenge of improving educational quality. The common factor undermining efforts to improve student learning at all levels is the invalid system of student assessment and its improper use. It is invalid because of deficiencies in its design, and its use is improper because scores derived from its application unjustifiably determine the life chances of students. The most pervasive influence in Egyptian education is the secondary school leaving exam (*thanwiya amma*). It needs to be reconstructed, alongside the development of more valid and reliable assessment methods and a more flexible approach to university admissions.

School principals and classroom teachers should be given more discretion in the use of available resources and held accountable for the results they achieve. The educational leadership at the district administrations (*idaras*) and governorates (*muddiriyas*) need to see their role as managing for results rather than just inspecting to ensure that particular matters are covered. They need to focus on what students are learning, and provide the support that principals and teachers need, including by diffusing good innovations in teaching practice.

Teachers generally will need more focused support so that they can continue to improve their teaching, and the opportunity to share and learn with their professional colleagues. The formation of the Professional Academy for Teachers represents a major, long-term structural advance. Teacher education generally, especially pre-service teacher education, will need to be sharpened up and, in some areas, especially in technical and vocational education, reshaped.

A well-constructed and well-communicated change agenda, grounded in evidence about current deficiencies and looking ahead to future imperatives, and bringing together progressive teachers and school leaders, should harness considerable educator support. Employers, especially in private-sector enterprises which will be the main source of Egypt's future economic base, should have a strong say in helping to reshape secondary education, as well as TVET more broadly, and thereby helping to shape Egypt's future labour supply.

Serious attention needs to be paid not only to what change is required but also to how that change can be implemented, followed through and embedded in culture and practice in all classrooms, and in the steering and supporting arms of government administration at all levels.

Considerable effort will need to be applied to making the necessary shift from an authoritarian and unaccountable management model to one based on transparent information that underpins accountability for performance at every level. Broad public-sector reforms will be necessary complements to the education-specific and labour market reforms identified in this report.

Chapter 1.

Introduction

This chapter outlines the context for educational policy in Egypt. It notes the special place of Egypt in the world, its accumulated cultural characteristics and its contemporary political-economic transition. The chapter describes key aspects of Egypt's economy, investment climate, workforce, employment structure and technological capacity. It also outlines key aspects of its population and human development.

Egypt's place in the world

Egypt is located 27° N, 30° E, in northeast Africa, between the Mediterranean Sea on the north and the Red Sea on the east. It is bordered by the Gaza Strip and Israel to the northeast, Sudan to the south and Libya to the west.

Its total area is 1.01 million km², of which 995 450 km² is land, only 3% of it arable. Its main features are the River Nile and the desert.

The estimated population at the 2006 census was 73 million. On the basis of more recent estimates (CAPMAS, 2012), the present population is around 80 million. Over 97% of the population lives in the narrow strip of the Nile Valley and in the Nile Delta, which is merely 5% of the country's total land.

Egypt has long been a nodal point for routes – westward along the coast of North Africa, northwest to Europe, northeast to the Levant, southward along the Nile to Africa, and southeast to the Indian Ocean and Asia.

Egypt has a major role in Middle Eastern geopolitics arising from its size and location: its control of the Suez Canal, linking the Indian Ocean and the Mediterranean Sea, and its control of the Sinai Peninsula, the only land bridge between Africa and the rest of the eastern hemisphere.

Historical legacies

Egypt gave rise to one of the world's great civilisations, with a unified kingdom forming around 3200 BC and a series of dynasties ruling for the next three millennia. The last native dynasty fell to the Persians in 341 BC. Egypt's special location has exposed it to rule by different powers such as the Ptolemies, Romans, Arabs, Fatimids, Mamluks, Ottomans, French and British. Each of these had its own influence on Egyptian culture. However, the Arabic and Muslim cultures, dating from the 7th century, can be claimed to have the most significant impact on Egypt. Before the Arab invasion in 639, Coptic was both the popular and religious language. Today Coptic is a liturgical language only and Arabic is the common and official language, while English and French are widely used by the educated classes (Mikhail, 2008).

Britain seized control of Egypt's government in 1882, although nominal allegiance to the Ottoman Empire continued until 1914. Partially independent from Britain in 1922, Egypt acquired full sovereignty with the overthrow of the British-backed monarchy in 1952 and its declaration as an independent republic.

Since 1954, Egypt has passed through a number of stages, starting with socialism under President Nasser, followed by an "open door" era initiated by President Sadat. The era of economic development, under President Mubarak from 1981, involved reforms to the highly centralised economy inherited from the Nasser period. Each of these eras has had its own impact on the Egyptian context in terms of economics, politics and education and, not least, the occupational aspirations of young people and their families.

Contemporary transitions and aspirations

On 17 December 2010, Mohammed Bouazizi, a street vendor who could not get a stable job, who was earning some USD 140 per month and using the money to put his sister through university (Beaumont, 2011), set himself on fire in the Tunisian city of

Sidi-Bouزيد after a police inspector confiscated his fruit, scales and cart. His act triggered protests against the repressive regime of then President Zine El-Abidine Ben Ali who was forced to flee to Saudi Arabia just ten days later. These events reverberated throughout the Arab world, giving vent to longstanding anti-authoritarian sentiment and, in several countries, including Egypt, inspiring a democratic uprising. While the grounds for revolt were deep and far-reaching across the society, notably the socio-economic marginalisation of at least half of the population excluded from the formal economy, educated youth had particular grievances. The post 2008 generation of young graduates were seeing a sudden shift in their projected life-arc, from an upward to a downward curve (Mason, 2012). These “graduates with no future” were feeling cheated out of the promised returns to educational attainment: a secure and rewarding job, a secure basis for family formation, a better living standard than their parents.

On 25 January 2011, tens of thousands of Egyptians staged unprecedented demonstrations in Cairo’s Tahrir Square and other Egyptian urban centres. On 11 February then President Hosni Mubarak stood down and handed power to the army. By March, Egyptian voters had approved a new interim constitution and in November elections were held for Egypt’s first post-revolution parliament. Expectations were diverse and aspirations high. As it turned out, the Muslim Brotherhood’s Freedom and Justice Party gained the largest single block of votes (37%) followed by the Salafist-dominated Nour Party (24%).

In May 2012, the first round of elections for a new president was held. Before the second round could be conducted, the Supreme Court ruled that the elected parliament was illegitimate, and dissolved it. In June, President Muhammad Morsi was elected with a majority of 51.7% of the second-round vote. In July, the new president issued a decree annulling the Supreme Court’s dissolution of parliament. The court declared its rulings “binding”. The president subsequently issued a decree to widen his powers. Protests escalated.

As political tensions mounted, the grassroots Tamarod campaign started in May 2013 collecting signatures to force President Morsi to step down, with calls for mass demonstrations nationwide on 30 June 2013. These Tamarod-led mass demonstrations were followed by the announcement of an ultimatum by the army that gave all political forces a 48-hour period to resolve the impasse. President Morsi was removed as President of Egypt on 2 July, and the Minister of Defence, General Abdel Fatah al-Sisi, made an announcement outlining a new political transitional phase in a televised speech on 3 July. The head of Egypt’s Supreme Constitutional Court, Adly Mansour, was sworn in as interim president according to the announced roadmap. On 9 July he issued a constitutional declaration with 33 articles setting the milestones and timeline of this 9-month political transition phase, and appointed an interim technocratic government which took office on 17 July. The transition roadmap also included suspending the 2012 constitution, setting up a process for amending it and holding a referendum on the new constitution, followed by parliamentary and presidential elections. In a deeply polarised context and a volatile security situation due to various confrontations between security forces and supporters of the Muslim Brotherhood, a 50-member Constitutional Committee was appointed on 2 September and first met on 8 September.

This political volatility may be seen as part of the struggle for democratisation after a long period of authoritarianism. The unrest and uncertainty, however, also undermine the necessary process of developing the capacity of the people to make their way in a more competitive, globally integrated and knowledge-based world.

Government structure

The Parliament of the Arab Republic of Egypt is a bicameral legislature. The People's Assembly is the lower house and comprises 454 deputies. The Assembly has a 5-year term. All seats are voted on in each election. The Shura Council is the upper house. The Council comprises 264 members of which 174 members are directly elected and the 88 are appointed by the President of the Republic for 6-year terms. Membership is rotating, with one-half of the Council renewed every three years. The Shura Council's legislative powers are limited. The country is divided into 27 governorates (*muddiriyas*), under 7 economic regions.

Economy

Agricultural production in Egypt is confined to the fertile corridor irrigated from the Nile river. Egypt's natural resources include petroleum, natural gas, iron ore, phosphates, manganese, limestone, gypsum, talc, asbestos, lead and zinc. Egypt has a developed energy market based on coal, oil, natural gas and hydropower. There are substantial coal deposits in the northeast Sinai. Oil and gas are produced in the western desert regions, the Gulf of Suez, and the Nile Delta. In addition, Egypt has large gas reserves.

Egypt's primary economic strength stems from its diversity, in comparison with the rest of the region. Table 1.1 shows the breakdown of gross domestic product (GDP) in 2010-11. Hydrocarbon extraction constituted 15% of GDP (the lowest proportion in the Arab world), manufacturing 17%, agriculture 15%, wholesale and retail 12%, construction and real estate 7%, financial and telecommunications services 8%, and externally oriented sources such as the Suez Canal and tourism over 3% each. The public sector overall accounted for 38% of GDP, with significant government functions in mining, electricity, water, brokerage, social insurance, the Suez Canal and general government administration. The Egyptian military contributes to economic activity.

Table 1.1 Gross domestic product at factor cost by economic sector in 2012-13 (EGP millions)

	Total	Private	Public
Total	1 677 351.8	1 019 357	657 994.8
Agriculture, woodlands & hunting	243 355.5	243 311	44.5
Extraction (petroleum, gas, etc.)	290 739	52 006	238 733
Manufacturing	262 505	219 209	43 296
Electricity	21 237	3 053	18 184
Water & sewerage	5 826	0	5 826
Construction & building	76 747	67 847	8 900
Transportation & storage	67 212	50 373	16 839
Communication & information	44 507	29 663	14 844
Suez Canal	32 396	0	32 396
Wholesale & retail trade	183 831	178 072	5 759
Financial intermediaries & supporting services	54 814	17 925	36 889
Insurance & social insurance	5 287	1 806	3 481
Restaurants & hotels	52 761	52 175	586
Real estate activities	43 474	41 667	1 807
General government	174 713.3	0	174 713.3
Education, health & personal services	63 721	62 250	1 471

Note: The official currency is the Egyptian pound (EGP). In mid-May 2015, 1 USD was the equivalent of 7.62 EGP and 1 EUR bought 8.56 EGP.

Source: CAPMAS (2012), Egypt Statistical Yearbook, 2012, CAPMAS (Central Agency for Public Mobilisation and Statistics), Cairo; Ministry of Finance.

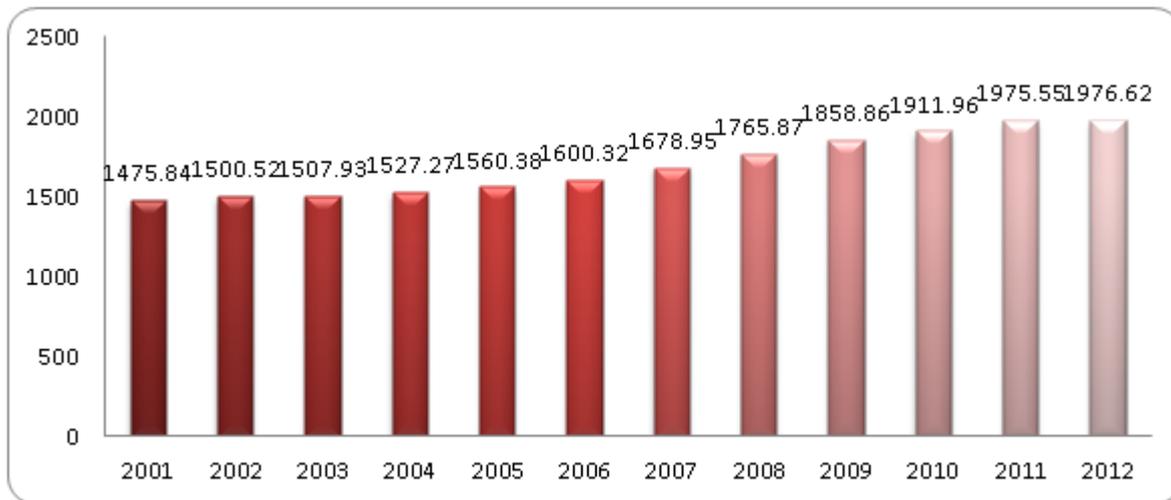
Under comprehensive economic reforms initiated in 1991, Egypt relaxed many price controls and partially liberalised trade and investment. Manufacturing became less dominated by the public sector, especially in heavy industries. A process of public-sector reform and privatisation began to enhance private business opportunities. Agriculture, mainly in private hands, has been largely deregulated, with the exception of cotton and sugar production. Construction, non-financial services, and domestic wholesale and retail trades are largely private.

Major fiscal reforms were introduced in 2005 in order to tackle the informal sector which according to estimates represents somewhere between 30% and 60% of GDP (ILO, 2011). Many changes were made to cut tariffs, tackle the black market and reduce bureaucracy. The corporate tax rate was initially reduced to a flat 20% (from a previous range of 34-45%) and, in 2012, scaled up progressively to a maximum rate of 25%. Amendments to investment and company law were introduced in order to attract foreign investors. However, these measures appear to have had little if any effect on the informal sector.

After unrest erupted in January 2011, the Egyptian government halted economic reforms and increased social spending to curb public dissatisfaction, but political uncertainty caused economic growth to slow significantly, reducing the government's revenues. Tourism, manufacturing, extractive industries and the Suez Canal were among the hardest hit sectors of the Egyptian economy, and economic growth is likely to remain below potential through to fiscal year 2016.

Egypt's public finances have been deteriorating sharply as a consequence of increasing recurrent spending, notably on fuel subsidies, public-sector wages and interest payments on public debt. In the 2013 financial year (FY13) the overall budget deficit reached almost 14% of GDP, up from 10.6% in FY12 and 9.8% in FY11 (Ministry of Finance Bulletin, March 2014).

GDP growth stalled during the period of political instability of 2011 and 2012 (Figure 1.1). Following the dismissal of President Morsi, in early July 2013, Saudi Arabia, the United Arab Emirates (UAE) and Kuwait pledged an aid package of USD 12 billion to support Egypt, and this was augmented by another USD 3.9 billion from the UAE in October. The total Gulf support package comprises grants (cash and in-kind) of USD 7 billion, USD 6 billion of interest-free 5-year deposits held at the Central Bank of Egypt and project financing of USD 2.9 billion. As FY14 kick-started with the windfall of aid pledged by the Gulf, the interim government embarked on a fiscal stimulus programme to activate the economy and increase the real per capita growth rate.

Figure 1.1 Egypt GDP per capita, 2001-12 in USD in constant prices since 2000

Source: World Bank Development Indicators, available at <http://data.worldbank.org>.

The World Economic Forum (WEF) lists Egypt as a transition economy. Its ranking on the Global Competitiveness Index has steadily declined from 70th in 2009, 81st in 2010, 94th in 2011 and 107th in 2013, out of 144 countries (World Economic Forum, 2012). Among the priorities recommended by the 2012 WEF report was the need to improve its education system.

As of late 2013, the economic situation in Egypt was precarious. Following the sharp currency depreciation in the first half of 2013, inflation has been rising. The headline urban inflation rate in October 2013 was 10.5%, with food inflation at 13.2%. Living standards continue to be adversely affected, given that food accounts for more than 40% of the average Egyptian per capita income, with higher proportions for the poor and vulnerable segments of the population. Unemployment has also been rising.

Investment climate

An estimated 2.7 million Egyptians living abroad contribute actively to the development of their country through remittances (USD 14.3 billion in 2011), as well as the circulation of human and social capital and investment (Collinson, 2012). The Egyptian government is seeking to attract inwards investment in urban land development and private-sector business, including private for-profit investment in education.

Egypt was ranked 74th out of 107 economies in the Global Innovation Index in 2007 and it ranked 108th out of 142 in 2013 (Dutta and Caulkin, 2007; Dutta and Lanvin, 2013). Compared to Malaysia, Egypt ranks lower in knowledge workers and information and communication technology (ICT) use (Table 1.2). Currently, its strengths are in its rank for expenditure on education, knowledge-intensive employment and ICT infrastructure (Dutta and Lanvin, 2013).

Table 1.2 Comparing Egypt, Jordan and Malaysia for selected factors related to education and innovation, Global Innovation Index, 2012

Factor	Egypt (number or rank)	Jordan (number or rank)	Malaysia (number or rank)
Population	84.6m	6.5m	29.5m
GDP/capita, PPPs	6 557.4	6 044.4	16 942.1
Global Innovation Index rank	108	61	32
Education rank	73	45	84
Current expenditure on education rank, % gross national income (GNI)	n/a	n/a	56
Public expenditure per pupil rank, % GDP/capita	70	n/a	61
School life expectancy rank	81	78	79
Pupil-teacher ratio rank, secondary	54	39	56
Business sophistication rank	99	47	27
Knowledge workers rank	67	79	43
Knowledge intensive employment rank, %	34	n/a	65
Information and communication technologies infrastructure rank	46	82	34
ICT use	74	68	52

Note: shaded factors are strengths for Egypt

Source: Dutta, S. and B. Lanvin (eds.) (2013), *The Global Innovation Index 2013: The Local Dynamics of Innovation*, INSEAD, WIPO and Cornell University, www.wipo.int/edocs/pubdocs/en/economics/gii/gii_2013.pdf

Previous regulatory reforms, including the establishment of a “one-stop shop” for investment, made starting a business less time-consuming and costly, but without reforms in other areas they have proven to be largely cosmetic, failing to create real momentum for dynamic entrepreneurial growth. In the absence of a well-functioning labour market, informal labour activity persists in many sectors, as discussed in Chapter 4.

Despite Egypt’s recent tax and regulatory improvements there are still major obstacles to increasing investment and reducing unemployment. The system is heavily bureaucratic from years of centralised government, small and medium-sized enterprises (SMEs) have difficulty accessing finance, infrastructure development is needed, and enterprises lack management capacity.

The major issue for investment is macroeconomic stability. Egypt’s GDP growth slowed following the financial crisis, with growth of 1.98% in 2010/11, 2.2% in 2011/12 and 2.1% in 2012/13 as the country suffered from loss of investor confidence (Khandelwal and Roitman, 2013). Political instability can be expected to be associated with sizeable output losses, sluggish recovery, rising unemployment and inflation, and a much tightened fiscal position. While the windfall of Gulf aid is providing a short-term buffer for Egypt, the chronic macroeconomic imbalances need to be addressed swiftly, most notably fiscal consolidation.

The World Economic Forum report (2012) identified three other major areas for improvement: increasing domestic competition, and making labour markets flexible (Egypt ranked 135th) and more efficient (Egypt ranked 141st).

Increasing domestic competition

Egypt has a competition policy framework, including competition law and a competition authority, but lacks an effective implementation and enforcement regimen. There was some good news in the WEF report rankings in that there appears to be “less favouritism by government officials” (up 31 places in WEF ranking) and “stronger

corporate ethics” (up by 17 in the WEF ranking) over the preceding year (World Economic Forum, 2012).

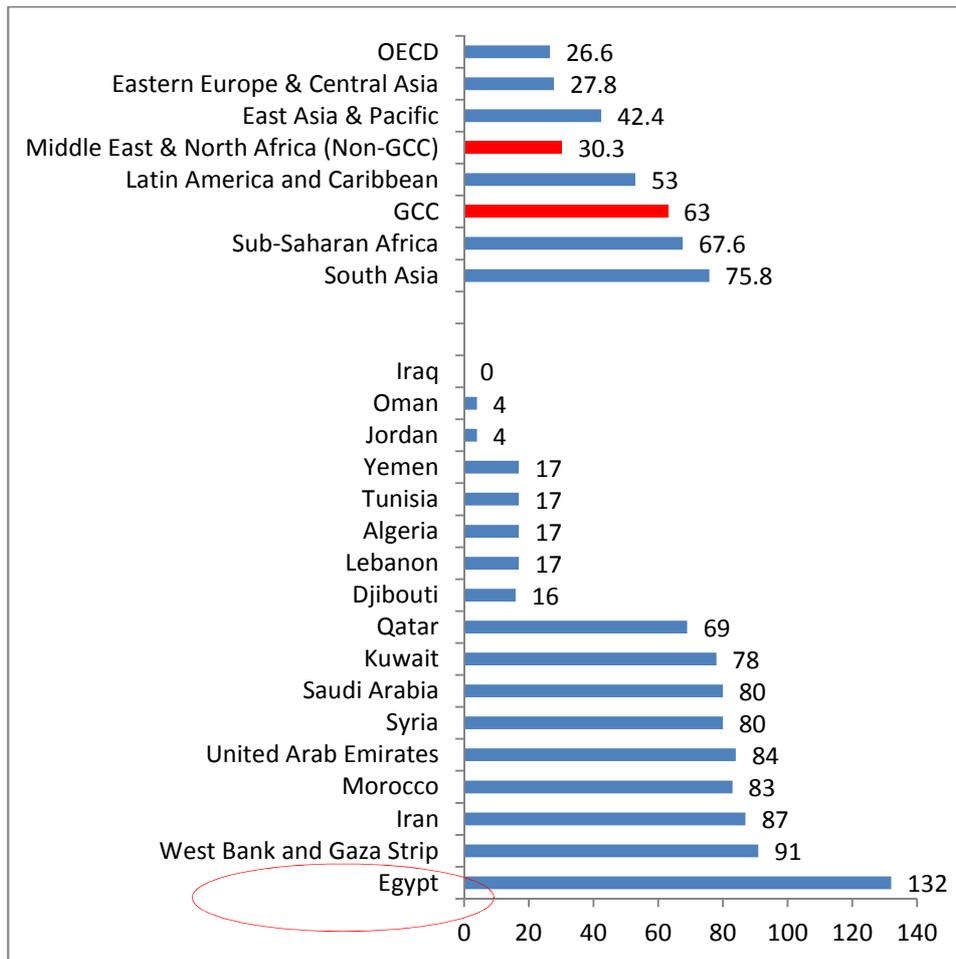
Labour market

Egypt’s labour market has been growing by more than 3% per annum. According to the Ministry of Manpower and Migration (MOMM), There are about 715 000 potential entrants to the labour force each year, mostly young educated graduates. New job opportunities come nowhere near matching this demand. Where there is growth through investment it has been mainly “jobless growth”. Private investments have been highly capital intensive both because of energy subsidies and because employers perceive a mismatch between the skills they need and those provided through the education system. Egypt has high labour costs, equivalent to 25.6% of corporate profits (Angel-Urdinola and Semlali, 2010) which lead firms to substitute labour with capital and has the effect of slowing down economic growth. Social contributions are a significant share of labour taxes, including pension contributions and unemployment insurance contributions which, as discussed in Chapter 4, discourage the formalisation of many enterprises. Egypt’s unemployment insurance system and public employment service both require modernisation and reform in coverage. Importantly, urgent attention needs to be given to the mismatch between the skills demanded from employers and those supplied by the education and training systems.

Constitutional and legal provisions relating to employment

Egypt’s labour laws militate against a flexible labour market which could otherwise adapt to economic change, attract foreign direct investment and reduce unemployment. The labour laws have favoured protecting employees’ job security over encouraging the creation of new jobs. Costs and regulatory hurdles for hiring and firing are very high. One indicator generally used to compare costs of firing employees is the redundancy cost indicator (RCI) (Angel-Urdinola and Kuddo, 2010). The indicator measures the cost of advance notice requirements, severance payments and penalties due when terminating a redundant worker, expressed in weeks of salary. Egypt’s redundancy costs are among the highest in the world: the RCI in Egypt amounts to 132 weeks of salary, compared with an average of 50 in the Middle East and North Africa (MENA), 53 in Latin America, 28 in Europe and Central Asia (ECA), and 27 among OECD countries (Figure 1.2).

Figure 1.2 Redundancy cost indicator in weeks of salary



Source: Angel-Urdinola, D.F. and A. Kuddo (2010), “Key characteristics of employment regulation in the Middle East and North Africa”, SP Discussion Paper, No. 1006, World Bank, Washington, DC.

In July 2003, a new labour law was enacted to increase flexibility in hiring and dismissing employees. It introduced fixed-term contracts, allowed workers the right to strike, and introduced mechanisms for collective bargaining and worker/employer dispute settlements. However it appears to have had a limited positive impact on increasing flexibility and job creation.

Workforce

As shown in Table 1.3, Egypt’s labour-force participation rate has been rising alongside its increasing population. The estimated workforce in 2006 was 23.3 million, consisting of 21.0 million employed and 2.1 million unemployed persons, with an official unemployment rate of 9%. Unemployment was distributed almost equally between rural and urban areas. More recently, unemployment levels have risen, with the official unemployment rate in 2011 at 12%.

Table 1.3 Population and labour force trends

Labour force trends	1996	2000	2006	2011
Population (millions)	59.3	63.3	72.6	79.6
Labour force (millions)	17.2	18.9	23.3	26.5
Participation rate (%)	29.1	29.9	32.1	33.0
Number of employed (millions)	15.7	17.4	21.2	23.4
Number of unemployed (millions)	1.53	1.5	2.1	3.2
Unemployment rate (%)	8.9	7.9	8.9	12.0

Source: CAPMAS (2012), *Egypt Statistical Yearbook, 2012*, CAPMAS (Central Agency for Public Mobilisation and Statistics), Cairo

Table 1.4 shows the distribution of employment by industry sectors. Agriculture remains the single largest industry by employment (29.2%). Agricultural employment has been declining, however, down from 41% in 1990. The next biggest employer is construction (11.6%), closely followed by wholesale and retail trade (11%), and then by manufacturing (9.8%) and education (9.1%).

Table 1.4 Distribution of employment by industry, and proportion of male employees, 2011 (%)

Industry sector	Industry share of total employment (%)	Male share of each industry sector (%)
Agriculture, hunting, forestry & fishing	29.2	70.6
Manufacturing	9.8	91.8
Wholesale and retail trade, and repair of motor vehicles	11.0	89.3
Construction	11.6	99.3
Education	9.1	51.8
Public administration and defence	8.0	77.0
Transport and storage	6.9	97.8
Health and social work	2.7	41.9
Accommodation and food services	2.0	96.3
Specialised scientific and technical activities	1.8	84.4
Information and communications	0.8	79.8
Electricity, gas, steam and air conditioning supply	1.1	93.5
Financial and insurance services	0.9	75.6
Administrative and support services	0.7	88.5
Water supply, sewerage and waste management	0.7	93.6
Arts, entertainment and recreation activities	0.5	85.2
Home services for private households	0.5	76.3
Mining and quarrying	0.2	100.0
Other service activities	2.4	n.a.
Total	100	

Source: CAPMAS (2012), *Egypt Statistical Yearbook, 2012*, CAPMAS (Central Agency for Public Mobilisation and Statistics), Cairo.

Table 1.5 shows that wage and salary earners accounted for 61% of all employment. Unpaid family workers comprised 11% of total employment, of whom 55% were female. Fewer women were business owners or self-employed than men.

Table 1.5 Distribution of employment of persons aged 15 years and over, by status and gender, Egypt 2011 (000s)

	Males	Females	Total
Wage & salary earner	11 837	2 445	14 282
Business owner	3 521	147	3 668
Self-employed	2 201	645	2 846
Unpaid family workers	1 160	1 391	2 551
Total	18 719	4 628	23 347

Source: CAPMAS (2012), *Egypt Statistical Yearbook, 2012*, CAPMAS (Central Agency for Public Mobilisation and Statistics), Cairo.

Technology

In the 2013 WEF ranking of technology network readiness (Bilbao-Osorio et al., 2013), Egypt ranked 80th out of 144 economies in 2013, with a mean score of 3.78 (Table 1.6). Egypt ranks reasonably high for the affordability of technology, ranking 8th for cell phone charges, but very low for skills (139th for educational quality, for example).

Table 1.6 World Economic Forum rankings of technology network readiness, 2013, Egypt

INDICATOR	RANK /144	VALUE	INDICATOR	RANK /144	VALUE
<i>1st pillar: Political and regulatory environment</i>			<i>6th pillar: Individual use</i>		
1.01 Effectiveness of law-making bodies*	122	2.6	6.01 Mobile phone subscriptions/100 pop.	82	101.1
1.02 Laws relating to ICTs*	87	3.7	6.02 Individuals using Internet, %	73	38.7
1.03 Judicial independence	53	4.1	6.03 Households w/ personal computer, %	70	36.4
1.04 Efficiency of legal system in settling disputes*	86	3.4	6.04 Households w/ Internet access, %	70	30.5
1.05 Efficiency of legal system in challenging regulations*	100	3.2	6.05 Broadband Internet subscriptions/100 pop.	91	2.1
1.06 Intellectual property protection*	83	3.3	6.06 Mobile broadband subscriptions/100 pop.	46	24.0
1.07 Software piracy rate, % software installed	53	61	6.07 Use of virtual social networks*	38	5.9
1.08 No. of. procedures to enforce a contract	116	42	<i>7th pillar: Business usage</i>		
1.09 No. of days to enforce a contract	130	1 010	7.01 Firm-level technology absorption*	86	4.6
<i>2nd pillar: Business and innovation environment</i>			7.02 Capacity for innovation*	80	3.0
2.01 Availability of latest technologies*	115	4.2	7.03 patents, applications/million pop.	72	0.6
2.02 Venture capital availability*	40	3.0	7.04 Business-to-business Internet use*	111	4.4

Table 1.6 World Economic Forum rankings of technology network readiness, 2013, Egypt (continued)

INDICATOR	RANK /144	VALUE	INDICATOR	RANK /144	VALUE
2.03 Total tax rate, % profits	90	42.6	7.05 Business-to-consumer Internet use*	80	4.4
2.04 No. days to start a business	25	7	7.06 Extent of staff training*	129	3.1
2.05 No. procedures to start a business	48	6	<i>8th pillar: Government usage</i>		
2.06 Intensity of local competition*	121	4.0	8.01 Importance of ICTs to government vision*	122	3.1
2.07 Tertiary education gross enrolment rate, %	75	32.4	8.02 Government Online Service Index, 0–1 (best)	42	0.60
2.08 Quality of management schools*	137	2.8	8.03 Government success in ICT promotion*	92	4.0
2.09 Government procurement of advanced technology*	95	3.3	<i>9th pillar: Economic impact</i>		
<i>3rd pillar: Infrastructure and digital content</i>			9.01 Impact of ICTs on new services and products*	98	4.0
3.01 Electricity production, kWh/capita	86	1 743.7	9.02 ICT PCT patents, applications/million pop.	67	0.2
3.02 Mobile network coverage, % pop	41	99.7	9.03 Impact of ICTs on new organisational models*	80	4.0
3.03 International Internet bandwidth, kb/s per user	114	3.8	9.04 Knowledge-intensive jobs, % workforce	43	30.3
3.04 Secure Internet servers/million pop	105	3.0	<i>10th pillar: Social impacts</i>		
3.05 Accessibility of digital content*	100	4.4	10.01 Impact of ICTs on access to basic services*	104	3.8
<i>4th pillar: Affordability</i>			10.02 Internet access in schools*	116	3.0
4.01 Mobile cellular tariffs, PPP USD/min.	8	0.05	10.03 ICT use & government efficiency*	94	3.8
4.02 Fixed broadband Internet tariffs, PPP USD/month	13	17.25	10.04 E-Participation Index, 0–1 (best)	15	0.68
4.03 Internet & telephony competition, 0–2 (best)	101	1.40			
<i>5th pillar: Skills</i>					
5.01 Quality of educational system*	139	2.3			
5.02 Quality of maths & science education*	139	2.3			
5.03 Secondary education gross enrolment rate, %	101	72.5			
5.04 Adult literacy rate, %	113	72.0			

Note: Indicators followed by an asterisk (*) are measured on a scale of 1 to 7 (with 7 the best).

Source: CAPMAS (2012), *Egypt Statistical Yearbook, 2012*, CAPMAS (Central Agency for Public Mobilisation and Statistics), Cairo; Bilbao-Osorio, B., Dutta, S. & Lanvin, B. (Eds.) (2013). *Global Information Technology Report 2013. Growth and Jobs in a Hyperconnected World*. Geneva: World Economic Forum and INSEAD. Retrieved April 10, 2013.

In the rapidly emerging world of global networks, Egypt risks falling behind other countries, if it does not give urgent attention to raising the skills quality of its workforce – its efforts to develop its physical ICT capacity notwithstanding.

Human development

Population composition and distribution

According to the 2006 Population, Housing and Establishments Census (CAPMAS, 2006), the population of Egypt was 72 798 million. Males represented 51% and females 49% of the population. The age composition of the population is shown in Table 1.7.

Table 1.7 Egyptian population by age composition, 2006

Age group	<1 year	Over 1 and less than 5 years old	Over 5 and less than 15 years old	Over 15 and less than 45 years old	Over 45 and less than 60 years old	60 plus years	Total
Population (000s)	628	7 090	15 363	36 288	9 001	4 428	72 798
Share of population (%)	0.9	9.7	21.1	49.9	12.4	6.0	100.0

Source: CAPMAS (2012), *Egypt Statistical Yearbook, 2012*, CAPMAS (Central Agency for Public Mobilisation and Statistics), Cairo; CAPMAS (2008), *Egypt in Figures*.

In 1996, 38% of Egypt's population was aged under 15 years old. In 2006 that age group comprised 32% of Egypt's population and in 2011, it is estimated to represent 31.7%. By 2021, the under-15 age group is projected to total 25 million and comprise 26% of Egypt's total population (CAPMAS, 2012).

In 2006, the rural population accounted for 57% and the urban population 43% of Egypt's total population. In 2012, Cairo had a population of some 8.7 million, and Alexandria 4.5 million.

Rising fertility rates (three children per woman) and higher life expectancies are leading to a more rapid growth in Egypt's population than was projected on the basis of the 2006 census. Egypt's total population grew by 20% between 1996 and 2006 and by 14% between 2006 and 2012 (CAPMAS, 2012). This growth is generating environmental stresses and urban settlement pressures, not least on water supplies. Egypt imports 40% of its food and 60% of its wheat (Oxford Business Group, 2011). Further use of arable land for housing will add to Egypt's agricultural challenges, with efforts being made to reclaim areas of desert for productive use.

The United Nations Human Development Programme has a standard means of comparing the well-being of countries using the Human Development Index (HDI), which it has published over several decades. The index is a comparative composite measure of life expectancy, literacy, education, standards of living and quality of life. Between 1980 and 2012 Egypt's HDI rose by 2.1% annually from 0.407 to 0.662, which gives the country a rank of 112 out of 187 economies with comparable data. The growth in life expectancy and education were major components contributing to its improvement in rank and score (UNDP, 2013). In a globally competitive context, it will be the relative rather than the absolute level of the quantity and quality of education that will determine growth and well-being in the future (World Bank, 2007). The pace of improvement relative to comparator countries will be as important as the level and quality of education.

Over the past two decades, Egypt showed marked improvements in a number of social indices: infant mortality and malnutrition among children under 5 both decreased by half and life expectancy rose from 64 to 71 years.

The progress made in reducing illiteracy can be seen in Table 1.8. Nevertheless, serious problems remain, including gender inequalities. Almost half the female population (48%) have less than 6 years of schooling compared with 36% of men. Whereas 42% of males have educational attainment of Grade 12 or above, the equivalent proportion for females is 34%. Illiteracy rates among young women in Upper Egypt are 24%, twice the rates of their male counterparts (World Bank, 2013).

Table 1.8 Population distribution by educational status (10 years and older)

Educational status	1996 Census	%	2006 Census	%	Males (%)	Females (%)
Illiterate	17 646 025	39.4	16 806 657	29.6	22.3	37.3
Read and write	8 413 075	18.8	7 114 499	12.0	13.4	10.5
Adult education graduates	0	0.0	687 454	1.0	1.2	0.7
Less than intermediate certificate	7 911 817	17.6	11 134 399	19.4	20.8	17.9
Intermediate certificate	7 408 296	16.5	14 283 546	25.8	28.2	23.3
Above intermediate certificate	904 212	2.0	1 808 268	2.5	2.8	2.3
University certificate & above	2 547 995	5.7	5 476 704	9.6	11.1	8.0
Total	44 831 420	100.0	57 311 527	100.0	100.0	100.0

Source: CAPMAS (2012), *Egypt Statistical Yearbook, 2012*, CAPMAS, Cairo; CAPMAS, (2008), *Egypt in Figures*, CAPMAS, Cairo.

Income distribution

The Household Income, Expenditure and Consumption Survey (HIECS) for 2010/2011 showed that the poverty rate – those living on less than USD 2 per day – increased from 21.6% in 2008/09 to 25.2% in 2010/11. Conversely, the extreme poverty rate – those living on less than USD 1.25 per day – declined from 6.1% to 4.8% over the same period. Inequality remained constant over the last two years of the survey, with the Gini coefficient recorded at 31% in both 2008/09 and 2010/11. Although only a little over half of the population lives in rural areas, more than 78% of the poor and 80% of the extreme poor live there. These income disparities are reinforced by gaps in the social indicators: virtually all health indicators and literacy rates are worse in Upper Egypt than in Lower Egypt and worse in rural areas than in urban areas.

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Chapter 2.

Egypt's education system

This chapter outlines the historical influences on Egyptian education, and describes the scale and structure of the current education and technical education systems, and the characteristics of the teaching workforce. It also considers aspects of educational governance and other underlying issues, including inequities of provision and access, curriculum orientation, student tracking into general or technical education, and dependence on private tutoring.

Historical development of education in Egypt

In ancient Egypt, the few schools that did exist during the Middle and New Kingdoms, usually attached to temples or granaries, were exclusively for males training to be scribes and officials for the priesthood or civil administration. Only the daughters of nobles received an education in reading and writing; the majority of Egyptian women were trained at home by their mothers (David, 2015). Artists, draftsmen and sculptors had to convert texts written on *papyri* and *ostraca* into hieroglyphs on temple and tomb walls, and inscribe them on statues, requiring knowledge of both scripts (Heyworth-Dunne, 1939). Craftsmen as well as scribes had to master reading and writing, in hieratic and in hieroglyphic. The educational track that a student followed was typically determined by the position that his father held in society, although, students who showed particular ability could receive training for higher status positions.

Mathematics was used for measuring time, straight lines and Nile river flood levels, calculating areas of land, counting money, working out taxes and cooking (Rossi, 2004). The Egyptian calendar, one of the most accurate of the ancient world, was developed through mathematical skills. Maths was also used in building tombs, pyramids and other architectural marvels. Students did their arithmetic silently, but they recited their texts aloud until they knew them by heart. Then they attempted to write down what they had memorised. Educational principles are summarised in the so-called Books of Instruction (or the Instruction of Wisdom) which gave advice to ensure personal success consonant with the needs of the state and the moral norms of the day.

Education in ancient Egypt was mainly vocational. The trades were highly valued and yielded relatively high earnings and power. Young men did not usually choose their own careers but rather followed in the trades practised by their fathers. Herodotus and Diodorus refer explicitly to hereditary callings in ancient Egypt to pass on a father's function to his children. Writings from the Roman period contain some interesting data about the training of weavers and spinning girls. A test was probably given at the end of the apprenticeship. At this time weavers usually sent their children to be taught by colleagues in the same trade. If he failed to get his pupil through the whole course, the master undertook to return whatever payment the father had advanced for the apprenticeship (Heyworth-Dunne, 1939).

The arrival of the Greeks via the conquest of Alexander the Great over the Persians in 332 BC brought new ideas and ideals, learning, philosophy and art. The Ptolemies made Alexandria the intellectual metropolis of the world. They amassed the famous library with its 700 000 manuscripts. Alexandria was the resort of the most gifted artists and scientists of the time. Most of the Greek inheritance was preserved by the Alexandrians who assembled the treasures of ancient learning, copied them and transmitted them to the West. It was in Alexandria that Plotinus, Jamblichus, Porphyry and Hypatia meditated and wrote in the last great philosophical school to carry on the traditions of Plato.

Having conquered Egypt in 969 AD, the fourth Fatimid caliph, al-Mu'iz li Din Allah, transferred his ministers, elite civil servants and army from Mahdia in Tunisia to the newly formed city of Cairo (*al-Qahira*). With the building of the al-Azhar mosque (*Jami' al-Qahira*), a tutoring circle (*halaqa*) was formed in 975 for teaching *Isma'ili-Shiite* jurisprudence, initially based on the book *al-Ikhtisar*, which gave al-Azharite education its distinctive form. Other *halaqas* followed at the al-Azhar and other mosques (Walker, 2002).

In the year 998, al-Azhar moved a further step in becoming an Islamic “university” – an educational institute with powers to grant teachers credentials, the second in the world to be so established after the University of al-Karaouine in Fes, Morocco. The fifth Fatimid caliph al-'Azeez Billah approved a proposal by his minister, Ya'qub ibn Kils, to systematise al-Azharite education. This involved appointing a cohort of teachers, educated by ibn-Kils personally, following an organised curriculum and receiving regular payments from the government. *Halaqa* education in al-Azhar concentrated on Ismaili-Shiite beliefs, but gradually the curriculum was extended to include Arabic grammar, literature and history. *Halaqas* in other mosques that were established in the al-Azharite tradition included Arabic language, astronomy, mathematics, medicine and philosophy.

A millennium later, the Ottoman pasha Muhammad Ali, who ruled Egypt from 1805 to 1848, is credited with having created the “dual education system” in Egypt, remnants of which continue to this day. The dual model involved one system serving the masses attending traditional Islamic schools (*kuttab*) and a parallel secular system of schools (*madrassa*), funded by the government for elite civil servants. The *kuttab* taught students the basics of reading and writing through memorising and reciting *Qur'anic* verses. The *madrassa* were intended to offer a more modern pedagogy for developing intelligent, balanced citizens who would support Egyptian economic development. The extent to which they actually employed active pedagogy is not clear (Starrett, 1998). Influenced by the French model, Ali was mainly interested in “specialised” schools at higher levels for the preparation of professionals such as the School of Medicine, the School of Engineering and the School of Languages and Administration. Ali later established “high” schools (1816), preparatory schools (1825) and primary schools (1832).

During the period of British occupation (1882-1922), investment in education was curbed drastically and secular public schools began to charge fees. This was partly due to a financial crisis, but also to the British fears of civil unrest (Cochran, 1986). Education was fashioned to suit the needs of the British colonial administration. English was made the language of instruction in government schools. Employment in the civil service was guaranteed to all graduates of government secondary schools. However, graduates of *kuttabs* were barred from upward social mobility (Starrett, 1998). The population exploded between 1882 and 1907, growing from 7 million to 11 million people. Literacy rates plummeted to 5% of the population by 1922.

Foreign schools became popular among the Egyptian elite. The number of “mission” or “language schools” that used modern curricula increased significantly during this period (Barsoum, 2004). This system of elite “language schools” (*madaris lughat*) continues to play a significant role.

Under the conditions of limited independence, with British troops remaining in Egypt (1922-1952), Egyptian authorities regained some control over education policy. Arabic was introduced as the main language of instruction in government schools, while education in private language schools continued to take place in English or French (Cochran, 1986). The state budget for education was raised substantially. The 1923 constitution made primary education for all boys and girls between 6 and 12 years of age compulsory. Fees for public primary schools were abolished in the same year. At that time, the “dual system” was still in place: primary schools that were free of charge provided only the most basic skills and did not qualify students to carry on with their education. The fees for those primary schools which allowed for progression to the secondary level were only abolished in 1949, when a unified school system at the primary

level was created (Starrett, 1998). In 1950, the Minister of Education, Taha Hussein, introduced free education at pre-university level for all Egyptian citizens.

The nationalist policies that had begun after independence were continued after the forced abdication of King Faruk in 1952 and during the rule of Gamal Abdel Nasser. In 1962, universal free education was extended to include higher education. General access to free education and President Nasser's guarantee of employment in the public sector for all university graduates, which was announced in the same year, contributed to a rapid increase in student enrolments over the following decades (Barsoum, 2004). However, the state soon lacked the resources to meet the educational needs of the fast-growing population, and the quality of publicly provided education started to deteriorate (Cochran, 1986).

More and more unqualified teachers had to be hired and school facilities were insufficiently equipped for the masses of students they had to accommodate. The social status of teachers began to decline. Many schools started to operate in shifts, some two per day and others three per day/night, especially in densely populated urban areas (Barsoum, 2004). This trend continued under the rule of President Anwar Sadat (1970-1981). With Sadat's "Open Door Policy", which encouraged foreign investment generally, including in the education sector, a two-class education system was effectively re-established, similar to the one that had existed during colonial times. The majority income-poor population had to rely on the resource-poor public system, while wealthier families could educate their children in the growing number of private and "language schools" (*madaris lughat*), which became a prerequisite for obtaining a well-paying job in the emerging private sector of the economy (Cochran, 1986).

In 1981, the period of compulsory education was extended from six to nine years. Education policies under President Hosni Mubarak (1981-2011) were intended to create advancements in all areas of education, with the goal of developing the whole person as a means to elevate Egyptian society economically. Growth in enrolments continued to outpace the capacity of the system, and class sizes exploded. Growth in the number of graduates from universities and secondary schools far exceeded the capacity of the labour market to absorb them, causing graduate unemployment and underemployment to accelerate. The civil service had become overstaffed, and teaching in particular had had to absorb many graduates who would otherwise not have chosen this career. The graduate employment guarantee was phased out in the early 1990s (see Box 2.1).

Box 2.1 The graduate employment guarantee

Governments in the Middle East have felt responsible for providing employment for those with intermediate and higher education who cannot find a job in the private sector, partly as a means of dampening unrest among educated urban youth. This "last resort" option became a driver of household investment in education, given the relatively high pay in the public sector and non-wage benefits such as job stability and social security.

Egypt introduced its employment guarantee scheme for secondary and university graduates in the early 1960s. The scheme became increasingly untenable in the 1980s as graduate numbers swelled and public sector employment contracted. Provisions of the guarantee were gradually modified, such as increased waiting periods for secondary school leavers. By the end of the 1980s the waiting period exceeded five years. Since the early 1990s the job guarantee has become defunct.

Source: Binzel, C. (2011), "Decline in social mobility: Unfulfilled aspirations among Egypt's educated youth", IZA Discussion Paper, No. 6139, IZA (Institute for the Study of Labour), Bonn.

An agenda for comprehensive educational reform was detailed in the National Education Strategic Plan 2007-2012.

The structure of educational provision

The current structure of Egypt's educational system presents a complex and interdependent series of cycles (see Figure 2.1 and Box 2.2) accommodating the needs of a diverse population, unequally distributed regionally, and with wide variations in terms of socio-economic status and cultural differences.

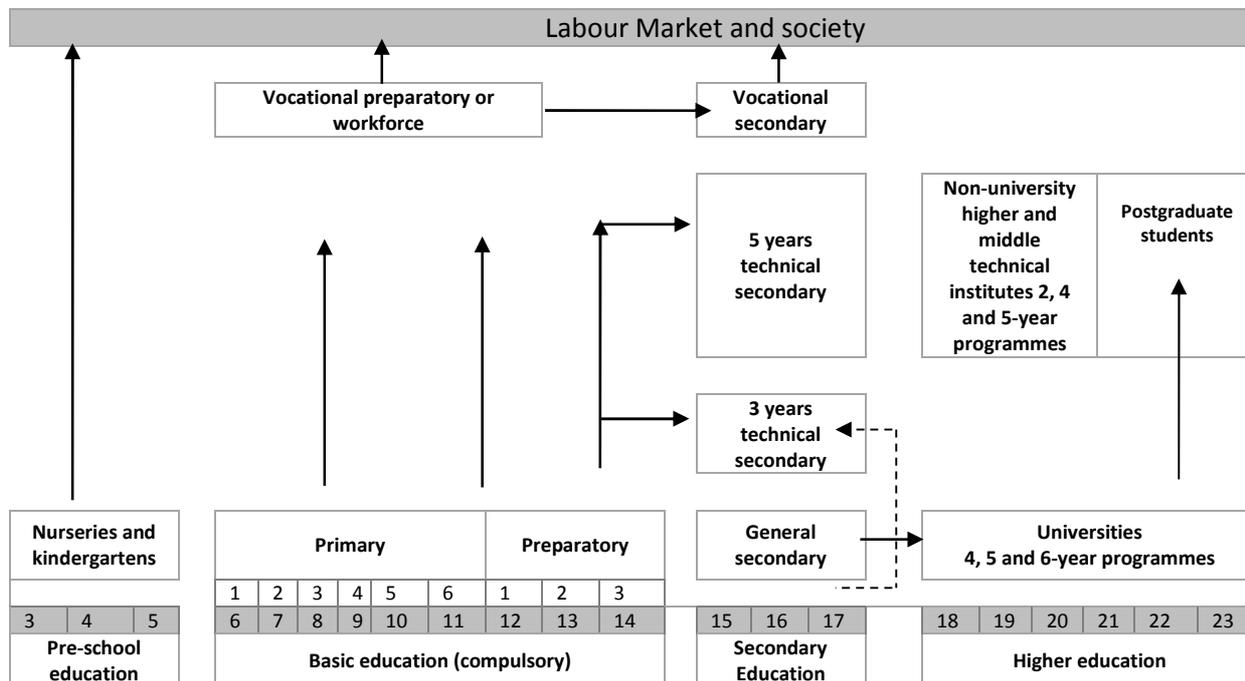
Pre-primary education is not currently part of the formal education system. Nevertheless, there are a number of providers offering some level of service at this stage of education. Current providers include the Ministry of Education, the Ministry of Social Solidarity, the National Council for Childhood and Motherhood (NCCM), the al-Azhar system, a number of international and local non-governmental organisations (NGOs), some co-operatives and the private sector.

The formal pre-university education system consists of three levels: primary (*ibtida'i*), preparatory (*'adadi*) and secondary (*thanawi*).

Prior to 1988, basic education consisted of six years of primary school and three years of preparatory education. After 1988, primary education was shortened to five years, while preparatory education remained at three years. Educational reforms also prolonged the school year from 32 weeks to 38-40 weeks, depending on Ramadan. As the number of years spent at school diminished, the real amount of study hours increased. Prior to the 1988 reforms, students attended school for 288 weeks over a period of 9 years, whereas afterwards they spent 304 weeks at school over 8 years. In 1994, a new curriculum was introduced that added more study hours per week during the 5 years of basic education.

Egypt aims to offer universal basic education for all children aged 6 to 14 years. To complete this cycle, students must pass an end-of-level examination at the end of primary education. It is a high-stakes exam, and those that do not pass after two attempts must either move to a vocational preparatory school or withdraw from education altogether. Those who pass this exam enter preparatory (lower secondary) education which lasts for three years. At the completion of this level students receive the Basic Education Completion Certificate. At the end of the preparatory cycle students must pass a national exam. Based on their performance in the preparatory level final exam, students are steered into a series of possible secondary education tracks: general secondary school, vocational/technical secondary institutions, or withdrawing from formal education.

Figure 2.1 The Egyptian education system



Source: Ministry of Education (2011), Pre-University Education System in Egypt: Background Report, Ministry of Education, Cairo.

Promotional examinations are held at all levels except in Grades 3, 6 and 9 at the basic education level, and Grade 12 in the secondary stage, which apply standardised regional or national exams.

Box 2.2 Stages and types of pre-university education in Egypt

Basic education (primary and preparatory): basic education (six years of primary and three years of preparatory) is a right for Egyptian children from the age of six. After Grade 9, students are tracked into one of two strands: general secondary schools or technical secondary schools.

General secondary education: this 3-year stage starts from Grade 10 and aims at preparing students for work and further education. Graduates of this track normally join higher education institutes in a highly competitive process based mainly on their results of the secondary school leaving exam (*thanawiya amma*).

Technical secondary education (industrial, agricultural and commercial): technical secondary education has two strands. The first provides technical education in 3-year technical secondary schools. The second provides more advanced technical education in an integrated 5-year model; the first three years are similar to those of the former type and the upper two years prepare graduates for work as senior technicians. Graduates of both tracks may access higher education depending on their results in the final exam. However, their transition rates are low in comparison to graduates of general secondary education.

Al-Azharite education: al-Azharite education follows the same direction as general education with regard to hours of study for each school subject. However, al-Azhar providers offer religious instruction as part of the curriculum.

Table 2.1 Schools, classes and students, by level of education and provider type, Egypt 2012/13

	Number of schools	Number of classes	Number of students	Number of teachers
Pre-primary	9 209	28 523	972 078	34 639
Government	7 446	20 149	725 835	23 945
Private	1 763	8 374	246 243	10 694
General primary	17 399	227 153	9 832 516	390 749
Government	15 587	200 340	8 959 343	356 259
Private	1 812	26 813	873 173	34 490
Preparatory	10 608	105 077	4 279 909	240 393
Government	9 154	95 698	3 858 897	225 993
Private	1 454	9 379	276 773	14 400
General secondary	2 874	36 913	1 390 262	102 235
Government	1 974	31 415	1 230 225	98 819
Private	900	5 498	160 037	5 416
Technical secondary	1 929	46 939	1 686 859	147 191
Agricultural	188	4 756	179 013	13 875
Commercial	794	17 200	651 720	36 874
Industrial	947	24 983	856 126	96 442

Source: Ministry of Education (2014), *Statistical Yearbook 2012/2013*, Ministry of Education, Cairo.

Table 2.1 shows that the pre-university education system – including government and private providers – caters in total for some 18.2 million students. The largest stage of education is general primary education, which accounts for 54.1% of total student enrolments.

Table 2.2 Al-Azhar institutes, classes, students and teachers, Egypt 2011/12

	Number of institutes	Number of classes	Number of students	Number of teachers
Kindergarten			63 842	3 747
Primary	3 465	33 457	1 158 721	67 718
Preparatory	3 131	15 051	484 594	41 833
Secondary	2 068	11 899	339 347	37 686

Source: CAPMAS (2013), *Egypt Statistical Yearbook, 2013*, CAPMAS (Central Agency for Public Mobilisation and Statistics), Cairo.

Table 2.2 shows that al-Azhar education system caters for over 2 million students. The al-Azhar system provides for 6.5% of pre-primary enrolments, 11.8% of primary enrolments, 11.3% of preparatory enrolments and 24.4% of general secondary enrolments.

Private schools cater for 25.3% of pre-primary students, 8.9% of primary students, 6.5% of preparatory students, 11.5% of general secondary students and 17.9% of technical secondary students (0.4% are industrial secondary students and 17.5% commercial secondary students) (Ministry of Education, 2014).

Types of public schools

There are two main types of government schools: Arabic schools and experimental language schools.

- **Arabic schools** follow the government national curriculum in the Arabic language. In addition, an English language curriculum is taught starting in the first year of primary education, and French language is added as a second foreign language beginning in general secondary education.
- **Experimental language schools** teach part of the government curriculum (science, mathematics and computer science) in English. They later add French as a second foreign language in the preparatory education cycle. An advanced English language curriculum is taught during all educational levels. Social Studies are always taught in Arabic. These schools admit students to Grade 1 at age seven, a year older than in regular Arabic schools.

Types of private schools

There are four types of private schools:

- **Ordinary schools** have quite a similar curriculum to that of the public Arabic schools, but cater more to the students' personal needs and in general dedicate more resources to the school facilities and infrastructure.
- **Language schools** teach most of the official curriculum in English, and add French or German as a second foreign language, although some schools use French or German as their main language of instruction. They are considered better than the other schools (better facilities), but their fees are much higher.
- **Religious schools** include the al-Azhar schools (administered by the Islamic al-Azhar University and open only to Muslim students), Catholic schools and schools of other denominations.
- **International schools** are private schools that follow another country's curriculum (e.g. the American, British, French or German systems). These schools offer the American high school diploma, the British International General Certificate of Secondary Education (IGCSE), the French *baccalauréat*, the German *Abitur* or the International Baccalaureate. Their qualifications must receive official government certification from the Ministry of Education in order for the students to be eligible to enrol in Egyptian universities. These schools are perceived as offering even better facilities and more extracurricular activities than regular private schools with higher fees. This notwithstanding, they are also perceived as providing a much easier level of education compared to the general official curriculum. Some Egyptian universities require higher grades than those of students coming from other types of schools, or an external high school certification such as SAT College Board test results (Ministry of Education, 2010).

Table 2.3 shows a comparison of the net intake in each type of school between 2002/03 and 2008/09. A slight increase can be seen across all types of private or more “elite” school registration, alongside a trend decline in conventional government school enrolments.

Table 2.3 Share of intake by type of school (%)

Academic Year	Type of School				
	Public	Experimental	Private Arabic	Private language	TOTAL
2002/03	79.7	1.0	3.8	0.6	85.1
2008/09	78.4	1.4	4.1	0.7	84.6

Source: Ministry of Education (2011), Pre-University Education System in Egypt: Background Report, Ministry of Education, Cairo.

The role of the Ministry of Education

The role of the MOE is mainly developing national policies, legislation and standards, based on the reports coming out of governorates. These roles include monitoring and evaluation of policy implementation, developing curricula, and setting up a system to develop and manage human resources. The stated intent is to fulfil these tasks in a way that emphasises decentralisation and transparency. In addition, the MOE establishes policies to provide professional incentives for teachers to improve their level of professional work and educational outcomes. Accordingly, the current structure of the MOE is focused on six specific tasks: 1) policies and strategic planning; 2) monitoring and evaluation (quality management); 3) curriculum and education technology; 4) information and technology development; 5) developing human resources; and 6) financial and administrative affairs. The ministry is responsible for making decisions about the education system with the support of three centres: the National Centre of Curricula Development, the National Centre for Education Research, and the National Centre for Examinations and Educational Evaluation (NCEEE). Each centre has its own focus in formulating education policies with other state-level committees.

A separate ministry, the Ministry of Higher Education (MOHE), supervises the higher education system, including universities with faculties of education which prepare teachers for Egyptian schools. The level of autonomy accorded to universities appears to constrain the ability of the MOHE to bring into any alignment the government’s efforts to raise the quality of the stock and flow of the teaching workforce.

The role of governorates (muddiriyas)

The role of the *muddiriyas* consists mainly of organisational, analytical and monitoring tasks, such as compiling comprehensive situation analyses of the districts’ performance in light of standards determined by the Ministry of Education, providing technical support to the districts, developing the educational plans at the governorate level, co-ordinating the decentralisation of the curriculum, managing the printing and distribution of books, and maintenance of the educational buildings with the *idas*. The *muddiriyas* are responsible for developing an annual report into the state of education in the governorate which registers and analyses the variables and learning outcomes in light of the districts’ reports. They also provide teacher-training programmes, and they are

responsible for the development of end-of-cycle examinations for primary school and preparatory school levels, based on the directives and blueprints developed by the Ministry of Education through the work of the National Centre for Examination and Education Evaluation.

Technical and vocational education and training

Formal technical and vocational education and training (TVET) in Egypt is provided through preparatory vocational education, secondary technical and vocational, and higher education in technical colleges (formerly known as Middle Technical Institutes), and Institutes of Industrial Education (IECs). Technical secondary education and its agricultural, industrial and commercial streams represent the bulk of TVET supply in Egypt – some 1.6 million students, and around 140 000 teachers.

Secondary school TVET

The Ministry of Education (MOE) administers about 1 600 technical and vocational schools that lead to a 3-year diploma or 5-year advanced diploma. Until recently, government policies have limited access to higher education by tracking more than 60% of preparatory school graduates into technical secondary schools, whose graduates mostly enter the labour market directly and have very limited opportunities to access universities.

Poor employment outcomes for technical and vocational students, coupled with the higher unit cost of the sector, led the government to reconsider the policy of tracking into technical education. As part of broader reforms in education, the MOE has begun to cut back the technical and vocational stream, beginning with the 350 or so commercial schools. Between 2002 and 2006 these commercial schools were converted to general education. The curricula of most technical secondary schools are being redesigned to place greater emphasis on general subjects and to reduce the hours spent on technical and vocational subjects.

For those students following the technical/vocational secondary route, the most common outcome is direct entry to the workforce (95%) at the end of their secondary studies. A small minority of technical school students (the top 5%) attend further studies at higher education institutes, or occasionally further university training.

While technical education is the mainstream option, vocational education represents a small segment of the sector. Comprising vocational preparatory schools and secondary vocational education, it educates around 200 000 students (Abrahart, 2003). At secondary level it operates only in two fields – paramedical (3-year schools) and tourism-hotel (3- and 5-year schools) aimed mainly at graduating skilled workers, often performing manual work (MOE, 2011). In Egypt's vertically segmented education system, vocational education is considered as a "third choice" after the general secondary and technical education options. Students who were already in the vocational track (in vocational preparatory schools, at the basic education level) or who failed general preparatory school can only join vocational secondary schools. Only those who succeed with higher marks can enter the general or technical education stream, which provide access to higher education. Information on the employment outcomes of vocational education does not seem to be available.

Beyond mainstream technical and vocational education there are also a number of apprenticeship schemes and experimental models, although at a small scale. Most of these can be delivered formally and non-formally, through both public and private providers.

Vocational education and training pathways

Apart from the Ministry of Education, a large number of ministries (17 in total) offer vocational training for various target groups specific for their sector. This form of training is often associated with Vocational Training Centres (VTCs). There are no accurate data on this sector and various reports show different, incomplete or not comparable figures. While UNDP (2010) estimates that around 1 200 VTCs belong to 7 ministries, another report (El-Ashmawi, 2011) lists some 800 training centres belonging to 12 ministries (including NGOs and others), providing formal and non-formal training for some 480 000 participants through 13 000 trainers in 2010. The duration of vocational education and training (VET) programmes ranges from one month to two years of training, mostly technical training and usually centre-based. Generally, the longer programmes target skilled workers, while shorter programmes are designed for semi-skilled occupations and skills upgrading. Although target groups vary, delivery often overlaps but there are no common training standards or certification requirements (UNDP, 2010). In most cases certificates are issued by the ministry providing the training. Among the main providers are the Ministry of Industry, Trade and Small and Medium-Sized Enterprises; Ministry of Manpower and Migration; Ministry of Housing; Ministry of Agriculture; Ministry of Tourism; and Ministry of Health and Population. In addition, there are several agencies like the National Authority for Quality Assurance and Accreditation of Education (NAQAAE), the Social Fund for Development and sector-specific institutions offering training (e.g. training councils within industry, building and construction, and tourism). The Egyptian Tourism Federation and the Tourism Training Council, for instance, have launched major training initiatives for the sector (training of fresh graduates, development of hospitality education and workforce skills development). Internationally accredited certificates are awarded in co-operation with international training and education associations (ETF, 2011).

Increasingly, private firms are establishing their own in-company training units. Community-based training centres are offering training to enhance employability for women, the unemployed and disabled (ETF, 2003). These private and community initiatives currently represent a small proportion of the national training effort.

Work-based learning and apprenticeship schemes

Formal work-based learning programmes are estimated to cater to 2% of secondary technical education students (ETF, 2009).

Informal apprenticeships

In several sectors such as construction, retail and some services, informal apprenticeships still prevail (as they did in ancient times). Such apprenticeships have only verbal agreements (a social contract instead of a legal contract) and no structured learning, duration or stages. Informal apprenticeships are also not combined with school-based learning and do not lead to a formal qualification or certificate (ETF, 2009). They are also referred to as “traditional apprenticeships” since they are deeply rooted in Egyptian history. Traditionally they were the major form of skills formation until VET institutions expanded in the 20th century. Skills are transmitted within the family or clan and are sometimes open to apprentices from outside the family or kin group. The International Labour Organization (ILO) has a policy to upgrade informal apprenticeships (ILO, 2012). Pilot projects in Egypt and other countries are developing the off-the-job component and institutionalising the on-the-job component of these apprenticeships, so as

to monitor skills acquisition through skills logbooks and skills assessments (Azzoni, 2009). Data on the scale and characteristics of informal apprenticeship in Egypt are not available. The team gained the impression that they absorb some of those who are “pushed out” of general education. Informal apprenticeships are prevalent among many illiterate low-income families who often must pay the master craftsman for the privilege of teaching a useful trade (UNDP, 2010).

Ministry of Industry, Trade and Small and Medium-Sized Enterprises' alternance scheme

The oldest formal apprenticeship-type scheme (*talmaza sina'eyah*) in Egypt, operating from the mid-1950s, is organised by the Productivity and Vocational Training Department (PVTD) of the Ministry of Industry, Trade and Small and Medium-Sized Enterprises (MOITS, previously the Ministry of Industry and Foreign Trade). With around 22 000 participants annually (representing just over 1% of upper secondary VET students), it remains small scale but nonetheless represents one of the larger schemes in Egypt. It focuses exclusively on the industrial sector, mainly large public enterprises (500 enterprises are involved), encompassing trades such as mechanical and electrical maintenance, plumbing, leather, weaving and textiles, plastics, printing, and petrochemicals. Young people typically enter at 15 years of age. Selection is managed by the PVTD and VTCs, which allocate trainees to enterprises (which have no role in selection). The scheme lasts for three years. The first two years are spent in a VTC and in the third year students spend the majority of time in an enterprise, with one day a week in the VTC. The content is strongly vocational and practical: about one-third of total learning time is spent in the enterprise, one-third on practical work in the VTC, one-fifth on vocational theory and slightly less than one-tenth on general education. Graduates acquire a certificate issued by MOITS which is equivalent to the one obtained by graduates from technical secondary schools. It can thus qualify them within the general limits for higher education, can shorten the duration of military service and leads to defined pay grades in the civil service. Based on a training contract (between the participant, PVTD, VTC and employer) trainees are paid a small allowance, perhaps 15-20% of an adult worker's wage, to help them with transport and food costs (ETF, 2009).

Ministry of Education's apprenticeship scheme

The MOE runs a similar scheme in terms of contract and allowances for students, although with around 7 400 participants it is much smaller. It is focused on the public and industrial sector, including construction and service-sector areas such as commerce and hotels but also agriculture and fishing. Some 35 larger public-sector enterprises affiliated to 25 ministries and public-sector institutions participate in this scheme. Participants spend two days a week in a VTC or secondary technical school and the remainder in the enterprise. In total, around 25% to 30% of the learning time is devoted to a combination of general education and vocational theory, around 10%-15% to practical work in a VTC, and the remainder to work and training within an enterprise. Graduates receive a technical secondary school certificate, with the best achievers having the chance to enter higher education.

Dual system (previously the Mubarak-Kohl Initiative)

Modelled on the German dual system (a TVET model which takes place in both schools and enterprises), the Mubarak-Kohl Initiative (MKI) involves some 1 800 private firms which are affiliated to the Egyptian Union for Investors' Associations (EUIA). Over 80% of participants are in industrial companies, more than 10% in the service sector and a small number in agriculture. Trainees are selected by specially created Regional Units of the Dual System, sometimes involving individual companies as well. In its early phase, partly for marketing purposes, the MKI targeted students with middle-class backgrounds. When too many continued to higher education, it shifted its focus to trainees from lower socio-economic backgrounds.

During the 3-year programme, students spend two days per week in a VTC technical vocational school and the rest within an enterprise. Roughly 25% of the total time is devoted to a combination of general education and vocational theory, 15% to practical training in a training centre or technical secondary school, and the remainder to work and training within an enterprise. According to MOE data, the number of students enrolled under the dual system almost doubled from 14 000 to over 25 000 between 2009 and 2012. Similarly the number of schools increased from 59 to 152 over the same period (ETF, 2013). The scheme is a recognised part of secondary technical education options. Graduates have to sit the technical secondary school diploma examination, leading to a qualification awarded by MOE. In addition, they are awarded a practical experience certificate offered by the EUIA and registered by the Arab-German Chamber of Commerce.

Employment outcomes are positive: about 86% of graduates have so far been offered jobs in the companies where they received training, but only 56% took up the offer, a good number still preferring to pursue the higher education track (ETF, 2009). Representatives of the MOE technical education sector are confident that this scheme has the potential to grow to provide for 10% of secondary VET students in the long term. The draft VET strategy has set a target by 2017 to launch a revised apprenticeship scheme with a minimum of 10 000 new apprentices recruited (TVET Reform Programme, 2012). It remains unclear if this refers only to MKI apprenticeships, or includes other schemes as well.

Continuous Apprenticeship

The Continuous Apprenticeship scheme, developed by the International Labour Organization (ILO) in 2002, runs in co-operation with Egypt's Ministry of Manpower and Migration and closely involves employers and other key stakeholders. Starting in three governorates it was later extended to six governorates but still had a small number of participants (around 350 in 2008). The design featured social goals, based on factors such as high local rates of poverty, illiteracy and unemployment. Occupations covered include mechanical and electrical maintenance, welding and metal construction, carpentry, garment making, and construction. Students spend the first two years in practical instruction in training centres for some 24 hours a week, and for one to two years undergo on-the-job training in an enterprise. Similar to other schemes, a contract is signed by their employer, parent or tutor and a public authority. Graduates receive a diploma that is equivalent to those of graduates from technical secondary school (ETF, 2009).

French alternance model

As part of a European Union funded project (the TVET Reform Programme) the MOITS signed an agreement in 2008 with the MOE to reform 100 technical secondary schools, in partnership with the Industrial Training Council (ITC). This initiative included the introduction of a new pathway adopted from the French *alternance* education model. Technical secondary education students alternate between schools and companies for modules or blocks. Students can complete modules related to specific jobs at school and the workplace. At the end a certificate is obtained from the Enterprise TVET Partnership (ETP) and the related chamber. Upon graduation students have a number of these certificates in addition to the diploma issued by MOE. Dropouts thus at least have a certificate approved by a body representing industry, albeit not accredited. The model also introduced career guidance and offers incentives to motivate trainees to continue at the training company instead of pursuing further education. The first phase of the project covered 41 schools in 5 main industrial sectors (ready-made garments, engineering, food processing, building materials and furniture production) in 12 governorates where there is strong concentration of industry related to these sectors. Industry is closely involved through ETPs in all aspects of the reform: selecting schools, developing curricula, training teachers and specifying equipment (El-Ashmawi, 2011). The first cohort of graduates has been well received by industry.

Schools within enterprises

A recent initiative of the MOE currently has some 11 schools embedded in larger companies, such as the Arab Contractors, BTM (Bishara Textile and Garment Manufacturing Company) and MCV (Manufacturing Commercial Vehicles). The latter is an internationally linked Egyptian manufacturer of trucks and buses with around 6 000 employees. MCV decided to run two in-house VET tracks (one technical, the other administrative) as students were found to adjust more readily to the more disciplined culture of the firm when they start their training in the firm rather than a school environment. The company selects the students. Trainees are given a government payment and an additional bonus, based on their performance. The “off-the-job” teachers are appointed by government from public schools but they work on site (El-Ashmawi, 2011).

Several other initiatives aiming at strengthening linkages between the private sector and secondary schools (e.g. Arab Contractors Company) offer similar or modified schemes. For example, in the fast-food and food-processing industry, one of the largest companies in Egypt, Americana, created a specialisation in fast food which was new to the education system. Governed by co-operation agreements with the related ministries, the course is implemented in technical secondary and post-secondary technical colleges. The company develops curricula, provides practical training in their restaurants, funds laboratories and kitchens in schools, pays the students a monthly allowance, and issues a certificate of experience to graduating students (ETF, 2011; MOE, 2011).

A number of VET institutions, schools and training centres try to arrange some work-based learning for students during the summer vacation, often as part of the study plan. However, implementation of this is not enforced because it is extremely difficult to find enough workplace training opportunities for the large number of students in the VET system. Many of these initiatives are not apprenticeship schemes but rather a shop-floor or work-tasting experience for students (ETF, 2009).

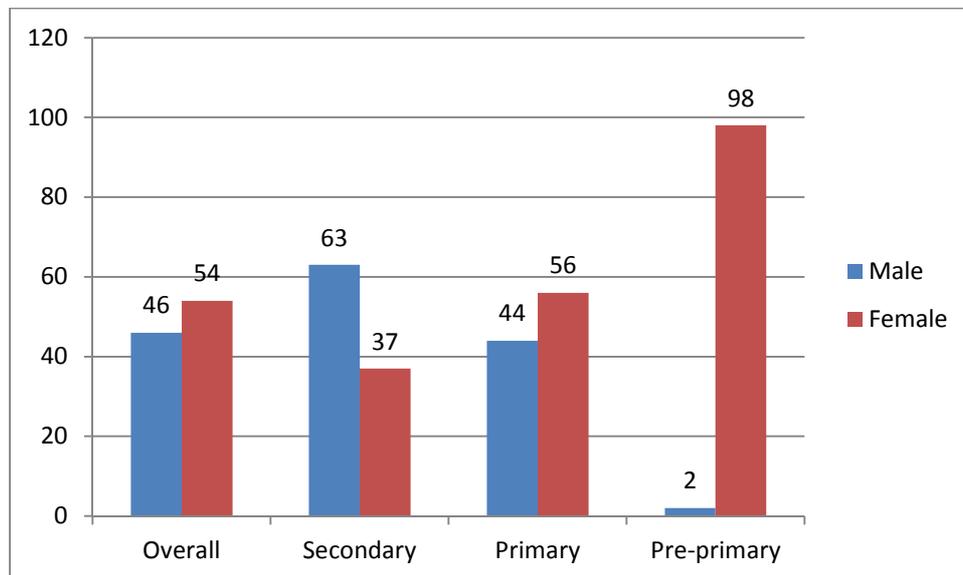
The education workforce

Current teaching workforce

As shown in Table 2.1 above, there are 686 945 teachers in the formal education system, including public and private schools. There are another 146 824 teachers in the al-Azhar schools. There are an additional 30 280 pre-school teachers in public and private institutions and 2 846 in al-Azhar kindergartens. Altogether, the teaching workforce across all education sectors (but, significantly, excluding TVET) totals 868 895 personnel. The team was unable to obtain statistics on the teaching workforce in technical schools although the draft National Strategic Plan for Pre-University Education 2014-2030 suggests a student-teacher ratio in technical secondary education of 9:1 compared with 12:1 in general secondary education. The site visits also suggested that technical schools are more intensively staffed than general schools, although the division between teaching and support staff is unclear. On a conservative assumption that technical secondary schools have the same ratio of teachers to students as general secondary schools (0.08), there would be at least 131 000 technical secondary teachers. Thus the total Egyptian teaching workforce currently is of the order of 1 million personnel.

Teachers in government schools are part of the Egyptian civil service. The current (2011) government-sector teacher workforce is one of the few sectors where women have proportionate representation in the workforce. As Figure 2.2 shows, women account for 54% of the public-sector teaching workforce overall. Women make up 98% of pre-primary teachers and 56% of primary ones, whereas they represent only 37% of general secondary teachers (excluding technical secondary teachers, whose profile is overwhelmingly male).

Figure 2.2 Distribution of the government-sector teaching workforce by sector and gender, 2011 (%)



Source: Ministry of Education (2011), Pre-University Education System in Egypt: Background Report, Ministry of Education, Cairo.

Table 2.4. Student-Teacher ratios for government primary, preparatory and general secondary schools by governorate, 2010-11

Governorate	Primary	Preparatory	General secondary
ElWadi ElGidid	5.9	4.9	6
Port Said	14.5	12.2	8.4
North Sinai	15.3	10.1	6.6
Damietta	16.2	11.8	8.4
Luxor	18.9	21.4	13.7
South Sinai	18.9	8.4	5.7
Red Sea	19.2	12.3	8.8
Aswan	20	17.4	11
Suez	20.3	16.1	9.3
Menoufia	22.4	16.2	11.1
Dakahlia	22.6	16.5	11.8
Sharkia	24.5	18.1	9.2
Kafr El-Sheikh	24.7	17.1	12
Ismailia	24.9	18.5	10.1
Qena	25	23.3	10.9
Suhag	26.1	21.2	13.8
TOTAL	27.1	19.3	12.2
Beni-Suef	27.8	24.4	13.8
Cairo	28.1	15.4	11
Kalyubia	28.1	24.7	15.2
Gharbia	29.3	16	12.3
Behera	30.3	23.4	14
Helwan	30.5	22	15.9
Asyout	30.8	24.9	14.5
Fayoum	32.1	27.2	13.3
Matrouh	33.8	30.6	14.2
Alexandria	33.9	15	11.6
Giza	34	22.1	17.6
Menia	39.6	23.8	12.5
06-Oct	46.7	36	22.8

Source: CAPMAS (2012), *Labour Force Survey 2012*, CAPMAS (Central Agency for Public Mobilisation and Statistics), Cairo.

The mean student teacher ratio for Egypt at the general secondary level (12.2) compares favourably internationally, even against many developed economies. The average preparatory ratio (19.3) and, especially, the mean primary ratio (27.1), however,

are on the high side. Nevertheless, there is no obvious need for a major effort to boost teacher numbers in Egypt to serve the current national student cohort.

As shown in Table 2.4, excluding the outliers of ElWadi ElGidid and Port Said, the primary student teacher ratio ranges from a low of 16.2 in the governorate of Damettia to a high of 46.7 in the governorate of 6 October. To bring student teacher ratios in 6 October up to the mean, the number of teachers would have to be increased from 7 453 to 12 844 – an addition of 5 391 or a rise of 72%. Conversely, to bring Menoufia down to the national mean, the number of teachers would have to be reduced from 11 415 to 6 840 – a fall of 4 575 or -40%.

For the preparatory stage, and excluding the governorates with enrolments below 20 000, the student teacher ratio ranges from a low of 11.8 in Damietta to 36.0 in 6 October, with the national mean at 19.3. If Cairo were staffed to the national mean its number of teachers would fall from 16 924 to 13 495 – a loss of 3 429 or -20%.

For the general secondary stage, excluding the governorates with enrolments below 25 000, the student teacher ratio ranges from a low of 9.2 in Sharkia to a high of 22.8 in 6 October. If Cairo were staffed at the national mean it would lose 1 177 teachers (-10%).

These simple calculations indicate there is some scope for improving the allocation of teachers within Egypt. The team was advised in its discussions with several *muddiriyas* and *idaras* that there are significant discrepancies within as well as among governorates in the allocation of teachers and other resources. The team was also advised that there is no under-supply of teachers in aggregate but rather a poor distribution of the national teacher pool. Thus some classes have much higher ratios of pupils to teachers than 40:1 at the primary level while others have well below 20:1.

In 2010, the average number of students per class in government schools was 43 for primary, 40 for preparatory, and 37 for general secondary (CAPMAS, 2012). These average class sizes are much larger than the student-teacher ratios shown in Table 2.4 (27.1, 19.3 and 12.2 respectively). The difference may be explained by the large proportion of the teaching force in administrative positions. At the preparatory level, the teacher to administrator ratio is almost 1:1. The number of permanent teachers recorded by CAPMAS as working in public schools in 2012/13 totaled 867 051. However, the number of teachers working under a contract, that is, those actually teaching in classrooms, totaled a mere 115 281, or 13.3% of the total number of teachers employed in the government school sector.

Teacher quality

The problem of large class sizes is exacerbated by the relative decline in full-time professional teachers in the classroom. As a consequence of the recruitment freeze on teachers for government schools, the proportion of teachers on non-permanent contracts have risen to around 45% (Ministry of Education, 2010). These teachers are meant to be engaged on a trial basis. However, without any systematic assessment or selection examination, they may remain in the system indefinitely before being confirmed.

Future teacher quality will be affected not only by the capacity of current practising teachers to upgrade their knowledge and teaching skills, but also by the calibre of new entrants to the profession.

Entry into university is determined by the score (*magmu'*) at the *thanawiya amma* on completion of general secondary schooling. This is the only determining factor for

university entrance, with the prestigious faculties like medicine, pharmacy and engineering taking the best students. Admission into medical school requires a secondary school exam grade of 96%-98%. In contrast, to be admitted into the faculty of education, the average grades required are between 80-88% for a science and mathematics major, 75%-85% for literature majors, and as low as 60%-70% for the faculty of law. See Chapter 5 for more detail on the pre-service training of teachers in Egypt.

Graduate teachers from the faculty of education complete a graduate degree programme—BSc (Ed) or BA (Ed) – or an education diploma in a given subject speciality. Overall, 68% of all teachers in Egypt have a bachelor's degree or above, with 78% of those having graduated from education faculties and 22% from other faculties. Of those without a degree qualification, 84% have some educational training while 16% have no training (Ministry of Education, 2010).

Demand for teachers

The key determinant of the demand for teachers is student enrolments. While the intake rate at Grade 1 is dependent on the population of children of school age, progress to subsequent levels is determined by transition policies and other internal efficiency measures such as repetition rates, and, most importantly, on the physical availability of spaces. The net intake rate in 2008/09 was 85% with the public school system absorbing 78% of the intake, suggesting that a significant number of school-age children do not have access to education. Reaching the optimal target of all children being in school would require either additional teachers or a more efficient redistribution of the current teaching workforce. Resolving the disparities in enrolment between governorates should serve as a basis for a more equitable distribution of teachers. It is acknowledged that those children currently out of school are from the poorest, less-urbanised, least motivated and most vulnerable backgrounds (MOE, 2010) and hence constitute a major challenge for the system.

Teacher supply and demand balances

According to the Ministry of Education, between January and December 2012, 25 214 teachers retired on the grounds of age. In 2010/11, there were 28 955 graduates from teacher education faculties, including al-Azhar facilities. This suggests a net surplus of 3 741 new teachers that year. However, a proportion of these graduates leave teaching after getting married or enter careers other than teaching. The number of teachers reaching retirement age has also been increasing; in 2014 some 32 286 will have reached the age of 60, the retirement age. As enrolments expand, the current rate of graduate entrants to the teaching workforce would appear to be falling moderately below the levels needed. However, there are a number of graduates not yet employed in teaching, and their availability could ameliorate annual shortfalls in the number of graduates. The team was unable to ascertain the real balance between teacher demand and supply in quantitative terms. Of more concern were qualitative supply issues, where students go into faculties of education by default, meaning they have low levels of motivation for teaching and graduates may lack capacity and confidence in critical areas needed for student skills formation, such as in mathematics (see Chapter 5 for more details). It would be useful for a national audit to be conducted of teacher supply and demand balances, disaggregated by level and field of education.

Structural elements shaping the market for teachers

Recruitment of teachers is undertaken by the Central Agency for Organisation and Administration (CAOA) but teachers are managed by the respective provincial governorate. Examination-based recruitment was dropped in 1994, with the subsequent disappearance in practice of the career-based performance system. The current system's management does not link performance and merit with career advancement and promotion.

Membership of the teachers' union, the Teachers Syndicate, is mandatory for all teachers and hence the union has coverage of teachers from government, private and al-Ahzar schools. The main issues of concern for the syndicate are teachers' salaries and their professional development. The syndicate opposes performance-based assessment of teachers while condoning the transfer of low-performing teachers to administrative responsibilities and maintaining their benefits.

Technology in education

While Egypt strives to allocate as many computers to pedagogy as possible, its efforts to spread a culture of ICT-assisted instruction are constrained by a basic lack of devices and Internet connectivity (Broadband Commission, 2013). Although 91% of the computers in primary schools and 96% in preparatory and upper secondary schools are devoted to learning, computer resources are greatly overstretched, with 140 primary pupils sharing a single computer on average (Table 2.5). The national policy has been to provide computer laboratories in schools at the rate of 1 laboratory for every 15 classes (Hamdy, 2007). Despite this, computer laboratories are relatively scarce, in just 12% of primary schools, 42% of preparatory schools and 23% of secondary schools. More recent data were not available to the team. In addition, only a low percentage of the computers that are available are connected to the Internet. Just 25% of the computers in primary and preparatory schools are online, and 11% of computers at secondary level. Fewer than half of Egypt's educational institutions have an Internet connection, compared with more than two-thirds in Oman and Jordan.

Table 2.5 Student-to-computer ratio and average computers per school, Egypt, 2009-10.

School level	Students per computer	Average computers per school
Pre-primary	54.33	1.46
Primary	141.18	3.95
Preparatory	25.65	17.19
General secondary	27.77	19.64
Technical and vocational secondary	28.45	26.05

Note: according to MOE (2011), there are around 278 000 computers in some 40 000 schools. This averages about 7 computers per school.

Source: Ministry of Education (2010), *Conditions of Education in Egypt 2010. Report on the National Education Indicators*, Ministry of Education, Cairo, pp.15, 152-3.

Given that connectivity is a prerequisite for the integration of ICT-assisted instruction using the Internet, an analysis of basic Internet connectivity is key to determining a country's level of preparedness. Increasingly, broadband connectivity and high bandwidth are needed to effectively support instruction over the Internet, particularly for two-way synchronous communication (e.g. video conferencing), streaming videos, or using online

applications and databases that have high capacity requirements (Broadband Commission, 2013). Nevertheless, narrowband Internet connections in certain situations might be considered a temporary solution for institutions that would otherwise be unconnected.

Older forms of ICT-assisted instruction are being challenged and enriched by the Internet. In the 1980s, computer-assisted instruction (CAI) was based on programmed learning or “drill and practice” software but both CAI and Internet-assisted instruction (IAI) have evolved at an exponential rate, combining with older ICT tools to create new platforms for learning and teaching. Many new devices have been specifically designed for or are being adopted into classrooms, such as laptops (regular and low-cost), interactive whiteboards, tablets, e-readers and smart phones. One of the hallmarks of both CAI and IAI is the increased opportunity to interact with teachers and other pupils in ways that were not possible through one-way radio and television broadcasts. This interaction may enhance educational quality if used appropriately. On the other hand, the increased level of technical sophistication associated with CAI and IAI means start-up and maintenance costs are substantially higher than using older technologies such as broadcasts. Despite this, it is necessary to consider the gains that CAI and IAI might have in schools, given their potential impact on learning, performance and motivation of both students and teachers, as well as on school management and system-wide organisation.

Although the number of computers available is not keeping pace with enrolment, and Internet connectivity is lagging behind, the country nonetheless continues to emphasise the integration of CAI into schools. As such, 86% of primary and 96% of secondary educational institutions have access to this type of ICT-assisted instruction. Older types of ICT-assisted instruction are not a priority in Egypt, even though large populations live in rural or remote areas where they are frequently found to serve a useful function. Radio-assisted instruction (RAI) is available in 40% of primary and secondary schools, while television-assisted instruction (TAI) is available in 59% and 55% of primary and secondary schools, respectively, often through the use of mobile technology equipped with transmission receivers to the Egyptian Satellite (Nile Sat) television broadcasts, which air educational programmes for children and general literacy programmes. There are no data available on the provision of IAI at the institutional level in Egypt, but given the low proportion of schools with access to the Internet, it is unlikely that IAI is available in more than a half of all schools in Egypt.

Issues in Egyptian education

Five major issues gained the attention of the team: 1) the content-based nature of the curriculum and associated pedagogy; 2) the persistence of inequalities; 3) the adverse consequences of the tracking system; 4) the dependency on private tutoring; and 5) the fragmented nature of governance.

The content-based nature of the curriculum and associated pedagogy

Egyptian schooling is dominated by an approach to instruction that is teacher-dominated, repetitive, and concentrates too much on rote learning and literal recall of information. As discussed in more detail in Chapter 5, when teachers ask questions in the classroom they are mostly closed, lower-order questions requiring direct factual replies, often in unison by whole classes. The limitation of the learning experience is not only that what students are taught bears little connection to real life and

contemporary circumstances, it is that the way most students are taught and how they are learning is not developing their cognitive skills.

A student in an international school in Cairo, reflecting on his time in a government school there, noted: “The curriculum here requires you to concentrate and revise. But in the national system, I just had to go home and memorise a lot of facts. In the government-set studies I have to know a lot of details that I would not normally need. I have to study lots of dates, lots of city names... but in the Canadian-set studies I learn stuff I can retain, benefit from and convey to others” (cited in Loveluck, 2012).

The persistence of inequalities in Egyptian education

Not only has access to basic and secondary education in Egypt been expanding, but importantly, the completion rate for preparatory education (the end of compulsory education) has risen from 43% to 69% between 1998 and 2006. The secondary completion rate has also risen over the same period from 38% to 65%. The greatest expansion has occurred for girls, youth in cities, and the children of educated parents.

Meanwhile, a significant proportion of children still do not attend school. In 2006, some 26% of girls and 16% of boys had never enrolled in school. The never-enrolled proportion was higher for children in rural areas (34% for rural Upper Egypt and 24% for rural Lower Egypt), compared with 10% for urban areas. Concurrently, among those who are participating, there are lower rates of completion of basic education by girls generally, and rural students both male and female. The expansion of post-basic enrolment has benefitted youth from more privileged backgrounds, and there is evidence that gaps in attainment between the least and most advantaged have widened in the first decade of the 21st century (Ersado et al., 2012). Chapter 7 considers particular aspects of educational inequality.

The adverse consequences of the tracking system

The tracking of pupils into technical or general education is deeply embedded in Egypt's cultural traditions, as the foregoing brief history of Egypt's educational development shows. Tracking is based on high-stakes examinations in Grade 6 and Grade 9 of basic education, and in Grade 12, for admission to university courses (the issues of assessment are considered in detail in Chapter 6). It has become a distorting influence on student learning, and a major barrier to equality of opportunity. It reflects an outdated view of employment prospects and is unfit for Egypt's changing labour market requirements.

Currently, about 40% of secondary school students attend technical secondary schools. TVET participation has continued to decline between 2010 and 2014, falling by almost 4% between 2012 and 2014 (ETF, 2015). This track is regarded as less prestigious than the general secondary track which normally leads to university access. The technical track is a terminal one for the majority of participants. More than three-quarters of children from the poorest quintile families enter the technical track, compared with about one-quarter from the wealthiest quintile (Shady, 2013). The labour market outcomes for graduates are considered in Chapter 4.

The tracking system functions to exacerbate the unequal provision of resources for student learning across Egypt:

“Inequalities in learning opportunities appear at early levels, and result from both heterogeneous family cultural and financial resources, and the institutions of

the Egyptian schooling system, with tracking reinforcing unequal family resources and early learning gaps.” Ersado et al. (2012)

Those who can afford it can avoid forced tracking by continuing their education in private schools and universities. Even in government schools, students can sometimes make up for a low score by paying extra fees (Barsoum, 2004). This “service system” (*nizam al-khadamat*) allows students with low scores to attend classes in the afternoon shift of a government school for an annual fee of around EGP 400-800.

The background report (Ministry of Education, 2011) prepared for this report noted “concerns about inequities underlying enrolment in the general secondary track”. It pointed to the fact that “Egypt has a very high proportion of secondary students in technical and vocational education compared to other countries with similar income levels”. It also noted that technical education in secondary schools “is of questionable quality and many students do not appear to learn the trades for which they are being trained”. The background report indicated that the Education Ministry is working to ameliorate the adverse effects of the tracking system. It has proposed a three-pronged strategy:

1. Develop a core curriculum between general and technical education that would guarantee that students in both tracks have a common base of knowledge, culture and skills.
2. Develop the technical/vocational secondary schools and improve the quality of the academic, technical and vocational education services they provide.
3. Explore the development of a blended “third way” in which the two tracks are better integrated and students have a range of choices at various times in their school careers that better suit their needs and goals (while also better serving the needs of Egypt’s labour markets) (Ministry of Education, 2011, p. 27).

The background report noted further that the proposed three-pronged solution would require a number of actions including: “linking all secondary level outcomes – whether general or technical/vocational – to labour market needs in a much more dynamic way than is presently followed”; “changing the way in which students enter technical/vocational schools” with reduced reliance on exam scores at the end of the preparatory stage; and “supplying quality teachers, equipment and raw materials” (Ministry of Education, 2011, p. 28).

The dependency on private tutoring

According to the 2009 Survey of Young People in Egypt (SYPE), some 58% of primary students and 64% of preparatory students received paid tutoring. Most took private lessons either at their home or the tutor’s home. Some participated in after-school study groups (*magmu‘at*). Whereas group tutoring lessons in public schools after the regular school day are officially sanctioned by MOE, private lessons in the home are technically illegal but widespread.

Private tutoring is typically much more expensive than public tutoring. Costs vary by year of study and subject area. The highest cost points are in the years leading to the promotional exams, notably at Grades 9 and 12.

“An over-burdened and under-funded public education system fails to provide quality education to an ever growing number of students. Structural deficits like overcrowded classrooms and poor facilities often impede effective teaching and learning. This situation is aggravated by a very dense and rigid syllabus, an emphasis on rote learning and the exam orientation of the education system. Teachers, who are among the lowest paid employees in the public sector, are often unmotivated due to their low salaries and social status as well as their poor working conditions and, deliberately or not, fail to fulfil their duties during regular class hours. While students thus resort to private tutoring in order to cope with the curriculum and prepare for centralised exams that determine their future career opportunities, teachers depend on the additional income offered by this informal practice in order to make a decent living.” (Hartmann, 2008).

Table 2.6 Average household expenditure per child on education by type and family income, Egypt, 2005-06 (EGP)

Family income quintile	Expenditure on tutoring	Expenditure on fees	Other educational expenditures	All education-related expenditure
Lowest	137	50	172	359
Second	177	42	186	405
Middle	246	39	212	497
Fourth	476	69	260	805
Highest	708	286	331	1 325

Source: Shady, (2013), *Gender, Tutoring and Track in Egyptian Education*, Social Research Center, American University in Cairo.

Table 2.6 shows that the rate of all education-related spending for households in the highest quintile was 3.7 times that of the lowest. Spending on tutoring, which is strongly linked with a student’s background, is likely to contribute to learning achievement inequities. Indeed, analysis conducted by the World Bank suggests that “differentials in expenditures do contribute to inequities in achievements at completion of basic education” (Ersado et al., 2012). Controlling for tutoring expenses, performance in exams was found to vary only slightly across household types. The inference is that “were all parents to spend the same amount on tutoring, gaps in achievements at the preparatory completion exam between children of different background would diminish by about 13-per cent.” (Ersado et al., 2012).

As students and teachers concentrate their efforts on private lessons, regular schooling becomes almost redundant. Perversely, the informal practice which has evolved as a means of coping with deficiencies of the formal system effectively functions to prevent substantial improvements to formal schooling (Hartmann, 2008).

“The high and unequal levels of household expenditures in private tutoring do drive a significant share of achievement inequalities.” (Ersado et al., 2012)

The team was advised that private lessons are widespread and almost universal, in basic and secondary education. Parents said they were spending between EGP 300 and 1000 per month. The cost of lessons is most expensive in Cairo and Alexandria.

The reasons given for the dependency on private tutoring were insufficient time at school to cover the curriculum to the level of student understanding, and inadequate explanations by classroom teachers. It has also become a supplement to teachers’

incomes. These explanations need to be set alongside the need for parents to supplement the paucity of resources for schooling.

Parents commented that the consequences of private tutoring include: incentives for teachers not to teach well at school; high financial costs to parents, necessitating cutbacks in other areas of family spending; high time costs to students; tired classroom teachers; and widening inequality. Uneven means to purchase private lessons was seen as undermining the merit principle of educational access.

Students advised the team of the double burden of going to school and taking private lessons (see Box 2.3).

Box 2.3 My typical day (girls' secondary school)

6.00: breakfast & help around home
7.45: morning assembly and 4 periods (50 minutes each)
11.30: break (includes activities chosen by student)
12.00: further periods (depending on grade)
 return home for short nap
13.30-16.00: study
1630-18.30: private lessons
19.00- 23.00: study
23.30: bed

Source: team interview with a student.

The fragmented nature of governance

Despite a strong tendency towards centralisation in state affairs, Egypt suffers from fragmentation in education policy, financing and administration. The fragmentation is both horizontal, across ministerial portfolios, and vertical between central, governorate and district level agencies.

On the horizontal dimension, as noted above, some 17 ministries are involved in vocational training while the MOE controls the technical colleges. Egypt has no co-ordinated TVET strategy, nor is there any alignment between Egypt's goals and plans for general education and technical education and training. There are no systematic means for informing the education and training systems of Egypt's changing labour market conditions. Employers appear to have no formal means of influencing education and training policy considerations.

On the vertical dimension, the team learned of various gaps and overlaps between the functions of the central government, the governorates (*muddiriyas*) and the district administrations (*idaras*). A clear example of the lack of joined-up-ness is the unclear roles of school principals, such as for teacher supervision. There are central MOE supervisors, *muddiriya* supervisors and *idara* supervisors and school principals with supervisory responsibilities for the teachers on their staff. The overlap adds to costs and bureaucracy but not to teaching or student performance improvement.

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Chapter 3.

The National Education Strategic Plan 2007-2012

This chapter outlines the goals and initiatives of Egypt's first national strategic plan for education. It assesses the success of the plan and raises issues about the processes of planning and implementation. The chapter also identifies lessons to be drawn from the experience and achievements of the first plan, including foundations for future action.

The National Education Strategic Plan 2007-2012 was an unprecedented undertaking to improve Egypt's schooling system with the declared ambition "to promote the sustainable growth of the economy and consolidate democracy and freedom" (Ministry of Education, 2007). Several attempts were made to engage key stakeholders (national experts, ministries, governorates and international agencies) in the process, though with varying levels of success.

The scope of the plan

The plan sought to address a wide range of issues: low enrolment in secondary education coupled with high dropout rates; a wide gender gap; a low teacher-student ratio and high "classroom density"; poor teacher and teaching quality; low teacher salaries; inadequate teacher professional development; inadequate student achievement; inequality of access and quality at all educational levels; pervasive private tutoring, particularly in secondary education; inefficient budgeting and expenditure allocation; low levels of transparency and accountability; underdeveloped monitoring and evaluation systems, with unclear performance measures; over-centralisation of functions, resulting in lack of responsiveness to local needs; and limited community and parental involvement.

The plan set out a vision to provide high quality education for all; to prepare children and youth for "healthy and enlightened citizenship in a knowledge-based society, under a new social contract based on democracy, freedom and social justice"; and to adopt "a decentralised educational system that enhances community participation, good governance and effective management at the school level as well as at all administrative levels" (Ministry of Education, 2007).

The plan envisaged a wide range of reforms, achieved through the implementation of twelve priority programmes, classified into three groups, and broken down into key objectives:

I. Quality programmes

1. *Comprehensive curriculum and instructional technology reform*
 - a. Introduce a modern standard-based curriculum and syllabus.
 - b. Develop and produce blueprints and/or guidelines for new textbooks and instructional materials in line with the newly developed curriculum.
 - c. Enhance the instruction of Arabic language.
 - d. Enhance the performance of staff implementing the new curriculum.
 - e. Develop the process of textbook authoring.
 - f. Improve the efficiency of procurement, printing and delivery of textbooks.
 - g. Restructure the Centre for Curriculum and Instructional Development.
 - h. Develop a professional cadre of curriculum and instructional materials designers.
2. *School-based reform, accreditation and accountability*
 - a. Put the school at the heart of the reform.
 - b. Performance-based approach.
 - c. Good governance and effective partnership.
3. *Human resources development and professional development (HRD/PD)*
 - a. Establish a Teachers' Academy to issue licenses for the teaching profession.
 - b. Capacity building of a new training sector within the new HRD/PD system.

- c. Establish a new training system for educators, especially on new curricula, for all levels of education.
- d. Strengthen distance training.
- e. Training directed to the actual needs of individuals as scheduled in the plan.

II. System support and management programmes

4. *Institutionalisation of decentralisation*

- a. Support the institutional capacity of the Ministry of Education (MOE) in decision making, public relations and evaluation.
- b. Restructure/merge the supportive authorities, entities and centres.
- c. Support training centres in governorates.
- d. Support school-based management.
- e. Develop an administrative supervision system.
- f. Support school administrative authority.
- g. Increase the effectiveness to implement laws and decisions.
- h. Support the institutional capacity of the MOE in financial and administrative affairs.
- i. Develop an institutional system for financial decentralisation to schools, linking budget to performance.

5. *ICT for management: technological development and information systems (education management information systems and school management systems)*

- a. Modernise and strengthen the technology infrastructure in all schools.
- b. Activate the role of information system management in the educational process.
- c. Support the best use of technology in distance learning and training.
- d. Build capacity in the ICT domain.
- e. Merge different technology departments in one sector to achieve unity and efficiency.

6. *Establishing a monitoring and evaluation system*

- a. Monitor and evaluate learners' growth and performance in light of achievement indicators.
- b. Monitor and evaluate school performance according to the effective school indicators.
- c. Monitor and evaluate administrative and financial systems at all levels.
- d. Restructure the monitoring and evaluation system.
- e. Support the institutional capacity of the National Centre for Examinations and Educational Evaluation (NCEEE).

7. *School construction*

- a. Design schools according to specific standards.
- b. Improve the school building planning procedures.
- c. Improve decentralisation through a mechanism for site selection, school construction and maintenance.
- d. Set up a plan to manage school construction at decentralised level.
- e. Establish a system to engage the private and public sector in the school construction process.
- f. Decentralise the school construction system across the entire cycle.

III. Level-based programmes

8. *Early childhood education*

- a. Enhance the quality of the educational process.
- b. Develop an early childhood management system.

9. *Basic education reform*

- a. Enhancing quality of pupils' life in basic education.
- b. Developing a basic education flexible curriculum and instructional materials in light of the national standards.
- c. Completing the ongoing modernisation of pedagogical methods and assessment.
- d. Solve the problem of teacher shortages and uneven deployment.
- e. Develop societal awareness of the basic education reform.

10. *Modernisation of secondary education*

- a. Transform general and technical secondary education systems into an open system based on current global trends.
- b. Modernise the secondary education curriculum.
- c. Achieve a pedagogical paradigm shift.
- d. Enhance the quality of secondary education students.
- e. Provide professional development for secondary teachers.
- f. Build the institutional capacity of secondary schools.
- g. Improve the general secondary education certification system.
- h. Improve the examination and assessment system of technical secondary education.
- i. Integrate specialisations into technical secondary education.
- j. Integrate the vocational secondary schools to the technical secondary schools.
- k. Provide innovative models to be the bases for future technical secondary education.

11. *Education for girls and out-of-school children*

- a. Establish schools in co-operation with local communities.
- b. Provide sufficient number of trained managers, supervisors, facilitators and workers.
- c. Produce instructional materials within the national curriculum.
- d. Provide a school feeding programme for all children.
- e. Develop an effective management system.

12. *Education for special groups – children with special needs*

- a. Include 10% of children with mild disabilities in mainstream basic education schools.
- b. Improve the quality of education in existing special education schools.
- c. Establish a supportive inclusive environment within mainstream basic education schools.

Achievements of the plan

Overall, the National Education Strategic Plan 2007-2012 (NESP) was an important step in establishing a forward-looking framework for reform in Egypt. The effort in itself set new benchmarks in terms of coherent, longer-term planning, multiple stakeholder engagement, and a structured, data-based approach to monitoring progress towards measurable goals.

Given the ambitious scope and scale of the plan, its achievements are, not unexpectedly, uneven. The team was not able to conduct a full evaluation of the plan, but had to rely on limited data and the reported views of participants and clients of the plan during its site visits and consultations. In the light of the available evidence, the planned improvements can be divided into three levels of achievement: 1) reasonably good progress; 2) partial progress; 3) no real progress.

Planned improvements with reasonably good progress

Raising awareness of the possibilities for change

The strategic planning effort involved in developing the NESP was unprecedented. The comprehensive exercise of analysing gaps and prioritising programmes to address them has evidently raised the awareness of the possibilities for change. The cultural impact of the planning process also made the trade-offs and challenges involved in pursuing ambitious targets with constrained resources more transparent. Significantly, the plan provided the stimulus necessary to make tangible progress in important and previously neglected areas requiring reform of long-standing educational policies and practices.

Improving access and success

The most direct benefits deriving from the government's commitments to the plan are increases in student access to education at all levels. Egypt has achieved higher rates of participation in the compulsory and post-compulsory years. Student progression rates have risen and attrition rates have fallen.

The programmes geared to education for girls and out-of-school children have increased access significantly, while efforts focusing on children with special needs (more effective identification and inclusion in regular schools) have come up against physical and attitudinal barriers.

Regional disparities remain, as do differences in participation by gender and household income levels.

School-based reform

The initiation of school improvement plans represented an important shift from a top-down, one-size-fits-all model of reform to one that allowed and encouraged some bottom-up development. The team was impressed by initiatives in several of the schools visited. For example, in one secondary school for girls, the principal had made use of donor funds to extend the curriculum in ways that developed a range of analytic, creative and teamwork skills among students, as well as widening their perspectives on a range of issues.

Medium-term expenditure budget

The education plan gave rise to a new initiative for the Egyptian budgeting system generally, in the form of a medium-term expenditure budget. The education plan was developed by adapting the analysis and projection (AnPro) model from the United Nations Educational, Scientific and Cultural Organization (INESM, UNESCO). This model can be applied across all phases of the planning process: sector analysis, target setting, assessment of resource requirements, priority setting, financial analysis (including

assessment of funding gaps and preparation of financing plans) and implementation monitoring. The AnPro model for Egypt employed a 5-year planning horizon, including for costing and budgeting. It was employed in education as part of Egypt's broader modernisation of public-sector management. The medium-term expenditure budget provides better integration of policy, planning and budgeting. It provides a resource envelope to cover the estimated cost of delivering agreed programme roll-outs. It gives agencies greater predictability and allows them greater flexibility in the use of resources. Education budgeting is considered in detail in Chapter 7.

Improved use and collection of data

The development of the plan itself and the processes developed for monitoring its roll-out and achievement of targets has led to a more comprehensive and systematic approach to data collection, analysis and reporting by the MOE. The Condition of Education Report (Ministry of Education, 2010), for instance, could not have been produced before the plan and associated data systems were designed. The Public Expenditure Tracking Survey is a further example of a useful new policy monitoring tool.

Planned improvements with partial progress

National Qualifications Framework

The Strategic Planning Unit of the Ministry of Higher Education (MOHE) is progressing work on a National Qualifications Framework for Egypt. The development of a National Qualifications Framework, and associated work to describe the learning outcomes expected for each level of educational qualification, is an important building block. It can provide a basis for outcomes-based assessment, curriculum articulation, and the development of learning pathways and recognition of prior learning through credits for future qualifications. Thus it can enable lifelong learning without redundant learning of knowledge and skills acquired previously.

National Curriculum Framework

The Centre for Curriculum and Instructional Materials Development (CCIMD) is progressing work on a National Curriculum Framework. The draft for the general secondary stage sets out goals for the secondary stage, criteria for selecting curriculum content and expected generic learning outcomes, including knowledge, skills, and values, beliefs and attitudes. The work, while at an early stage of development, is oriented to more relevant learning for life and work, including the development of cognitive skills, interpersonal skills and technological competencies. It is also developing a standards-based approach and a variety of assessment methods.

Professionalisation of teaching

Significant efforts have been made to improve the status of teachers. These include the development of National Standards for Education (2003); the establishment of the Teachers' Cadre (2007), the development of a career path and promotional system for teachers, along with a 50% increase in basic pay (2007) and bonuses for each promotional level (from 2008); and the establishment of the Professional Academy for Teachers (PAT) in 2008. The Teachers' Cadre is a five-laddered professional licensing system for teachers. To gain a professional licence and join the Cadre, teachers have to pass an examination. The five categories are: 1) teacher assistants (contracted teachers);

2) teachers; 3) senior teachers; 4) senior teachers A; and 5) expert teachers (Ministry of Education, 2010: 126, Indicator 20).

However, the status of teachers remains low and the effort to improve teaching performance through PAT reaccreditation of teachers was diluted in response to opposition from the syndicate of teachers. From all that the team observed, with only a few exceptions, teaching in schools remains outmoded in terms of curriculum and pedagogy, unreconstructed in terms of encouraging more active learning, and uninformed by research and dissemination of good practice. This matter is considered in detail in Chapter 5.

Changing the thanawiya amma

From the 2013/14 academic year, the secondary school leaving exam (*thanawiya amma*) has been reduced from a 2-year course to a 1-year syllabus. In the first year of the three years of senior secondary education, students undertake a range of scientific and literary studies. In the second and third years, students choose their subject concentrations. Prior to the 2013 change, exams were taken in two stages, one at the end of second year of senior secondary (Grade 11) and the other at the end of the third year (Grade 12).

The change to a single assessment point is intended to reduce the pressures on students and the burdens on families. Previously, students could score high marks in their second year but score poorly in their third year. When both scores are averaged, the student could receive a low overall score. The new system allows students to focus their efforts on one stage. In doing so, the stakes are raised even higher, in what remains a content-based curriculum and a recall-based exam, with so much dependent on students' performance at a single point in time. The cost of private lessons may also be reduced by limiting the *thanawiya amma* to one year, as the period of cramming for the test is shortened. With the stakes raised, and the range of testable subjects broadened, however, there may be some inflation of private lesson prices.

The change also allows a secondary school diploma, granted to students who pass all subjects in their third-year exams, to be used in the job market. This reverses a previous law that did not recognise secondary school diplomas for administrative or technical positions. The change also allows students who obtain a secondary school certificate to apply for university admission up to five years after graduating from secondary school. Previously, the law required students to commence university studies immediately following graduation from secondary school, prohibiting any student from postponing studies. The transition of graduates from education to employment is considered in detail in Chapter 4.

Quality enhancement initiatives

The "quality" programmes have achieved only partial results. Out of the three priority programmes in this category, the curriculum reform agenda is lagging, as major changes still need to be made to the curriculum for it to drive student-centred learning as envisioned. School-based reform has made some progress, but not sufficient to meet the accreditation targets, as schools have struggled to meet standards under the "buildings" category. Important achievements have been made to improve governance through the establishment of Boards of Trustees in schools, and the concomitant training of members. Similarly, the human resources and professional development programmes have resulted in increased training offerings (in inspection, leadership, ICT and pedagogy), as well as

the establishment of the Professional Academy for Teachers. Matters of teacher education, accreditation and professional development are considered in Chapter 5.

Monitoring and evaluation procedures

The National Education Strategic Plan outlined a set of initiatives for monitoring and evaluating student learning against achievement indicators. The learning skills were to be both generic and subject related. Sets of measurement instruments were to be available for diagnostic assessment and student performance monitoring in 2009/10.

The plan also envisaged supporting the institutional capacity of the NCEEE in light of the requirements of education reform. This included restructuring of the NCEEE by the end of 2008/09, preparing a base of at least 30 national evaluation experts in psychometrics and school content by the end of 2009/10, and the preparation of a National Standardised Achievement Test (NSAT) for school subjects. Aptitude tests were to be designed to focus on critical thinking and problem-solving skills. This agenda also required updating of the National Standards for Education according to national and international indicators for evaluating learner performance.

The plan further envisaged evaluating the process of teacher professional development by the end of 2008/09. It also aimed to overhaul the monitoring and evaluation system, establish school-based quality and training units, establish quality units at the *idara* and *muddiriya* levels, and restructure the Inspection Authority and other related bodies into one structure called Quality Sector by the end of 2007/08.

Little progress appears to have been made on the initiatives outlined above. Moreover, the team was advised of some confusion with regard to respective roles at school, district, governorate, MOE central, and the PAT with regard to inspection, staff appraisal and training.

Decentralisation of responsibilities and resources

Decentralisation was accorded a high priority by the government in its quest to be more responsive to constituents across the nation, to further engage them in the reform process, and to increase accountability and ownership. The Ministry of Finance advised the team that education was a pioneer in this regard, with the vision that other government sectors would follow.

Government budget lines for maintenance, and capital investment were initially selected for devolution from central agencies (e.g. the General Authority for Education Buildings – GAEB) to governorates, districts and schools. Pilots were first launched in three governorates (Ismalia, Luxor and Fayoum) in 2008/09, and a countrywide implementation followed. A Decentralisation Support Unit was also established and support committees at the *muddiriyas* and *idaras* and to co-ordinate these efforts.

School principals appear to have generally welcomed the decentralisation of funds for maintenance. Some have voiced concerns that only maintenance budgets (focused on the upkeep of school buildings) have been devolved, leaving out other important budgetary items, including teacher training and teaching and learning materials such as equipment and chemicals for laboratory experiments. They have also expressed their frustration with the short timeframe for receiving and using the transferred funds. They told the team that transferred amounts were often not fully used but that they could not be reassigned to other budget categories (such as equipment and laboratory consumables), or used at a later date. However, the team was advised by the Ministry of Education that school

principals have a full fiscal year to determine what they want to do and, once they receive the funds, a further two months to make the necessary purchases.

With respect to capital investment, the team was informed on the one hand, that the devolution of the funds to the *muddiriyas* without their ownership of the bidding and vendor selection process (which remains at the central level) has resulted in unclear lines of accountability and large numbers of projects for new buildings put on hold. On the other hand, the Ministry of Education advised that both the bidding and vendor selection processes had been devolved to the *muddiriyas*. Grouping ownership and functions either at GAEB central office or at the *muddiriya* level may be more effective than splitting them.

Planned improvements with no real progress

The disappointing aspect of the plan's implementation is that the least progress has been made on the most important policy challenges: modernising secondary education and reforming assessment.

Modernising secondary education

The strategic plan called for the modernisation of the secondary education level (general and technical) in order to “provide students with the necessary skills, knowledge, and scientific and practical competencies for lifelong learning, active citizenship, and the modern labour market”. The plan proposed to phase out vocational preparatory schools, recognising that assigning children who had failed their end of primary school level exam to vocational preparatory schools was not acceptable: “all students must obtain at least the cognitive and academic skills of the preparatory school curriculum to function in society and the labour market as life-long learners” (Ministry of Education, 2007).

The plan envisaged a system allowing students to switch from general secondary education to technical secondary and vice versa. The general and technical streams would thus be less rigid, and provide equal opportunities to students from all socio-economic backgrounds in the two tracks to opt for higher education or enter the labour market directly with a stronger knowledge and skills base. Parity of esteem would be achieved between secondary schools and technical/vocational schools. Significant curriculum reform was seen to be necessary. In addition to a 50% core curriculum for all streams, the plan envisaged harmonisation of the literature/arts and scientific streams, and allowing up to 10% of the curriculum for elective subjects among both streams. This would have required the revision of the formal links between the two streams of secondary education and the preparatory level, and establishing a more inclusive admissions approach to secondary education, rather than tracking into technical schools on the basis of the Grade 9 exam score. The strategic plan expected to pilot this approach during 2007-08, generalising its application during 2009-10, and completing it by 2011-12.

The dimensions of the planned secondary education reform involved a manifold and massive agenda, including far-reaching changes to technical and vocational education and training (TVET):

- gradual phasing out of vocational preparatory education
- reducing the proportion of students in technical secondary
- raising the status of TVET rather than seeing it as a “dead end” or “second class”

- building up strong institutional links between general secondary and technical education
- finding new mechanisms for students to enter universities and higher institutes
- adopting an interdisciplinary curriculum
- expanding new technical specialisations in the field of electronics, plastics industry, tourism and others
- ceasing the building of technical schools with traditional specialisations
- expanding 2-year Technology Community Colleges
- improving business and private industry involvement
- having multiple models of technical education in place (such as a productive school model operating as a factory system; expanding the dual system model (Mubarak-Kohl Initiative); developing a cluster schools model for pooling resources; establishing centres of excellence models through transforming 5-year industrial schools into advanced technology schools, and establishing an agricultural mobile school model (MOE, 2007).

However, the team saw few signs of progress on this central agenda. A general reduction in the share of technical secondary enrolments was apparent. Tourism as a new specialisation was observed in some schools. However, there seems to have been no movement towards a common core curriculum, mobility between the general and technical tracks, and the raised status and resourcing of TVET.

Reforming assessment

In term of assessment at the secondary level, the plan aimed to improve the pre-university education certification system (*thanawiya amma*) in a close collaboration between the MOE and the MOHE. This would involve the modernisation of the testing and assessment system of the general secondary certificate, and the basis for admission to university. The plan envisaged achieving this goal through the development of proficiency tests, psychometric tools and objective measures by the NCEEE (within 3 years after the expected start of the project in 2008/09).

The examinations and assessment system for technical secondary education was also to be improved. It was to be based on the evaluation of technical competencies, and create a link between technical secondary and higher education institutes and community colleges. It was to involve the development of new instruments to assess the proficiency level of the students with modern psychometric tools to allow for objective assessments developed by NCEEE within the new system, within a timetable of 3 years starting in 2008/09. The plan also considered streamlining the number of specialisations in technical secondary education into a smaller number of coherent areas oriented to the modern labour market, and compatible with the national skills standards set by the Ministry of Labour. This project also envisioned the integration of vocational secondary schools into the technical secondary level with stronger links to labour markets, in collaboration with various stakeholders in business, industry and the public sector.

Deficiencies in the design and execution of the plan

Problems with the approach to planning

Given the effort invested in developing the National Education Strategic Plan 2007-2012, it is important to take stock of its shortcomings in conception, design and execution.

First, the plan's goals were overly ambitious. On the one hand, there were too many "priorities"; so many, indeed, that there were none. The extensive agenda hindered the government's ability to execute focused and effective interventions. The long list of goals was not conducive to intuitive understanding and effective communication to internal and external stakeholders. This complexity limited the government's ability to build and sustain support for the reforms. It also made it difficult to monitor performance and address gaps as they emerged. On the other hand, the targets set for each of the programmes and objectives to be achieved throughout the five years of the plan were, in most cases, unrealistic. The Policy and Strategic Planning Unit (PSPU) explained that the cause of such miscalculations was the misuse of the AnPro model which overvalued existing capabilities and resources (a key input for estimating projections), resulting in unreachable targets. However, the major reason for the mismatch between goal and attainment was the shortfall in the provision of funding by the Ministry of Finance against the resource requirements assessment of the AnPro model.

Second, the implementation plan developed for the roll-out of programmes was lengthy, cumbersome and often lacking clarity about expected results and measures of success. This ambiguity impeded regular and consistent evaluation, and prompt remediation for lagging initiatives. The plan also lacked a considered approach to pilot testing and scalability, and the proper sequencing of initiatives.

Third, these deficits in goal setting, prioritisation, implementation planning, change management and overall governance of the reform, were compounded by lack of policy coherence and cross-agency co-ordination. The reform drive had critical gaps in horizontal co-ordination and accountability, exhibiting a component rather than systemic approach to change. There were also critical gaps in vertical integration and accountability, with a top-down approach to reform and little ownership by those charged with putting the changes into effect in schools and classrooms. Curiously, there was no risk assessment and no contingency plans in the event that elements of the plan came up against technical problems or political resistance.

The neglect of technical and vocational education and training

With regard to TVET, the plan included detailed proposals for scaling up some current initiatives (the dual system), developing other models such as "Cluster-Schools, Centres of Excellence, Specialised Experimental Technical Schools, Unified Schools, Productive Schools and establishing an Agricultural Mobile School" (Ministry of Education, 2007); and a further proposal to concentrate "on building 5-year system technical schools and expanding 2-year Technology Community colleges in collaboration with MOHE" (Ministry of Education, 2007). Apart from the development of two cluster schools, the team did not find evidence of implementation of these proposals.

Most importantly, however, the plan lacked a comprehensive and integrated vision for the TVET sector as a whole. It focused exclusively on the technical education provided by the MOE, and in that domain promoted cross-cutting programmes, but it did not take

account of TVET provision by other ministries and training providers. By excluding non-formal learning it missed the opportunity to position and reform TVET within a lifelong learning perspective. Concurrently, the TVET sector developed its own isolated strategy, which was neither linked to the NESP nor formally adopted by the government, thereby contributing to confusion over the future role and direction for TVET (ETF, 2011).

Problems with the implementation

Such an ambitious plan required well-designed implementation architecture. Annual Operational Plans, to be reviewed every quarter, were developed to cascade and monitor implementation closely. Overall progress would be determined through annual review. A National Education Plan Implementation Committee was set up by the Minister of Education, supported by the PSPU. In each governorate an Educational Planning and Implementation Committee was formed to implement and monitor the plan.

In practice, plans and targets were in many cases not cascaded to the governorate or *muddiriya* level, and progress was not regularly monitored. Nevertheless, data obtained through interviews in some governorates and at the MOE allowed the team to see that measures were initiated in many of the plan's categories, although with wide variances across programmes and regions. These differences in implementation included decisions being taken to scale up particular programmes before their cost-effectiveness had been evaluated.

The team's consultations with people involved in the planning and implementation stages, at central and local levels, indicate that the plan was seen by many as a reform agenda imposed on a community of educational practitioners who were not convinced about its merits or feasibility and not motivated or able to embrace it.

As noted above, there was no risk assessment of the plan's workability or the possibility of implementation within the timeframe. Without some assessment of likely sources, bases and forms of resistance to the objectives and measures of the plan, there were no reference points for developing a change management strategy.

Foundations for future action

Given the expansive ambition and scope of the plan, including its challenges to deeply-ingrained cultural underpinnings of the education *status quo*, it is not surprising that its implementation had modest results.

It was not only that the objectives and targets set by MOE were overly ambitious and under-resourced, but also, and importantly, that comprehensive secondary education reform never took grip. The reform process met predictable resistance and became stuck in endless discussions with a lack of consensus in key areas, such as teacher performance appraisal and retraining, and political sensitivities around the *thanawiya amma*. Without clarity, commitment and leadership, ownership of the plan, already weak from the beginning, faded away as did the momentum for reform.

In looking to the future, the key lesson from the experience of the past plan is the need to focus on the things that matter most. Much of the analysis of needs and deficiencies underlying the previous plan resonate with the team's understanding of the immediate imperatives for reform of Egyptian education. Many of the directions for

reform outlined in the plan accord with the team's assessment of policy change that is now even more urgently required.

Above all, future policy must focus on the modernisation of secondary education and associated issues of labour-market relevance, and high-stakes educational assessment, along with teacher professionalisation and teaching practice improvement.

In this regard, there appear to be a number of building blocks available, including work undertaken by:

- The MOHE, on the development of a National Qualifications Framework.
- The CCIMD, on a National Curriculum Framework.
- The NCEEE, on aptitude tests, generic skills exams and capacity building in large-scale assessment methods, including training in Item Response Theory, statistical models and their applications for test development, scoring and reporting.
- The PAT, on the identification of teaching competencies and associated tests and teacher training modules.

The following chapters deal with the nature of the future reforms needed in some detail.

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Chapter 4.

Education and the Changing Labour Market

This chapter outlines the characteristics and dynamics of Egypt's formal and informal labour markets. It explores the relationships between education and employment. It also considers the relevance of the curriculum, the effectiveness of skills formation, the balance between general and technical education, and the need for active labour market measures.

Education and labour market policies in the Arab world have had a devastating impact on many young people and have contributed to religious and political tensions throughout the region. The Middle East is a test case in how dangerous it can be to create aspirations among the young and their families by providing increased access to education without undertaking corresponding measures to strengthen the labour market. (Binzel, 2011).

Current Egyptian labour market characteristics

Along with many developing economies, including other Middle East and North Africa (MENA) economies, Egypt has a dual economy and a complex set of labour markets, with overlapping formal and informal economic sectors. In 1998, the formal economy was estimated to account for some 60% of total employment, around 40% of which was in the government sector. The informal economy accounted for some 82% of all Egyptian enterprises and 40% of total employment (El-Mahdi and Amer, 2005; Attia, 2009). Egypt's informal economy was estimated to be worth USD 350 billion in 2000, or 35% of gross national product (Schneider, 2002).

The informal economy is a subset of the “hidden economy” which comprises a wide range of productive activities from housework to organised crime. These can be grouped into four main categories: the illegal sector, the underground sector, the household sector and the informal sector (Bernabè, 2002).

Informal activities are not illegal but they are unmeasured, untaxed and/or unregulated, not because of deliberate attempts to evade the payment of taxes or infringe labour or other legislation, but because they are undertaken to meet basic needs (e.g. petty trade and barter, household agricultural production, ambulant street vending, unregistered taxi services, and undeclared paid domestic employment).

There are some blurred boundaries between the four non-formal sectors, and some overlap with the formal sector. Subsistence farming, for instance, may be seen as part of the household sector in economies where it does not significantly contribute to total agricultural production, whereas it may be regarded as part of the informal economy when it does make a substantial contribution to total output. There may be crossover leakage of outputs from and into the formal sector.

The informal sector

The informal sector (see Table 4.1) includes informal enterprises and all forms of “informal employment” – that is, employment without formal contracts (i.e. not covered by labour legislation), worker benefits, or social protection – both inside and outside informal enterprises. This includes:

- Self-employment in informal enterprises: workers in small unregistered or unincorporated enterprises, including employers, own-account operators, and unpaid family workers.
- Wage employment in informal jobs: workers without formal contracts, worker benefits or social protection for formal or informal firms, for households, or those employees with no fixed employer, such as employees of informal enterprises; other informal wage workers (for example, casual or day labourers); domestic workers; industrial outworkers, notably home workers; unregistered or undeclared workers; and temporary or part-time workers.

Table 4.1 Definitions of the informal sector, economy, enterprises and employment

Category of informal work	Definition
<i>Informal sector</i>	Own-account workers, unremunerated family workers, domestic servants and individuals working in production units of between 1 and 10 employees.
<i>Informal employment</i>	Informal wage workers and unpaid family workers who may work in the formal or informal sector. These workers are defined as informal if they lack a contract, specific health and pension benefits, and social security coverage.
<i>Informal enterprises</i>	Defined by the nature of regulation in each context: the availability of a license, and the payment of licenses, taxes and fees.
<i>Informal economy</i>	Includes both private informal workers and the informal self-employed as well as employers in informal enterprises.

Source: Avirgan, T., L.J. Bivens and S. Gammage (eds.) (2005), *Good Jobs, Bad Jobs, No Jobs: Labor Markets and Informal Work in Egypt, El Salvador, India, Russia and South Africa*, Global Policy Network, Economic Policy Institute. Washington, DC.

Informal employment in Egypt was estimated to total around 6.5 million in 1998 (El-Mahdi and Amer, 2005). Some 5 million of these were then engaged as street vendors, the majority of whom were self-employed, with some working for entrepreneurs or groups. People engaged in the informal sector worked an average of 51.6 hours per week compared with 44.6 hours on average in the formal sector. Some 85% of workers in Greater Cairo were working without a contract, and 74% of workers were covered by Social Security contributions, including those whose secondary job was in the informal sector while their primary job was in the formal sector. Women's average wages were 86% of men's in the formal economy but only 53% in the informal economy (El-Mahdi and Amer, 2005).

Rates of informal employment are highest among 15-24 year-olds, and among workers with only primary or basic education (Gatti et al., 2011). Around 5% of workers in Egypt's informal economy in 1998 had a university or post-graduate degree (El-Mahdi and Amer, 2005). The indications are that informal employment has been expanding since 2009 as a consequence of the global financial crisis (ETF, 2012), labour market mismatches and declines in formal employment as tourism and other economic activities have been adversely affected by political instability. In this context, the question arises as to the function of the informal sector and the purpose and direction of public policy, including education and training policy, in relation to it.

It is necessary to understand what the informal economy is, how it functions and why it exists. The informal economy cannot be regarded as a temporary phenomenon. It has been around for decades and it is not evidently in decline. It has a more noticeably fixed character in countries where income and assets are unequally distributed (Becker, 2004) and where access to formal jobs, primarily in the government sector, is a function of association with influential social networks (Avirgan et al., 2005).

The informal economy is largely characterised by low entry requirements in terms of capital and professional qualifications, small-scale operations, labour-intensive methods of production, and skills acquired outside of formal education (Becker, 2004). The persistence and expansion of the informal economy may be attributed to a range of factors, including the limited capacity of the formal economy to absorb surplus labour alongside rapid and substantial growth in the number of job seekers, rising demand for low-cost goods and services, and deficiencies in education and training. The obvious benefits for entrepreneurs who operate in the informal economy are avoiding costly and burdensome government regulations as well as high and complex taxes. The primary

reason why the informal sector is so large in developing countries is that the benefits of formality are dwarfed by its costs (Becker, 2004).

It is also necessary to understand the extent to which the informal sector is harmful and/or beneficial. On the one hand, informal employment may be seen to be harmful in two ways. First, the informal sector can reduce individual and household security. It is a form of socio-economic marginalisation. It can trap families in inter-generational poverty. The poor are locked out of the formal economy through lack of access to property rights and other institutions of a market economy, such as social safety net protection, access to credit, and licence to practise, including accreditation and recognition of skills. Among working youth, a recent survey showed that only 15.7% had a work contract and only 14.8% had social insurance. Second, the informal economy can undermine national capacity and security. Untaxed economic activities constrain government revenue and thereby the government's ability to provide social services. Unregulated activities also undermine government authority and community respect for the rule of law (Bernabè, 2002).

On the other hand, informal commercial activities provide an important source of income and social security in the absence of formal social protection. They may be also an important source of economic growth, particularly where government bureaucracy, regulation and corruption may stifle formal private entrepreneurial activity. The informal sector provides an array of services to the community, and parts of it function interdependently with the formal sector. The informal sector, although unmeasured, is part of the nation's overall productive capacity. Expansion of the informal sector may not be just a problem for national economic and social development, but also an asset with the potential to ameliorate economic crises and poverty (Bernabè, 2002). The total value of unlicensed and unregistered capital, businesses and real estate in Egypt is significant, perhaps of the order of USD 250 billion in 2009 (De Soto, 2011).

However, informal-sector firms have limited growth potential by dint of being constrained by the costs of informality and the absence of functioning asset markets. The informal sector cannot collateralise capital assets and inventory to obtain credit for expansion of its operations nor can it tap government services (Checchi-Louis Berger International, 1999). The opportunity cost of what De Soto calls "dead capital" (see Box 4.1) suggests the need for a balanced policy approach to the informal economy and its connections with the formal economy.

Box 4.1. Egypt’s economic apartheid

The entrepreneurs who operate outside the legal system are held back. They do not have access to the business organisational forms (partnerships, joint stock companies, corporations, etc.) that would enable them to grow the way legal enterprises do. Because such enterprises are not tied to standard contractual and enforcement rules, outsiders cannot trust that their owners can be held to their promises or contracts. This makes it difficult or impossible to employ the best technicians and professional managers – and the owners of these businesses cannot issue bonds or IOUs to obtain credit.

Nor can such enterprises benefit from the economies of scale available to those who can operate in the entire Egyptian market. The owners of extra-legal enterprises are limited to employing their kin to produce for confined circles of customers.

Without clear legal title to their assets and real estate, in short, these entrepreneurs own what I have called ‘dead capital’ – property that cannot be leveraged as collateral for loans, to obtain investment capital, or as security for long-term contractual deals. And so the majority of these Egyptian enterprises remain small and relatively poor. The only thing that can emancipate them is legal reform.”

Source: De Soto, H. (3 February 2011), “Egypt’s economic apartheid”, *The Wall Street Journal*.

Given the economic contribution of the informal economy, governments need to consider policies that recognise its importance, restrict and regulate it when necessary, but primarily seek to increase the productivity and improve the working conditions of those who work in it (Becker, 2004). Indeed, enterprises in the informal economy have an entrepreneurial potential that could flourish if some major obstacles to growth were to be removed. If only a fraction of Egypt’s informal enterprises could upgrade their capacity, then they could make a significant contribution to economic growth. Egypt may be able to unlock sources of its “dead capital” while providing participants in the informal economy greater security and the chance to move up the value chain. If parts of the informal sector were better integrated into the legal regime, its participants would benefit from the protection of Egyptian laws and standards. Egypt’s economy would also be seen to be stronger were more of its commercial activity calculated and included in its national accounts.

Measures to integrate the informal sector include the protection of property rights; the extension of credit and insurance to small, medium-sized and micro enterprises; and transparent and consistently applied regulation. Reform of governance is essential, including measures to deal with corruption and regulatory cost burdens. Even so, a policy of deliberate legal and financial integration would need to be grounded in understanding the varying potential of different informal enterprises for growth and the extent to which they contribute to a loss of human capital by deskilling what is a relatively skilled and educated labour force (Bernabè, 2002).

The formal sector

Government continues to play a significant role in the formal labour market, accounting for 23.7% of the employed labour force (2011). This share has fallen from 40% in 1982 as a consequence of policy measures to reduce public-sector functions and develop private-sector activity. In 2011, there were 5.4 million people employed in the government sector and 0.8 million employees in the public business sector (CAPMAS, 2012).

Table 4.2 indicates that there has been a relative expansion of employment in the construction sector in recent years, along with some growth in property-related services. Power and water utilities and transport and communications have also shown modest increases. Primary industries have been relatively flat and manufacturing has shown a slight rise.

Table 4.2 Composition of employment by economic activity, 2002, 2006 and 2010 (%)

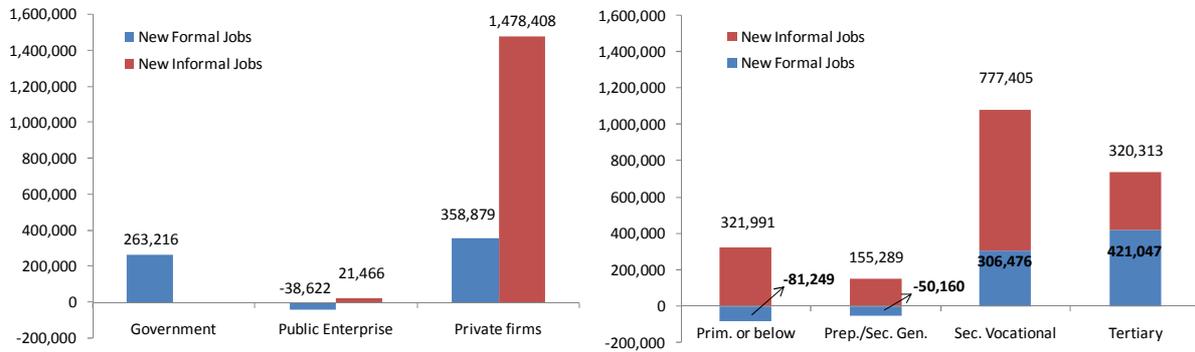
Economic Activity	2002	2006	2010
Agriculture, fishing, and forestry, logging and fishing	27.6	31.2	28.2
Mining and quarrying	0.2	0.3	0.2
Manufacturing	11.6	11.6	12.1
Electricity, gas and water supply	1.4	1.2	1.7
Construction	7.4	8.9	11.3
Wholesale and retail trade	13.0	10.6	11.3
Food and accommodation services	1.9	2.0	2.2
Transport, storage and communications	6.4	6.6	7.1
Financial intermediation and insurance	1.2	0.9	0.8
Real estate, renting and business services	1.9	2.1	2.4
Public administration and defence	10.8	9.3	7.8
Education	10.8	9.6	8.8
Health and social work	3.3	2.7	2.6
Community services and personal services	2.1	2.5	2.7
Personnel services for domestic service for families	0.3	0.2	0.6
Organisations, international bodies and regional and foreign embassies and consulates	0.0	0.0	0.0
Other	0.0	0.2	0.2
Total	100	100	100.0

Source: Ministry of Higher Education (2011), “PVET in Egypt: Country Background Report”, unpublished, Ministry of Higher Education, Cairo.

Egypt has continued to move towards a market economy, reducing the size of the state-owned sector and promoting the private sector. Since 2004, nearly half of the public companies within the production sector have been privatised. Egypt’s Asset Management Programme aims to improve efficiency, particularly management, financial and technical practices and develop public/private partnerships. However, more recently private-sector job growth has been hampered by the economic downturn and unrest in the country (El-Wassal, 2013).

Recent shifts in job creation

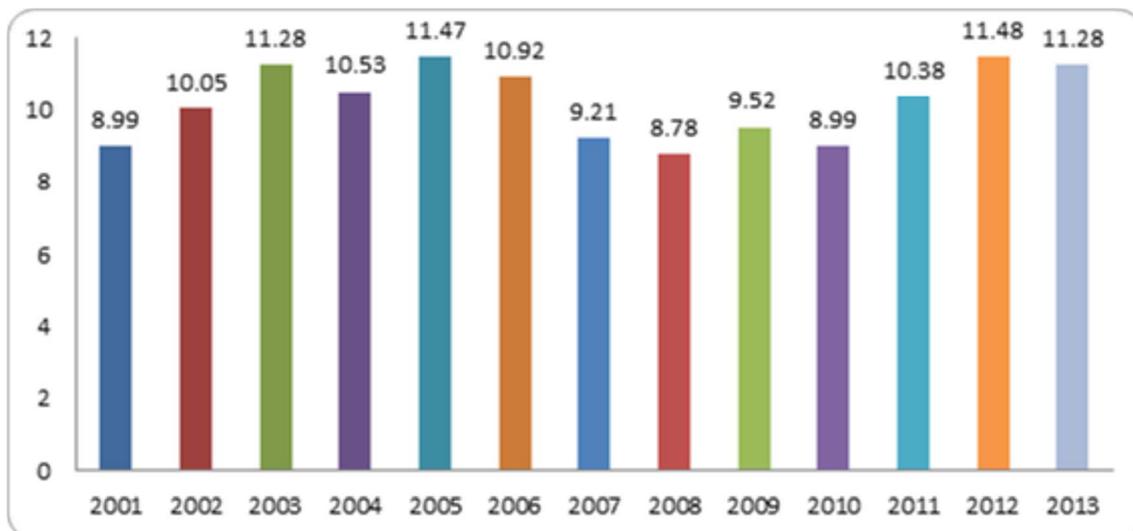
As shown in Figure 4.1, the majority of new jobs created between 1998 and 2006 were in the informal sector. Growth in informal employment represented 71% of total job growth over that period. The second source of jobs growth was the private sector of the formal economy, contributing 18% of overall employment growth. The government sector contributed the least (11%). Figure 4.1 also indicates that formal jobs are increasingly unavailable to labour market entrants without technical secondary or post-secondary general education qualifications.

Figure 4.1 Net job creation between 1998 and 2006, urban Egypt, by sector and educational achievement

Source: Angel-Urdinola, D. and A. Semlali (2010), *Labour Markets and School-to-Work Transition in Egypt: Diagnostics, Constraints and Policy Framework*, World Bank, Washington, DC.

Unemployment and joblessness

The official unemployment rate (Figure 4.2) in Egypt is of concern; almost 3.4 million out of a workforce of 26.8 million were out of work in 2012 (CAPMAS, 2012). The actual level of unemployment may well be much higher especially in some regions and age cohorts, as well as among women. The issue is complex with multiple and inter-related causes. For instance, the Egyptian National Competitiveness Council (2012) identified the following major deterrents of growth: “high rates of unemployment among highly educated job seekers, low private rates of return on education, the high level of informality in the labour market, the continuation of the public sector as the main job provider and low levels of labour productivity.”

Figure 4.2 Egyptian unemployment rate, 2001-13

Source: IMF (2012), *World Economic Outlook: Growth Resuming, Dangers Remaining*, IMF (International Monetary Fund), Washington, DC.

The potent mix of the demographic “youth bulge” in Egypt (the large proportion of the population aged under 15 years moving into working age) combined with a high unemployment rate among youth has serious implications both for individuals’ transition to adulthood and quality of life, as well as for Egypt’s economic growth and productivity. Table 4.3 shows three dimensions to the challenge for Egypt. First, unemployment rates are highest for those with the highest levels of educational attainment and lowest for those with the least education. Given the high correlation between educational attainment levels and household income levels, those with higher qualifications have greater financial means than others to persist in their search for formal employment and so are recorded in the official unemployment statistics, whereas those with fewer resources have to give up their job search and make an earlier entry into the informal labour market (UNDP, 2010). Second, those aged 20-24 years are the worst affected. Third, there are significant gender differences in the unemployment rates for all age groups. Young women with post-basic education fare much worse than young men with equivalent qualifications. Whereas the unemployment rates fall sharply for young men aged 25 and above, the decline is much less steep for young women.

Table 4.3. Unemployment rates by educational attainment and gender, age 15-29, 2012 (%)

Educational attainment	Males			Females		
	15-19	20-24	25-29	15-19	20-24	25-29
Age						
Illiterate	12.8	11.1	3.0	4.5	0.9	1.0
Reads & writes with literacy certificate	12.5	12.7	2.8	6.0	8.3	5.8
Preparatory education	23.1	18.7	5.8	30.2	8.2	6.8
General or al-Azhar secondary education	37.8	33.4	15.1	77.8	57.8	36.1
Technical average	34.7	30.1	8.1	78.3	66.5	55.1
Above average and less than university	52.3	38.5	17.6	45.0	65.7	52.0
Qualified university and above	n/a	57.2	25.4	n/a	71.2	44.4
Total	22.5	30.4	11.6	46.6	59.7	39.6

Source: CAPMAS (Central Agency for Public Mobilisation and Statistics), data prepared for the team

The International Labour Organization (ILO) defines “unemployment” as meaning an individual must be capable, available and seeking work. The jobless rate captures how much of the not-in-school population is either unemployed or “inactive” (those who are capable and available but not actively seeking work for whatever reason). For example, many women no longer seek work once they marry.

Statistics on joblessness also include young people who have given up searching for a job due to limited opportunities. This group of “discouraged” youth is significant and is particularly high in rural areas in Egypt as many young people realise that they are unlikely to find employment. Analysis of recent survey data on Egypt’s youth shows that the joblessness rate among young people aged 15-29 reaches 60%. That is almost two-thirds of young people in this age group who are neither in school, nor employed. Unemployment statistics, while significant, thus refer only to a sub-group among jobless youth.

The OECD and World Bank Review of Higher Education in Egypt (2010) referred to the phenomenon of “educated unemployment” – excess university graduate supply (particularly in the social sciences) over labour market demand. Traditionally graduates found employment in the public sector and that accounts for their inclusion in the unemployment figures for an initial period. However, with fewer opportunities now available in the contracting public sector, they then look to the informal economy for

employment and cease to be part of the official unemployment statistics. Without a job, young men cannot get married so they cannot wait forever for public sector employment and the private sector has not created sufficient opportunities. About one-third of first jobs for males are in the informal sector, with another one-third in self-employment or unpaid family work (UNDP, 2010).

Anticipated changes in labour market structure and conditions

In addition to its traditional industries of agriculture, textiles and tourism, Egypt has a fast-growing domestic market in sectors such as information and communications technology, business services, green technology, and training. There is scope for expansion in all of these economic sectors.

In a recent study by The Egyptian Observatory for Education, Training and Employment, (Assaad et al., 2012), the projections are that “manufacturing, utilities and [the] mining industry group will experience the fastest growth in the forecast period, followed by the transport, storage and communications industries. The construction and real estate and business services industries are projected to grow much more slowly”. Consequently they expect growth in “the production-related blue collar skilled and semi-skilled occupations associated with the manufacturing industry”. These include carpenters and cabinet makers, textile and garment workers, food processing workers, machine operators, glass makers, and blacksmiths and metal workers plus associated professionals, such as engineering technicians.

The team was interested in understanding the possible future trajectory of employment opportunities in Egypt. The prospects for future growth or contraction in the major employment sectors, and their education and training requirements, are mixed.

Agribusiness

Agribusiness, agriculture and food processing account for 12% of Egypt’s exports and employs around 30% of the workforce. The Delta region and the banks of the Nile river are the traditionally cultivated, small farm areas where most of Egypt’s population lives. Egypt plans to develop both the domestic and export markets for agriculture by reclaiming desert land into farmland, using modern cultivation techniques and developing new products. Success will depend on irrigation projects being financed by international donors. To effect such a transformation would require modern agricultural skills as well as the technical skills needed for irrigation plants, but the potential for new jobs is substantial.

The food processing industry also has strong economic potential for growth but to sustain and improve competitiveness it needs to diversify production to meet demand and improve quality. The informal sector is involved in about 80% of food processing activities which will make this difficult, not least because of the lack of training and skills in that sector (ETF 2011a). The other aspect of modernising the food processing industry is the link between sectors such as industrial production, storage and transport, which would also increase employment potential.

Manufacturing

The textile industry is one of the key economic sectors of Egypt (ETF 2011a). It accounts for 3.5% of GDP, 27% of industrial outputs, and 14% of non-petroleum exports (2009). The production processes and organisation of the industry need to be upgraded, including management and technical competencies.

Tourism

The Egyptian National Competiveness Council Report (2009) identified tourism as a key economic sector. Egypt's tourism industry has been battered by the security situation, with Egypt dropping from 75th to 85th most competitive destination in the world in 2013. Yet Egypt has huge potential for tourism growth in its leisure facilities as well as its antiquities, and tourism is a large employment sector. The World Travel and Tourism Competitiveness Report (World Economic Forum, 2013) identified human resource development as a major need, specifically education and training and the availability of qualified labour (in both areas, Egypt ranked 126 out of a total of 140 countries).

Information and communications technology

ICT is a growth sector with great potential. In January 2009, the London School of Economics (LSE) reported that Egypt “provided the highest market potential of any country” studied in the report, due to its cultural fit with Western European economies, its strong language fluency, its “convenience for cost-effective ‘near shoring’ for European business” and as a gateway to the Arabic world (Willcocks et al., 2009). AT Kearney Ltd's Global Service Location Index (2011) placed Egypt as the leader in the region and fourth in the world for its attractiveness as an offshore location using criteria based on financial attractiveness, people skills and availability, and business environment. However that was before the recent political unrest. The co-operation between the government and foreign and local companies has been a model for development, and in the event of a return to stability, should place Egypt in a very competitive position to undertake “outsourcing” activities from developed economies.

The creation of science parks and targeted programmes such as EDUEGYPT (Education Development for Universities in Egypt programme) (ETF 2011a), which offers students training in soft skills, languages and technical competence, has successfully produced qualified staff for companies and about 40 000 jobs per annum for graduates.

Building and construction

Although this sector employs over 10% of the workforce, it offers a prime example of how the informal economy acts as a brake on development. International companies are looking to use modern technologies but the majority of Egyptian construction workers are from the informal economy and are untrained. Like the textile industry, the sector also lacks management and technical skills.

Possible future directions for Egyptian economic growth and diversification

Egypt has comparative advantages from its strategic geographical location and youthful population. It is not inconceivable that Egypt could develop using its transit hub

position to become an integral part of the global supply chain in services and manufacturing, such as consumer goods and pharmaceuticals and medical devices. To move sustainably in these directions, Egypt would need to increase its attractiveness to foreign capital investment and co-investment, encourage entrepreneurship and increase the skills of its workforce.

To this end, reforms to governance, finance and regulation will be required. Importantly, improvements will be necessary in education and training, particularly by expanding and connecting upper secondary and post-secondary education and vocational training to the needs of the job market. The effects of the global financial crisis, taken together with the progress of globalisation and technological change could benefit Egypt if it recovers macroeconomic stability sufficiently quickly. The advanced economies may look to relocate some of their industries and activities to developing economies and emerging markets if the labour force offers an attractive and competitive labour force.

Problems in the transition from education to work

The school-to-work transition period, which is crucial in shaping financial freedom, reproductive health and civic participation during adulthood, has become ever more fraught with risk and uncertainty (World Bank, 2012a).

Unlike most parts of the world, unemployment rates in the MENA region are highest amongst the more educated youth. This situation is typical in economies where education and training systems are not adequately linked to the skills required by the economy, including its most promising growth sectors. The economies of the region have not been able to create the jobs needed to meet the needs of an increasing labour force. In addition, the Arab world has produced more people with college diplomas than they can make use of. This, and the skills mismatch between what the labour market offers and what young people expect, continues to grow. Indeed, graduates, misinformed about the country's working conditions and requirements, have educational profiles that are inconsistent with reality. Jobs that offer financial stability, employment security and social protection are rare in Egypt.

Until around 1990, all university graduates unable to find a job were guaranteed employment by the government. While this commitment had worked well in the past, it became particularly onerous at that time: the economic recession had reduced the demand for technicians and skilled workers, and more females were becoming economically active (De Luca, 1994). Since 1990, graduate unemployment has become a more visible problem, especially as public-sector employment has not continued to expand and the private sector has not filled the employment gap.

The government remains the employer of choice for young people in Egypt as confirmed by many polls and youth-focused studies, particularly among women, for the benefits that it offers to its employees. Interviews with young people show that access to social security and work stability are the main reasons for wanting a job in the government. Public-sector jobs in Egypt are regarded as secure jobs for life, with generous medical and retirement benefits. This distorts the market, encouraging the brightest and best to “queue” for them and preventing the potential expansion of the private sector.

In discussions with secondary students, the team found that only some 10% of the students indicated an interest in a private-sector job. This mismatch between expectations and real prospects not only makes the first attempt at labour market entry very difficult

for young people, it also can lead to poor choices of study options at school. The team could not find any structured provision of information for students about labour market dynamics, skills shortages and surpluses, nor guidance to help students make informed study choices at any of the schooling stages, including general and technical secondary education.

Based on a survey of 1 500 youth and 1 500 employers in Egypt, Jordan, Morocco, Saudi Arabia, and Yemen, a report by the IFC and the Islamic Development Bank (IFC, 2011) shows that the skills and knowledge taught in Arab schools often have little or no connection to labour market needs.

Though the current generation is the best educated ever, opportunities and prospects have not improved for all youth. Egyptians have identified a delay in the transition to adulthood, describing this interim period, which can last up to five years, as “waithood” where they simply wait for their lives to begin without jobs and living with their parents, delaying family formation and the building of assets (UNDP, 2010). Waithood risks creating a “scarred generation” where youth pay a lifelong price as the result of deterioration of skills and foregone experience with all the economic, social and psychological consequences that brings (Morsy, 2012).

Youth are unable to market their education to gain their reservation wage and are delayed in their career progression. A substantial percentage of them, especially from the lower income strata, never complete the transition and become adults in transition, remaining unemployed long after graduation, resulting in underutilisation of human capital and poor returns on public investment (ILO, 2010). Young educated women in particular, participate less in the labour market despite the growing number of female graduates, and their employment prospects have worsened over time (Amer, 2007; El Hamidi and Said, 2008). The available evidence indicates that upward social mobility has declined in Egypt, suggesting that the goals of the policy of Education for All, as well as the aspirations of a generation of educated youth, have not been met (Binzel, 2011).

Employer views about the relevance of schooling and the employability of graduates

“We can recruit our front office, kitchen and ground staff from the local hospitality college. We can get plumbers and electricians through the Tourism Ministry. We can recruit for professional positions, such as accounting, from Cairo. But we have to go outside Egypt for training managers, children’s club workers and guest relations personnel.” (Hospitality sector employer, outside Cairo)

Employers in Egypt have expressed their need for a more competent labour pool. One of the main constraints, mentioned by 18% of Egyptian enterprises, was an inadequately trained workforce (World Bank, 2008). Such constraints are often in high-value high-growth sectors and if not addressed, Egypt could get left behind in these sectors and lose ground in existing sectors such as tourism.

Employers are unable to hire young workers who are immediately productive because they do not develop adequate employment skills in school. As Table 4.4 shows, employers are more satisfied with young workers’ writing and communication skills than their technical, practical and knowledge application skills. The consequence is that employers have unfilled vacancies, hire overqualified workers or spend more on training.

Table 4.4 Employers' assessment of Egyptian young workers' skills (%)

Youth workers' skill	Very good	Fair	Poor
Required technical skills	18.2	50.5	31.3
Practical training in school	10.1	42.4	47.5
Communication skills	38.6	49.4	12.0
Writing skills	39.2	41.0	19.8
Ability to apply knowledge learned at school	22.4	37.0	40.6
Commitment and discipline	62.9	28.9	8.2
Overall preparedness	13.5	66.1	20.5

Source: ILO (2007), *School to Work Transition: Evidence from Egypt*, Employment Policy Department, International Labour Office, Geneva.

A more recent survey of employer satisfaction conducted by the Alexandria Business Association (2011) reveals high levels of employer dissatisfaction with the employability of applicants for work. As Table 4.5 shows, most concerns arise in respect of skills, both for white- and blue-collar jobs. Poor educational quality and insufficient availability of workers with the right specialisation were identified as major concerns in respect of white-collar workers.

Table 4.5 Employer satisfaction with the availability, cost and employability of workers, 2011

	Agriculture	Industry	Construction	Services
A. Constraints to employing white-collar workers				
1.Total cost of labour	1.15	1.32	1.52	1.45
2.Finding white-collar workers	2.25	2.06	1.94	2.26
3.Constraints to employing senior white-collar workers				
3.1 Skills	1.8	1.8	1.78	2.04
3.2 Attitude to work	1.47	1.59	1.49	1.84
3.3 Staff turnover	1.69	1.73	1.52	1.77
4. Constraints to employing junior white-collar workers				
4.1 Education quality	2.15	2.14	2.17	2.42
4.2 Availability of relevant specialisations	1.90	2.01	1.89	2.15
4.3 Skills	2.10	2.05	2.01	2.33
4.4 Attitude to work	1.90	1.92	1.71	2.13
B. Constraints to employing blue-collar workers				
1.Total cost of labour	1.70	1.06	1.22	1.14
2. Finding blue-collar workers	2.25	1.80	1.64	1.78
3. Skills	2.05	1.85	1.51	1.79
4. Attitude to work	2.30	1.81	1.56	1.92

Key: Satisfactory = 0 – 1.2; Neutral = 1.21 – 1.8; Unsatisfactory = 1.81 – 3.0

Source: Alexandria Business Association (2011), *The Egyptian Business Climate Reform Index – Islah 2*, Alexandria Business Association.

In their interactions with the team, Egyptian employers complained that students were “not educated to learn”, “lacked initiative” and had bad work attitudes, and that they were “in a hurry”, having overly high expectations as a result of their educational qualifications. They were unwilling to start at lower levels and work upwards.

From the various studies into the Egyptian labour market and education system, it is clear that employers look for basic and generic skills to be taught in schools. They want employees who can read and write, who can analyse issues and use problem-solving techniques. They are looking for employees who have “employability” skills such as self-management, the ability to work in a team, communications skills and the ability to apply numeracy and information technology (IT) skills. These basic and cognitive skills are required by employers everywhere, not just in Egypt; and they are wanted from students at all levels of education, whether they have a basic education, or general secondary, technical education or tertiary education.

Employers in Egypt tend to be highly critical of the quality of graduates of vocational education in terms of skills and relevance of their knowledge. Employers frequently express deep concern not only about their technical skills but also their communication skills, team work, problem solving, work attitude and in some cases even literacy (El-Ashmawi, 2011). This view is confirmed by several surveys and assessments, although mostly limited in scope and scale (see Boxes 4.2 and 4.3). Earlier enterprise surveys by the World Bank also identified an inadequately educated workforce as one of the main obstacles to economic development and competitiveness (World Bank, 2008). In 2008, 50% of firms viewed low labour skills levels as a major constraint for business in Egypt, among the highest share of comparable low- and middle-income countries (ETF, 2013).

Box 4.2 Views of employers in the tourism and ICT sectors

A 2009 European Training Foundation (ETF) survey of some 300 employers in tourism and ICT revealed that the majority of employers (85% in tourism and 84% in ICT) complained about skills deficiencies among young employees and recent graduates, in particular in relation to technical (professional) skills as well as practical aspects of work. Inadequate language and “soft” skills (such as communication and team working) scored high as well.

All the companies surveyed agreed on the importance of language skills and service attitude (100% said they were very important or important). The other most important characteristics were intellectual abilities (99%), followed by university degree (98%), availability to work overtime (96%), ability to work in teams (94%) and work experience (91%).

Source: ETF (2010), *Women and Work in Egypt: Tourism and ICT Sectors: A Case Study*, ETF, Turin.

Views of employers in the tourism and ICT sectors

As a response to skills gaps and skills shortages, some employers are looking for alternative solutions. Several large international enterprises, such as Mercedes Benz Egypt, have initiated company-based vocational education and training (VET) programmes in order to ensure an appropriate supply of skills. Another approach, for example among SMEs, has been to engage in public-private partnerships such as the dual system, *alternance* model, or other forms of co-operative relationship with VET providers outlined in Chapter 2. The third and major category of companies has no option other than to retrain new recruits internally, so that they can do their jobs.

In response to the glaring mismatch between labour demand and supply, and in recognition of the aforementioned initiatives, school-based VET provision is coming under increasing pressure to become more relevant to workplace realities and promote stronger employer involvement and work-based learning approaches.

Box 4.3 Local labour market mismatch in agriculture, construction and tourism

An ETF survey in 2009 found skills shortages and skills gaps in the three sectors investigated (450 interviews conducted in total).

In **tourism**, the 76% of employers identified skills shortages for waiters, 73% for room attendants and 57% for front desk and reception staff. While most employers reported skills gaps, the proportion of all employees seen to be not fully skilled in their jobs was highest among waiters and room-service staff (49% and 55%, respectively), with the main deficiencies in communication and service skills.

Most **construction** employers identified skills gaps among their employees (highest among bricklayers, 37%, plasterers, 34% and carpenters, 30%). Almost 96% of employers confirmed a widespread need for general skills unrelated to any specific task, including autonomy, responsibility, and personal and workplace safety.

Similarly in **agriculture**, the proportion of staff not fully skilled, according to employers, was highest among skilled labourers in pruning (37%), horticultural workers (33%) and to a lesser extent specialists in the maintenance of farm machinery (19%).

Source: ETF (2011b), Skills Matching for Legal Migration in Egypt, ETF, Turin.

Education and preparation for the world of work

“The reality is that neither higher education nor technical and vocational education and training have offered a critical level of skill enhancement that qualifies young people in the search for jobs in the formal economy.”
(UNDP, 2010)

The labour market changes and associated requirements outlined above have far-reaching implications for education and training in Egypt, for two main reasons. First, young people are not acquiring relevant skills for the available and emerging jobs – that is, the training component of schooling is dysfunctional. Employers have pointed to quantitative and qualitative skill deficiencies, in both technical areas (e.g. students have weak numerical skills, and they are trained on obsolete equipment and cannot use modern technology) and soft skills (e.g. poor communication and teamwork skills, and low levels of personal responsibility). Second, many young people are not developing the broader reasoning, discerning, imagining and adapting capacities needed for coping in the changing world in which they live and work – that is, the educative component of schooling is ineffective.

Both challenges need to be addressed. On the one hand, greater attention needs to be given to effective skills formation in areas that are relevant to the job market and increase the employability of all school leavers. On the other hand, deeper education is required to enable individuals – whether pursuing technical trades, professional careers, creative or entrepreneurial endeavours – to develop generic cognitive capacities, understand the limitations of their knowledge, appreciate diversity and build interest in learning continuously.

Inadequate outcomes from schooling reduce an individual’s future acquisition of knowledge and skills. People leaving education without a sufficient base for further learning have a diminished ability to adapt to change. Labour force participants who cannot adapt are left behind by the evolving economy, and the economy itself may well slip behind its competitors.

Adaptability requires the education system to shift its focus from credentials to competence. Competence may be understood as the application of knowledge, skills and attributes that allow individuals to perform at an acceptable level to meet complex demands, however novel or messy, at work and in the community and throughout life. Competence assures that unlearning, continuous updating and new learning is possible.

In several countries, co-operative processes involving government bodies, employers, unions, educators and trainers have worked to refine competencies, employability skills or “core skills for work” (see Box 4.4). These generic skills complement subject-specific knowledge and occupation-specific technical skills.

Box. 4.4 Employability skills in Australia

Core Skills for Work Framework, Australia

The Australian government has funded the development of the Core Skills for Work Framework which describes the non-technical skills, knowledge and understanding (often referred to as employability or generic skills) that underpin successful participation in work.

The Core Skills for Work Framework groups generic or employability skills into three Skill Clusters and ten Skill Areas while using a developmental approach to describe these skills at five different levels from novice to expert. The Skill Clusters and Skill Areas described in the framework are:

Cluster 1 – Navigate the world of work

- a. Manage career and work life.
- b. Work with roles, rights and protocols.

Cluster 2 – Interact with others

- a. Communicate for work.
- b. Connect and work with others.
- c. Recognise and utilise diverse perspectives.

Cluster 3 – Get the work done

- a. Plan and organise.
- b. Make decisions.
- c. Identify and solve problems.
- d. Create and innovate.
- e. Work in a digital world.

Employability skills in secondary schools

- literacy
- numeracy
- information and communication technology (ICT) capability
- critical and creative thinking
- personal and social capability
- ethical behaviour
- intercultural understanding.
- Employability skills for training package qualifications.

Box. 4.4 Employability skills in Australia (continued)

Employability skills are also sometimes referred to as generic skills, capabilities, enabling skills or key competencies. In Australia employability skills are:

- communication skills, which contribute to productive and harmonious relations between employees and customers
- teamwork skills, which contribute to productive working relationships and outcomes
- problem-solving skills, which contribute to productive outcomes
- initiative and enterprise skills, which contribute to innovative outcomes
- planning and organising skills, which contribute to long-term and short-term strategic planning
- self-management skills, which contribute to employee satisfaction and growth
- learning skills, which contribute to ongoing improvement and expansion in employee and company operations and outcomes
- technology skills, which contribute to effective execution of tasks.

Sources: Australian Government (2013), *Core Skills for Work: Developmental Framework: Overview*, Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education and Department of Education, Employment and Workplace Relations, Canberra, <http://industry.gov.au/skills/ForTrainingProviders/CoreSkillsForWorkDevelopmentalFramework/Documents/CSWF-Overview.pdf>

Box 4.4 also lists the generic skills identified for development during schooling. These are primarily the underlying learning abilities developed through interaction with learning materials, teachers and other students.

Finally, a set of generic skills, more integrated with the knowledge and technical skills formation of on-the-job learning, have been identified as part of formal training, including some training within schools (Box 4.4). Australia's Employability Skills Framework also includes 13 personal attributes. These are: loyalty, personal presentation, common sense, positive self-esteem, sense of humour, ability to deal with pressure, adaptability, commitment, honesty and integrity, enthusiasm, reliability, balanced attitude to work and home life, and motivation.

The need for a skilled and adaptable workforce

Investment in education and skills “helps to pivot an economy towards higher value-added activities and dynamic growth sectors” (ILO, 2008). As enterprises modernise and move up the value chain, labour productivity will depend on higher-order cognitive skills (analysis, problem solving) and behavioural skills (initiative, work effort). The shortage of educated workers with such skills constrains competitiveness, productivity and innovation (World Bank, 2010).

Development and modernisation of the industrial and service sectors mean a move towards jobs which require medium technology skill levels, and a smaller number of jobs requiring higher technical and managerial skills levels. With the ICT sector, the government of Egypt has shown that it can provide the climate to develop and grow a modern, productive sector of the economy and educate and train the personnel needed to attract investment. The lessons learned can be applied to other sectors, particularly the success story of co-operation between government, employers and education institutions.

Employers demand from employees a composite of generic skills, occupation-specific skills and the ability to learn and apply new knowledge and skills. To be successful, enterprises need their workers to be competent and productive but also to be able to innovate, to apply new processes and to operate new technologies. This necessitates a dynamic view of competence and work experience. “High-performance workplaces” based on their highly skilled workforce have a more positive prognosis in the global market.

To meet the need for a skilled and adaptable workforce, contemporary education systems themselves have to be responsive to changing needs and varying circumstances. The education system also needs to recognise the fact that their graduates will be working in jobs that do not yet exist, and that they may have to change employers and even industries and occupations over their working lives.

Approaches to learning based on mastering only what is taught can lead to outdated knowledge and know-how. Teaching methods that engage students in learning through inquiry, experimentation and discovery are more likely to build capacity for self-directed learning.

Additionally, and especially for transforming economies, having a more resilient workforce minimises the displacement costs from lost jobs due to restructuring, automation or off-shoring, as the affected workers are more able, as a consequence of having generic and transferable skills, to retrain for alternative jobs.

The main policy inference is that the need for broader life skills and generic, adaptable skills for work, necessitates curriculum orientations, teaching practices, and assessment methods which foster the development of those personal attributes in students.

Education as preparation for life, work and further learning

It has long been recognised that education has both intrinsic and instrumental value. On the one hand, its purpose is the development of the person, the cultivation of the mind and the formation of character, and the liberation of young people from the limits of their backgrounds. On the other hand, education is part of the socialisation of individuals as responsible members of the community, through the transmission of knowledge, induction into social norms and inculcation of shared values. Thus there is a tension between the individualistic and societal purposes of education. The ability of individuals to learn about innovations elsewhere; their capacity to create, analyse and reason; and their confidence to question and argue, can challenge accepted assumptions and mainstream practices. It is in this way that societies have progressed, albeit at times not without difficulty.

School-based education aims to enhance the performance of future adult roles – productive worker, continuous learner, nurturing parent and participatory citizen. To this end the years at school should be formative – developing curiosity and reasoning, finding a cosmopolitan rather than parochial outlook, building an understanding of the environmental heritage and the dynamics of change, and appreciating plurality. Education, when it is well-functioning, builds judgement, ethical behaviour and co-operative effort among youth which can contribute to national benefits that flow back to the individual, such as safety, culture, sense of community and good governance (UNDP, 2010).

The value of public education lies not only because individuals are provided with a good foundation of knowledge that they can use to maximise the opportunities

encountered in their lives but also because there is a national benefit to living in a society of educated people. This public benefit arises from a prospering economy fuelled by entrepreneurship and innovation, informed consumers that create a demand for sustainable and socially valuable products, and the election of just and democratic governments.

Among the economic benefits are increased tax revenues, reduced reliance on government social support, greater productivity, greater diversity of market goods and consumption and greater choice of human capital for public and private activities. Social benefits include social cohesion and national interest, reduced crime and greater trust, increased quality of life, increased charitable giving, volunteering and community service, and greater ability to adopt new ideas and technology (Institute for Higher Education Policy, 1998).

Education as a necessary but not a sufficient condition of progress

Egypt's challenge of catering for large and rapid growth in student demand has dominated policy attention over the last few decades. Consequently, the focus has been on supplying increased education services and facilities. That function has been seen as a public policy responsibility of the Education portfolio, regarded as part of social policy, related to family formation, community stabilisation and social induction. Education appears not to have been viewed from an economic perspective, other than from its public finance requirements.

A particular challenge is to build more effective links between strategies for improving education and training with strategies for integrating segments of the informal labour market into Egypt's formal economy. The team, having only a peripheral brief in this respect, was not able to investigate the issues and options in any depth, but formed a broad view that three avenues may be worth further exploration.

First, there are skills in demand in Egyptian society – such as trade skills in carpentry, bricklaying, electrical wiring, hairdressing, motor vehicle repairs and plumbing. Lack of proper skills formation and recognition poses several problems. On the one hand, there is a dangerous lack of standards, quality control, licensing and safeguards for Egyptian consumers. On the other hand, Egypt's capacity for innovation and attractiveness to the foreign direct investment the nation so desperately needs is at risk. A joined-up effort to raise standards and accredit skills in key areas of the informal economy could yield positive results. A revitalised TVET sector, with much greater private-sector involvement, could be enjoined to improve training in secondary schools for new entrants to the labour market, and offer convenient advanced training outreach services for young people and adults working in the informal economy.

Second, the informal sector provides multiple services in response to market demand, including professional services such as childcare, health care and hospitality. Serious public health risks arise from the absence of standards and quality control in areas such as the prescription and production of “remedies” and the amateur “treatment” of physical symptoms. Offering a pathway to formal credentials for workers experienced in the informal labour market, and involving education in the rudiments of professional knowledge and know-how, could help to reduce the community's exposure to risk. Tailored programmes in secondary schools, alongside generic curriculum offerings in areas such as nutrition, might also better prepare school leavers for diverse occupational destinations and living circumstances.

Third, better preparation in school for self-employment and micro-business management may enable individuals to adapt in the informal sector and improve their prospects for bridging across or transitioning to the formal sector.

Schooling for education

As noted above, schooling functions as a social control device in several respects, not least as a framework for ordered household activity. Routines of school attendance structure a range of individual and family activities and relationships. For Egypt, a major challenge is to move beyond this social function of schooling to its educative role – enabling students to learn and value learning. This is to place policy emphasis on the effectiveness of schooling, and to frame policy choices and priorities against the question: how well does schooling function to achieve expected learning outcomes?

Answers to that question require a clear delineation of expectations of student learning outcomes. In many countries, the vehicle for articulating learning outcomes is the national qualifications framework.

Active labour market measures

In addition to a macroeconomic environment that is conducive to sustainable jobs growth, the challenge of absorbing an increasing supply of labour requires a range of active measures. These measures can also assist the transition from school to work, and thereby raise the overall rate of labour absorption.

Career guidance

Career guidance can help to reduce school dropout rates, and help students make informed and considered study choices. Career advice is particularly useful for those young people who are most vulnerable when making the transition from school (Rothman and Hillman, 2008). Good career guidance provides accurate, comprehensive and up-to-date information on all the options available to a student, both within the school and elsewhere, at key points of transition, and on the progression routes leading from those options. The team found no instances of career guidance being available to secondary school students in Egypt.

Job search assistance

Most countries have dedicated services designed to help school leavers, technical college and university graduates, and unemployed persons find employment. Multiple factors are involved in effective job search, for example knowing what to look for and where to look, realistically assessing personal fitness to job prospects and requirements, preparing applications, presenting at interview, and keeping motivated after being rejected. The team found no policies or services in Egypt for job-search assistance, neither in local areas nor educational institutions.

Labour market information

Job search and career guidance need to be supported by comprehensive labour market intelligence about current and potential future jobs. While employers are the most likely source of such information there appears to be no structured labour market information system at national or local levels in Egypt. A number of Egyptian government departments and agencies (e.g. CAPMAS and the Ministry of Manpower and Migration)

as well as foreign donors (such as the EU) collect some information but it is not brought together and disseminated in useful ways, for either policy development or job search effectiveness. The Egyptian Observatory for Education, Training and Employment, responsible to the Prime Minister, was set up with support from the European Training Foundation to address these issues and included all key ministries, agencies, private sector representatives and NGOs on their steering group. However the Observatory does not appear to have had much support or funding. The government is not “joined up” across its departments and agencies in recognising the need for labour market intelligence in order to attract foreign investment, reform the education system, improve job search outcomes and reduce unemployment.

An initial conceptual framework for career guidance in education and TVET (ETF, 2010b) was prepared by a National Task Force and adopted by four ministries (Education, Higher Education, Trade and Industry, and Manpower and Migration) in 2010 but has since been neglected. Several subsequent reports (El-Ashmawi, 2011; TVET Reform Programme, 2012; World Bank, 2013) have stressed the need for a national system of career guidance at an early stage of a learner’s schooling, not least as an integral element of a strategy to improve the image and status of TVET (Zelloth, 2013, 2014).

Models in other countries suggest there is much to be gained from structurally engaging employer bodies and other stakeholders at a high level in setting directions and goals for career guidance and providing intelligence and feedback on progress towards them (see Box 4.4).

Work-based training for skills in demand

Employability can be enhanced via training programmes including work-based learning, formation of market relevant skills and building of social networks necessary for finding jobs.

Raising the level of technical skills is very much connected to opportunities for practical training in school workshops and work-based learning in enterprises. Egyptian TVET, in particular technical education is strongly school-based, whereas work-based learning is greatly under-represented. Work-based learning is the form of TVET closest to the labour market and a unique way of providing learners with both technical and social competences through a real life and work environment. As technological change occurs so rapidly, TVET institutions will be less and less able to keep pace with the rate of change and to afford costly replacement of equipment. Work-based learning will become more important and any future strategy will have to find a better balance between these two fundamental types of learning in TVET which may contribute to raise its attractiveness as well. In particular, work-based learning could also be applied to higher levels of qualifications and to white-collar jobs.

Entrepreneurship promotion

A substantial amount of literature suggests that entrepreneurship and self-employment are effective ways to foster economic progress and reduce unemployment among young people (see for instance, Thurik et al., 2007; Nieman and Nieuwenhuizen, 2009). Accordingly, targeting groups of young people through specific programmes to support entrepreneurship, and to promote entrepreneurial values and norms, could make employment policies more effective. In addition, improving access to the financial sector to meet the needs of micro-, small- and medium-sized enterprises is necessary to support young entrepreneurs. Entrepreneurship promotion for youth employment has been one of

the most widely implemented programmes in Egypt. Egypt's Social Fund for Development provided loans to youth to support project start-up and expansion. Between 1991 and 2007, the fund provided loans to small enterprises totalling EGP 7.1 billion. While venture capital provision is necessary, what is fundamentally important to an agenda for encouraging entrepreneurship is a cultural and legal acceptance of failure, including bankruptcy treatment.

While some young people who are unable to find employment might not be successful entrepreneurs, given their limited skills and experience (Barsoum, 2013), in view of the scarcity of jobs in the formal economy, self-employment and entrepreneurship are valuable, and often the only, career options for many school leavers. However, neither the general and technical education curricula and related teacher training programmes cover entrepreneurship sufficiently. Preliminary findings of an assessment by the Euro-Mediterranean Charter for Enterprise (ETF, 2013) indicates that understanding of entrepreneurship as a key competence is not well developed by the teaching profession and society at large. Egypt also has one of the lowest penetrations of entrepreneurship education in the formal education system of the 31 economies participating in the Global Entrepreneurship Monitor in 2008 (Sheta, 2012). Introducing a broader skills mix in TVET while raising the quality of technical skills would enhance both its effectiveness and attractiveness.

Future directions and policy options

From the foregoing discussion, a forward-looking agenda for Egypt might include consideration of the following initiatives:

- Set out an agenda to transform and integrate parts of the disproportionately large informal employment sector into the formal economy through targeted training to raise skill levels in key trades and service occupations.
- Establish a standing forum for consultation with employer bodies and their active engagement in design and evaluation of education and training interventions.
- Give much greater priority to updating and upgrading TVET;
- Establish a Labour Market Information Service reporting on trends in demand and supply for jobs by industry and occupation, and by governorate and district; indicators of areas of skills shortage and surplus; and other information relating to job opportunities and employment conditions.
- Develop a programme for making careers guidance available to secondary school students.
- Build the development of generic cognitive skills and broad employability skills into the secondary curriculum.
- Trial a programme to help people develop skills for self-employment.

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Chapter 5.

The quality of teachers and teaching

This chapter covers the evolution of views and associated research findings relating to the role of teachers and models of teaching. It also covers pre-service, in-service teacher education, and the continuing professional development of teachers. The chapter applies these perspectives in assessing current Egyptian practices and identifying areas for improvement in the selection, preparation and development of teachers.

Teaching's claim to professional status and recognition

Much has been written on teaching's claim to professional status (see Burke, 2002). Many authors have treated "profession" as a descriptive term and analysed teaching from a largely sociological perspective. Frequently, they have applied checklists of characteristics culled from the long-established professions to other occupations, such as teaching, to gauge their professional status. The sociologist, Dreeben (1970) regarded this approach as singularly sterile since it treats all characteristics as equally important and fails to distinguish sufficiently between core generating traits and derivative ones.

The professional status of an occupation can be gauged on the basis of an analysis of the area in question and on an examination of the level at which claimants to professional recognition are operating, and their competence to do so. For Dreeben (1970) "the core of the issue is whether the members of an occupation have mastery of a viable technology applicable to human problems, and whether they can supply the resources ... which are necessary to keep that technology alive" (pp. 200-01). For him professionals profess competence and trade competence for recognition. For Dreeben these are the core requirements and generating traits of a profession.

Any attempt to gauge teaching's claim to professional recognition must respond to the following questions: 1) is teaching/learning complex and is its complexity known and understood? 2) Is it supported by an adequate knowledge/research base to guide current approaches and practice? 3) Is that knowledge base necessary for the successful execution of the job? 4) Are the individuals claiming professional recognition operating at a critical decision-making level or do they routinely carry out the instructions of others?¹ There is widespread agreement among educationalists that the answers to these questions are now all "yes". And if the professional person is the one that makes and implements the critical decisions, in the classroom context that is clearly the teacher irrespective of how well-equipped or ill-equipped he or she is (Burke, 1996).

In some developed countries and many developing countries teaching is still viewed as routine and teachers are regarded as technicians. That view, however, has been widely rejected by very many prominent educationalists. It is argued that the knowledge base of teaching, our insights into the complexity of the teaching/learning process, and our understanding of child/adolescent development have reached a level that puts teachers, potentially at least, within the professional arena (Berliner, 2000; Burke, 2000, 2002; Crowe, 2008; Good, Biddle and Goodson, 1997; Shulman, 1987b, 1998). Teachers' decisions can now be informed by knowledge and directed by theory to an extent that was not possible up to recent times. Clarke (1988) claims that research on teacher thinking has "documented the heretofore unappreciated ways in which the practice of teaching can be as complex and cognitively demanding as the practice of medicine, law, or architecture" (p.8). Shulman (1984) goes further when he argues that the teacher dealing with one of the reading groups in her class, while keeping a number of other groups gainfully engaged, is simultaneously performing a more complex set of tasks than most doctors would face in a lifetime of practice. In a later article he concludes: "The only time a physician [doctor] could possibly encounter a situation of comparable complexity [to that of a teacher] would be in the emergency room of a hospital during or after a natural disaster" (Shulman, 1987a: 376).

In support of these contentions, Howey and Zimpler (1999) claim that, at its best, teaching is highly clinical in nature and rooted in an intellectual exercise that has distinctive properties of teacher reasoning. Teachers, according to Griffin (1999), need to

be able to make “multiple, often simultaneous, decisions, related to content, pedagogy, student relationships, praise and censure, materials of instruction, interactions with colleagues and others ...” (p. 8). In his review of the relevant research, Berliner (1987) concluded that teachers make up to 30 non-trivial work-related decisions every hour in a classroom context where an estimated 1 500 interactions may take place daily between teachers and their pupils. Such decisions, like any other clinical decision about children, are critically important to the pupils who are directly affected by them, and to their parents. If there is any doubt in this regard, one has simply to reflect on the impact of an unfair, unjust or wrong decision that a teacher made about oneself or simply observe the effects of even the most “insignificant” teacher decisions on one’s own children.

The foregoing is not a claim that all teachers, any more than all members of other professions, can justifiably claim professional recognition. If professionals trade competence for recognition, as Dreeben (1970) says, then incompetent members of any profession are not entitled to such recognition. Herein lies the challenge to all teachers, and to teacher educators in pre-service education of teachers (PRESET), in-service education of teachers (INSET) and continuing professional development (CPD), to ensure levels of up-to-date knowledge and expertise that will enable classroom practitioners to competently take and implement the many critical decisions that confront them on a daily and hourly basis. The challenge is even more extensive when we remember that all teachers – competent/incompetent, trained/untrained, well trained/badly trained – make the same decisions but with different levels of competence/incompetence. This brings the challenge of professionalism and professional education more clearly into focus. In this regard Denmark (1985) said: “Professional status is important not because of what that status will mean for us individually but rather because of its import for the quality and character of teaching in our schools” (p. 47).

This chapter will examine current PRESET, INSET and CPD in Egypt against this mirror of international thinking and current good practice in the initial preparation and ongoing professional development of teachers.

Arguments and evidence supporting teaching reform

Impact of teachers on the learning of pupils

While the findings of earlier research on the factors affecting student learning, and the outcomes of decades of reform efforts in different countries, were mixed, the evidence is mounting that teachers are the single most important influence on student achievement (Cochran-Smith and Zeichner, 2005; Fullan, 2006; Swille and Dembèle, 2007; Cochran-Smith et al., 2012). Furthermore, research evidence also indicates that at both college and school levels, how lecturers/teachers teach is an important determinant of how students learn (Beusaert et al., 2013).

The OECD (2005) sees teacher quality as the most important determinant of student learning that is under the direct control of policy makers. For Feiman-Nemser (2001) “what students learn, is directly related to what and how teachers teach; and how teachers teach depends on the knowledge, skills, and commitments they bring to their practice...” (p. 1013). This, she says, has direct implications for initial and ongoing teacher education for “if we want good schools to produce more powerful learning on the part of students, we have to offer more powerful learning opportunities to teachers [in their training]” (pp. 1023-14). Hawley and Valli (1999) agree with many others that the training and professional development of teachers is the keystone to educational improvement. In their

thematic synthesis of pedagogical renewal and teacher development in sub-Saharan Africa, Dembélé and Miaro-II (2003) conclude: “Quality will happen at the classroom and school level or it will not. Ultimately, quality education is a function of the interactions between teachers and students in classrooms”.

A study by Wenglinsky (2002) marked a significant advance over previous research on the impact of teachers. Using data from the 1996 National Assessment of Educational Progress (NAEP) in mathematics for Grade 8 students in the United States, he explored the link between teacher classroom practices and student academic performance.² The study found that the impact of classroom practices on student learning, when added to those of other teacher characteristics, are comparable in size to student socio-economic status, indeed even somewhat greater. He also found that teacher classroom practices had the greatest impact on student achievement, out of all the ingredients that comprise teacher quality. Professional development related to these practices was the next greatest, while teacher characteristics external to the classroom (such as the educational attainment of teachers), had the least impact.

Wenglinsky concluded that schools matter because they provide a platform for active, rather than passive, teachers. Passive teachers, he says, leave students to perform as well as their own resources allow whereas active teachers, using good teaching tactics and classroom practices, press all students to achieve regardless of their backgrounds. Where schools lack a critical mass of active teachers, he says, students will be no more or less able to meet high academic standards that their own resources and home resources allow, whereas schools with a critical mass of active teachers can help students to reach higher levels of academic achievement than they would otherwise have done. Wenglinsky concludes: “Through their teachers, schools can be the key mechanism for helping students meet high standards” (p. 26).

Greaney (1996) and Torres (1996) claim that, because of illiteracy among parents, dependence on teachers is much greater in developing than in developed countries. In similar vein Bacchus (1996) argued that, given the lack of teaching/learning resources, the poorer a country, the greater the impact teacher quality is likely to have on student achievement (cited in KK Consulting Associates, 2001). According to Dembélé et al. (2003), “there is a consistent finding across studies that school has a stronger influence on student achievement than home and other external factors in developing countries, compared with developed countries...[since] the sources of school-sanctioned knowledge and skills are more varied in developed countries than in developing countries” (p. 27).

As in developed countries, research in developing countries also found that better qualified teachers had a greater impact on student learning than poorly trained or untrained teachers. Results from the Southern and Eastern Africa Consortium for Monitoring Educational Quality for Mozambique, for instance, found that the achievement levels of pupils of teachers with lower qualifications, and those of untrained teachers, tended to be lower than the results of pupils taught by fully trained and better qualified teachers (Mozambique Country Report, 2008). Other studies using meta-analysis have also concluded that the influence of schools/teachers on pupil learning in developing countries is more important than the effect of other external factors (Riddell, 1989, 1997; Scheerens, 1999, 2000). Carron and Chau (1996) argue that such evidence provides grounds for considering the school as “the best level of intervention for improving quality education” in developing countries.

“Teachers, as this report repeatedly emphasises, are the strongest influence on learning. ... As the experience of countries that have achieved high learning outcomes clearly shows. ... investment in teachers and their professional development is critical. ... Teachers, critical to any reforms to improve quality, represent the most significant investment in the public sector budget.”
(UNESCO, 2004).

Impact of teacher educators on the teaching of teachers

If, as the research indicates, teachers’ knowledge and expertise are significant determinants of school effectiveness, then teacher education would seem to assume a position of critical importance in the delivery of high-quality education by teachers.

Dembélé and Miaro-II (2003) claim that, while results are mixed, “most studies did agree that teacher education makes a difference in developing countries, including the African region” (p.21). They cite a number of older studies in support of this claim. More recently the READ Educational Trust study in South Africa found improved reading on the part of students taught by teachers who had been trained to use specific skills for the teaching of reading (Schollar, 2001). Similarly, teachers trained to use paired reading for 20 minutes a day in Sri Lanka led to significant gains by the pupils involved – approximately 3 times greater than the control group (Kuruppu, 2001).

Research has also found that the most competent teachers are those who have a good mastery of the content knowledge to be taught and have also studied education (Greenberg, 1983; Erikson and Barr, 1985; Evertson, Hawley and Zlotnik, 1985; Ashton and Crocker, 1987; National Commission on Teaching and America’s Future, 1996; Darling-Hammond, 1998; see also Cochran-Smith et al., 2012). Darling-Hammond (2000) claims that, contrary to common belief, there is strong research evidence to show that knowledge of teaching and learning processes is more closely associated with student achievement than content knowledge of the subjects being taught.

Teachers with greater training in teaching methodology have proved to be more effective than those with less (Guyton and Farokhi, 1987; Kennedy, 1991). Teachers who have spent more time studying teaching have proved to be better teachers, especially in the fostering of higher-order thinking skills among students and in catering for individual needs (National Commission on Teaching and America’s Future, 1996; Darling-Hammond, 1998). In this regard the Wenglinsky (2002) study has this to say: “Students of teachers who can convey higher-order thinking skills as well as lower-order thinking skills outperform students whose teachers are only capable of conveying lower-order thinking skills” (p. 5). Furthermore, schools where teachers receive professional development in higher-order thinking skills are more likely to have students engage in hands-on, rather than routine, learning, and students who so engage score higher in mathematics assessments. In addition, students whose teachers received professional development in learning how to teach different groups of students substantially outperformed other students.

The bulk of accumulated evidence shows that beginning teachers who are provided with continuous support by skilled mentors are less likely to leave the profession, are more likely to get beyond personal and class management concerns quickly, and come to focus on student learning sooner. The absence of such support has been found to lead to higher attrition rates and lower levels of teaching effectiveness (National Commission on Teaching and America’s Future, 1996; Darling-Hammond, 1998).

In addition, there has been considerable comment on the critical importance of teacher education from personnel with long experience in and research on education in developing countries. Over 40 years ago Beeby (1966) argued that, if attempts to change education in developing country schools were to be effective, they would have to be linked to improvements in the training of teachers and that the pace of change in teacher training would determine the speed of change in education systems. Following their Multi-Site Teacher Education Project in Ghana, Lesotho, Malawi, South Africa, Trinidad and Tobago, Lewin and Stuart (2003a), concluded that teacher education had received little attention from policy makers, donors or researchers. They state:

Primary teacher education policy has often been seen as an afterthought to policy on education for all. It is almost as if it is a residual concern that has to be addressed in the wake of policy on universalising schooling, which has a much higher public profile and much catalysis for development agencies. (p. 183)

While there is some evidence of changing attitudes towards teachers and teacher educators in developing countries, there are not as yet enough concrete examples of increased investment in them to demonstrate deep conviction on the part of policy makers and funding agencies as to the critical importance of part they play in the determination of school effectiveness. However, with the change of emphasis in developing countries from quantity to quality in education, questions of how well pupils are taught, and how well teachers are trained, are beginning to be seen as important. The Education for All Global Monitoring Report, 2005 acknowledged this when it stated: “It seems highly likely that the achievement of universal primary education will be fundamentally dependent on the quality of education available. ... How well pupils are taught and how much they learn can have a crucial impact on how long they stay in school and how regularly they attend” (UNESCO, 2004: 28).

However, the Joint Evaluation of External Support to Basic Education: Final Report (Netherlands Ministry of Foreign Affairs 2003)³ is critical of the role played to date by education policy makers in developing countries, of their failure to recognise the critical role teachers play in the determination of school effectiveness, and their consequent failure to support it accordingly. It states:

Teachers are obviously at the centre of national efforts to use external support to accelerate progress towards EFA [Education for All] goals [but] efforts to improve basic education receiving external support most often fail to take account of the needs and interests of teachers. ... Teachers seem to be more acted upon than acting. ... They are viewed fairly often as an asset to be managed ... an impediment to be overcome, rarely as change agents at the centre of efforts to improve basic education ... a consequence of thinking about education as *service delivery* and teachers as those who *deliver services* developed by others; rather than seeing the teachers as an integral part of the design and development of approaches to education. (Netherlands Ministry of Foreign Affairs, 2003: 51).

The report concludes that, if externally supported basic education is to be more effective, “greater credence must be given to the principle of teachers as partners and as owners in the development of primary education” (p. 54).

What is notable in the Education for All Global Monitoring Reports (UNESCO, 2004, 2005), and in Dean Nealson’s evaluation of World Bank support to primary education (World Bank, 2006), is a lack of recognition of the critical role that teachers play in the determination of school effectiveness, of the potentially very significant contribution that

teacher educators can make to the effectiveness of teachers, and of the need to invest in pedagogical capacity building for teacher educators. Continuation of this short-sightedness and neglect can scarcely be countenanced if Rosa Maria Torres (Education Advisor at UNICEF Headquarters, New York) is correct in her contention. “Without reform of teacher education” she argues, “there will be no reform of education” (1996). Her critique is so relevant in the present context of Egyptian education that it is worth quoting at some length. She wrote:

What many policy-makers and reformers have not yet understood is that teacher-education reform is a sine qua non [indispensable] condition for educational reform and vice versa. ... While policy formulation elicits the ideal teacher, policy implementation does not take the required steps to build such a teacher. ... Teacher education continues to have a marginal place in educational policies, generally far behind – in terms of interest and budget allocation – school buildings and educational technology (including textbooks). ... The issue of teachers, and that of teacher education in particular, emerges as one of the most critical challenges of educational development.

The modern discourse on teachers – which proclaims autonomy, empowerment and professionalisation – has come together with a deterioration of the teachers’ status, salary, knowledge and self-esteem. Teachers are viewed as one more input together with textbooks, time of instruction or homework.

(Torres, 1996: 447-8 ,451)

In view of the foregoing, capacity building for teacher educators would seem critically important. In the allocation of resources, however, such capacity building targeted at teachers, and especially teacher educators, has generally fared badly (Lewin and Stuart, 2003). Highly visible interventions that lend themselves to tight management and quick measurement seem more attractive to ministries of education and funding agencies than less eye-catching and more difficult-to-quantify interventions, like capacity building, that require more sustained and long-term inputs (see Box 5.1).

Box 5.1 Investing in “things” rather than teachers.

“The conventional education model has shown a clear predilection for investing in things rather than people. Educational infrastructure has been afforded a higher status in the budget ... than the human resources for the education sector. Human development and capacity building are complicated endeavours, not easily quantifiable, and do not yield tangible results in the short-term.

There is an overall trend that aims at compensating teachers’ deficient general education and professional training, not with more and better teacher education, but with educational technology ... While teachers and teacher education tend to be underestimated, textbooks [and one might add, ICT] currently tend to be overestimated. In many developing countries, instructional materials occupy the second and even first place in terms of allocation of resources ... teacher training usually ranks third or even fourth.

Good textbooks without competent teachers are fruitless investments. ... [However] it is not possible to choose between investing in textbooks and educational technology or investing in teachers. Good education requires both. However, from the point of view of learning and its improvement, teacher education undoubtedly has priority.

Source: Torres, R.M. (1996), “Without the reform of teacher education there will be no reform of education”, *Prospects*, Vol. 26/3, pp. 447-467.

The fundamental error in debates on the relative impact of various factors on the effectiveness of teaching and learning is to treat teachers as just one “input” among all other “inputs”. It must be remembered, however, that teachers are educational agents while textbooks, technology, teaching materials, and other aids of this kind, are educational tools the value of which is determined by the expertise of those who use them. Just as good woodwork tools are of little use to a non-carpenter, so textbooks and other aids/equipment are of little value to teachers who have not been trained in their effective use.

The foregoing information on teaching, teachers and teacher educators provides a lens through which current approaches in Egyptian schools and teacher education institutions can be viewed.

Critique of traditional approaches to pre-service education of teachers

The preparation and professional development of teachers is a contested area worldwide and debate in this area has been intense for several decades. While there has been and still is a diversity of provision, clear patterns of good, research-based practice have emerged and have been well documented (Hargreaves, 2003; OECD, 2005; Schulle and Dembélé, 2007; O’Donoghue and Whitehead, 2008; Conway et al., 2009). The shortcomings of traditional approaches are highlighted by the emerging consensus as to what constitutes good practice in teacher preparation and development. Together they provide a measure against which current practices in Egyptian teacher education can be judged.

Lack of integration in programmes

In their review of 93 empirical studies of how beginning teachers learn to teach, Wideen et al. (1998) concluded that the implicit theory underlying traditional teacher training was based on the view that learning to teach is a process of acquiring propositional knowledge about teaching in college/university and applying it later in schools. Research studies lend little support to the effectiveness or appropriateness of models of teacher preparation based on that view (Zeichner and Tabachnick, 1981; Fisher, 1992; Sprinthall, Reiman and Thies-Sprinthall, 1996; Kortagen and Kessels, 1999).

Traditional programmes have suffered from a critical lack of integration between the component elements. In this regard Feiman-Nemser (2001) has noted:

The typical pre-service programme is a collection of unrelated courses and field experiences [and] is a weak intervention compared with the influence of teachers’ own schooling and their on-the-job experience. ... Professional development consists of discrete and disconnected events. ... Conventional programmes of teacher education and professional development are not designed to promote complex learning by teachers or students. ... Too often teacher educators do not practice what they preach. Classes are either too abstract to challenge deeply held beliefs or too superficial to foster deep understanding. ...All of this reinforces the belief that the classroom is the place to learn to teach. (p. 1049)

Not only has there been a lack of integration between the courses that constitute the professional element of PRESET programmes, but there is a lack of critical connection between those courses and what happens in teaching practice placements. In teacher education, as in other professional programmes, the practicum cannot be developed

effectively in isolation from the overall training programme. It must be an integral part of the overall programme and reflect its approach and orientation. This means that the entire programme should feed into, support and inform what is done in the teaching practicum. No faculty members, therefore, can be exempted from involvement in such an integrated programme. For this reason, a critical element in determining the effective integration and long-term impact of PRESET programmes will be pedagogical capacity building for faculty and all others involved in programme delivery and teaching practice supervision.

In many countries, including Egypt, the study of academic subjects in traditional PRESET programmes usually takes place in other faculties or departments and, by and large, operates separately from what goes on in the faculties of education. This helps to create a dichotomy between subject-matter knowledge and pedagogy. Academic departments tend to focus solely on the mastery of content knowledge in their courses, believing that those who succeed in this regard will be able to teach that content effectively to school students. The assumption that mastery of content is *the* major prerequisite for successful teaching is still fairly widespread (cf. Adler, 1982; Ball et al., 2008; Education Next, 2002). While teachers cannot teach what they do not know, and are in danger of misrepresenting material to students if they do not understand how scholars in different fields think differently about their subject areas, research indicates that content knowledge on its own is no guarantee of effective teaching (Ball and McDiarmid, 1990; Murray, 2008; Weiland, 2008).

The assumption that the university study of academic subjects will cross-fertilise the subsequent teaching of those subjects in schools has been so strong that, until recent times, there seemed to be no need of proof to verify something widely regarded as self-evident. However, with the exception of secondary school mathematics teaching (and in some cases, science), research has shown this relationship to be weak or non-existent (Menand, 1997, 2001; Floden and Miniketti, 2008; Weiland, 2008; Cochran-Smith et al., 2012). Furthermore, a number of studies have found that students who majored in academic subjects at university do not teach those subjects better in schools than non-majors (Kennedy, 1991; Greaney et al., 1999). Bennett and Carré (1993) summarise current thinking in this regard well when they say: “Subject-matter knowledge is a necessary but not sufficient ingredient for competent teaching performance” (p. 215).

Pedagogical content knowledge

The most notable attempt to address the dichotomy between pedagogy and subject-matter knowledge in teacher education has been made by Hasweh (1985, 2005, 2013) [in press] and Shulman (1986, 1987b, 1998) with their development of the concept of pedagogical content knowledge (PCK). For them PCK is a specialised kind of knowledge that distinguishes teachers from others who study the same subject areas but not with a view to teaching them. PCK includes not only mastery of the content to be taught, but also the development or construction of a range of skills for teaching that content to students by means of illustrations, demonstrations, examples, analogies and other proven teaching techniques that make the subject comprehensible to others. PCK is essentially a collection of teachers’ pedagogical constructions. These enable teachers to build bridges between their sophisticated understanding of subject matter and their students’ developing understanding, and to adapt their instruction to the varying ability levels and other characteristics of students. Success in teaching, therefore, requires not just knowledge of content of particular subjects but, rather, an understanding of their central conceptual and organising principles in sufficient depth to construct ways of teaching them and taking students to the heart of them in a manner appropriate their age

and context. For this reason Goodlad (1990) says that “teachers learn the necessary subject matter twice – the first time in order that it be part of their being, the second time in order to teach it” (p.52). From the perspective of becoming an effective teacher, Shulman (1998) sees as much value accruing from situated teaching practice, and research related thereto, as from the study of the academic subjects themselves (see also Weiland, 2008). In an earlier publication Shulman (1986) said: “Mere content knowledge is likely to be as useless pedagogically as content-free skill” (p.8). Kennedy (1991) suggested that one of the reasons for her finding that student teachers who have majored in certain academic subject areas do not teach those subjects better than non-majors, is a lack of emphasis on subject-related PCK in their training.

For Darling-Hammond (2008), becoming a teacher entails not only learning to “think like a teacher” but also to “act as a teacher”. This will require the integration of the theoretically based knowledge, normally taught in college or university in the form of coursework, with experience-based knowledge located in the practice of teachers and the realities of schools. Establishing and maintaining the “connective tissue” between coursework and clinical work in teacher preparation programmes is, according to Feiman-Nemser (2001), a perennial challenge for teacher educators. This challenge became more acute with the absorption of teacher education into the university sector where the tendency has been to concentrate on and frontload coursework and pay insufficient attention to clinical experience. A growing body of research confirms that where coursework and fieldwork are undertaken simultaneously, it supports student learning more effectively and student teachers understand both theory and practice differently (Darling-Hammond and Bransford, 2005). Failure to maintain this connection is likely to “render the coursework much less powerful and productive than might otherwise be the case” (Darling-Hammond, 2008: 1321).

The foregoing would seem to indicate the need for a radical rethinking of teacher education programmes in Egypt (as in other countries) and a restructuring of their component parts to provide students with an integrated experience of coursework and classwork that are critically and transparently connected with each other. Integration of the academic subjects studied by student teachers and the professional components of PRESET programmes needs to be addressed. The integration of the theoretical components, practical courses, and school-based practicum experiences that constitute the professional part of programmes needs particular attention.⁴ It is unrealistic to expect inexperienced student teachers (or even practising teachers) to successfully accomplish such integration if those planning and providing the programmes have not themselves addressed the issue and have not transparently organised the courses to fit in with a clearly articulated conceptual framework for the initial preparations and further professional development of teachers.

It is clear that critical and difficult policy decisions regarding the foregoing issues will have to be contemplated by those responsible for the development of teacher education in Egypt and unprecedented reforms will have to be considered by those involved in the delivery of PRESET, INSET and CPD to trainee and practising teachers.

Critique of traditional approaches to INSET and CPD⁵

High-quality professional development is a central component in almost every effort to reform and improve teaching and learning. The aim of such professional development is usually threefold: 1) to improve teachers’ classroom practices; 2) to update teachers’ professional knowledge; and 3) to improve student learning outcomes.

While current provision for teacher professional development in Egypt is impressive in some respects, it does exhibit characteristics of approaches to INSET and CPD that have been implemented in other countries with disappointing results. This report will examine successful and unsuccessful approaches, citing expert opinion and research relevant to each, and identifying the implications of findings for the further development of INSET and CPD in Egypt.

Focus on quality rather than quantity

In developing countries the logistics of delivery structures for INSET and CPD, along with provisions for accrediting, supporting, monitoring and evaluating them, often take precedence over concerns about the quality of what is being delivered and its relevance to the identified needs of teachers. While logistical arrangements are necessary to ensure effective delivery of training, they do not in themselves guarantee the quality of what is being delivered. Furthermore, both experience and research indicate that while legislation or regulation may ensure compliance with INSET/CPD requirements, they are not effective in motivating teachers towards professional development (Guskey 1995, 2002). Putting delivery structures in place and formulating laws to regulate the entire training/retraining process is, in reality, the easier part of the entire reform process. Ensuring the quality and relevance of what is being delivered is the most challenging element of the undertaking since this will require ongoing, up-to-date pedagogical capacity building on the part of those developing and delivering the programmes and the administrators overseeing that delivery.

Conditions for successful training/retraining

There is cogent research evidence to support the claim that teachers experience much more powerful learning when INSET/CPD is related to their felt needs, directly connected to their work with students, linked to the subject matter and the concrete tasks of teaching, organised around problem solving, informed by research, and sustained over time by regular contacts and inputs (Darling-Hammond and McLaughlin, 1995; Guskey, 1995; National Commission on Teaching and America's Future, 1996; Darling-Hammond, 1998; Hawley and Valli, 1999; Guskey, 2002; Schwille and Dembélé, 2007). Set against this, the research evidence also suggests that INSET/CPD generally tends to be top down and provider driven and that the majority of teachers have little say in what or how they learn on the job (Blackburn and Moisan, 1987; U.S. Department of Education, 1994; Eraut, 1994; EURYDICE, 1995; Burke, 1995; National Commission on Teaching and America's Future, 1996; Guskey, 2002; Schwille and Dembélé, 2007).

Reviews of research on professional development provision have consistently found that most programmes are ineffective (Cohen and Hill, 1998, 2000; Kennedy, 1991; Wang et al., 1993). Guskey (2002) suggests that the majority of programmes do not succeed because they fail to take account of two critical factors: 1) what motivates teachers to engage in professional development; and 2) the process through which change in teachers typically occurs. While engagement in INSET/CPD is often mandatory, the vast majority of teachers, he says, engage in professional development to increase their effectiveness judged by the outcomes that teachers use to gauge their level of success. These include not only achievement indices, but also students' behaviour, motivation to learn and attitudes to school. In developing country contexts, financial incentives and/or other rewards may be significant factors in motivating teachers to participate in INSET/CPD.

It has been argued (Hawley and Valli, 1999) that, just as schools must be student-centred, INSET and CPD must be learner (i.e. teacher) centred and focused on teachers' identified needs. In this regard, Fullan and Miles (1992) claim that teachers tend to be quite pragmatic in what they expect or hope for from professional development, that is, specific, concrete, and practical ideas that directly relate to the day-to-day operation of their classrooms. They argue that professional development programmes that fail to address these felt needs of teachers are unlikely to succeed. Furthermore, Guskey (2002) argues that the manner in which effective change occurs among teachers is not a linear process from theoretical persuasion to practical implementation. Rather, teachers are persuaded of the value of proposed changes when they experience successful implementation of those changes and witness improvement in student outcomes. In other words, change is primarily an experientially based learning process for teachers. While theoretical arguments and research evidence in favour of change are important, the actual process of teacher change is more cyclical than linear with attitudes altering in the face of concrete, experienced evidence of positive outcomes. Simply put, for teachers "seeing is believing" and any professional development programme that neglects this is unlikely to motivate teachers adequately or be effective in its impact on classroom practices of participating teachers.

The traditional mode of in-service provision tends to be short one-off courses of lectures, workshops, seminars, and qualification programmes with little or no follow-up. For Fullan (1993) such offerings have been the norm in traditional INSET/CPD. They have involved "experts" exposing teachers to, or training them in, new practices often in one-off in-service sessions. The success of these events was usually gauged on the basis of a "happiness quotient" which measured teachers' satisfaction with the in-service experience rather than the actual impact on teaching and learning in their classrooms. He concluded: "Nothing has promised so much and has been so frustratingly wasteful as the thousands of workshops and conferences that led to no significant change in practice when teachers returned to their classrooms" (Fullan, 1991: 315).

Current thinking on INSET/CPD envisages the kind of professional conversation that leads to the development of "communities of practice" among teachers. Feiman-Nemser (2001) describes this well when she says:

The kind of conversation that promotes teacher learning differs from the usual modes of teacher talk which feature personal anecdotes and opinions... Professional discourse involves rich descriptions of practice, attention to evidence, examination of alternative interpretations and possibilities. ... What distinguishes professional learning communities from support groups ... is their critical stance and commitment to inquiry. ... As teachers learn to talk about teaching in specific and disciplined ways and to ask hard questions of themselves and others, they create new understandings and build a new professional culture. Over time, they develop a stronger sense of themselves as practical intellectuals, contributing members of the profession, and participants in the improvement of teaching and learning. (p. 1043)

Those developing policy for INSET/CDP provision in Egypt and the related delivery strategies would be well advised to take these research findings into account and develop programmes that are less top down and more teacher focused in their content and delivery mode. If the focus shifts more to catering for teachers' identified needs, in time the locus of change/reform will have to shift more to schools and/or clusters of schools which, in turn, will have to be given more responsibility and funding for planning and arranging

their own professional development. This, however, is a challenging transition for centralised systems of education to make.

Guiding principles for reform of PRESET, INSET and CPD

The following principles reflect changes in the knowledge base of teaching, new thinking on the training of professionals, and good practice in the preparation and professional development of teachers. Each has implications for the reform of teacher education in Egypt.

Recognition of the complexity of teaching, learning and teacher education

The structure and content of teacher education programmes should reflect the complex nature of teaching as it is now understood and focus on providing student teachers with the resources (knowledge, skills and dispositions) for carrying out this activity. This will involve “strategic understanding”, “the careful confrontation of principles with cases, of general rules with concrete documented events... a dialectic of the general with the particular in which the limits of the former and the boundaries of the latter are explored” (Shulman, 1986: 13).

Since uncertainty, complexity and change are core characteristics of all professions (including teaching), professional programmes must equip trainee and practising teachers to cope with the reality of a constantly evolving knowledge base and develop, as Dewey (1904) said, as “students of teaching” and not merely as classroom technicians.

Since the transition from coursework to classroom (from theory to practice) is no longer considered a linear process that trainee teachers can themselves handle, competent mentoring is now seen as a prerequisite to the effective education of all professionals. However, if mentors are to assist student teachers in seeing the interconnections between the various components of a professional programme and their implications for school functioning and actual classroom practice, they themselves must have a comprehensive and up-to-date understanding of overall programme content and rationale. This is problematic in most professional programmes since individual faculty members tend to concentrate largely on their own areas of expertise. Provision of competent mentoring, and the professional development of mentors within faculties, within schools and in the MOE, will be a major long-term challenge for all involved with, or responsible for, PRESET, INSET and CPD in Egypt.

Focus on classroom practice

According to Griffin (1999), the ultimate goal should be to build context-sensitive teacher education programmes (i.e. related to real-life teaching and learning situations), in which components are inter-related and cumulative, and that are reflective. Classroom practice should be the fulcrum around which PRESET, INSET and CPD revolve and provide a point of reference for integrating all the elements (theoretical and practical) of individual courses into a coherent whole. In the case of PRESET, teaching practice should grow out of and feed back into an overall integrated programme. If teacher educators do not accomplish the task of transparent and integrated planning, there is little prospect of PRESET students or INSET teachers being exposed to or knowingly experiencing a coherent programme of professional development.

Developing a repertoire of understanding and skills

The goal of teacher education is not merely the mastery of specific skills but developing the ability to use multiple skills flexibly, consistently and appropriately in whatever situation teachers find themselves, whatever subjects they are teaching, and whatever pupils they are dealing with. In keeping with this approach, Alexander, (1995) has described the goal of teacher education as “fitness for purpose”. This implies that “the effective teacher is someone with ...a repertoire of diverse organisational strategies and teaching techniques, grounded in clearly-articulated goals and secure knowledge of subject-matter and pupil learning, who then selects from this pedagogical repertoire according to the unique practical needs and circumstances of his or her professional situation rather than the dictates of educational fashion, ideology or habit” (p. 2).

Teachers in developing countries seldom, if ever, see a variety of teaching skills either in school or in college or university. They therefore model their own teaching on the teacher-centred, transmission-oriented approaches through which they themselves were taught (Lewin and Stuart, 2003; Schweisfurth, 2011). On learning of child-centred, discovery-oriented methods of teaching and learning, the tendency (often encouraged/mandated by policy makers, sometimes with the support of ill-advised consultants) is to abandon traditional approaches altogether (see Schweisfurth, 2011 and Thompson, 2013). Yet the reality of teaching in developing countries like Egypt is that classes are often large, facilities poor, teaching aids scarce, and that societies tend to be more authoritarian and adult-centred than child-centred. In face of such realities and in the interests of implementing realistic change, it is important that teachers develop a repertoire of teaching skills, including traditional teacher-centred teaching skills, and that teacher educators produce teachers who are fit for purpose in the contexts in which they are likely to be teaching (see Box 5.2). In Egypt’s case this will involve teaching large classes for the foreseeable future.

Box 5.2 The need for a repertoire of teaching skills

Having worked for a year in a teacher training college in Tanzania, Vavrus (2009) concluded that it might have been better to try to find ways of improving the quality of teacher-centred pedagogy rather than attempting to replace it completely with a child-centred, constructivist, approach. What was needed, she argued, was a more “contingent constructivism” adapted to local conditions and circumstances.

A study by Hardman et al. (2008) in Nigeria reached a similar conclusion. They argued that teacher programmes should address the realities in Nigerian classrooms and prepare teachers to use a broad repertoire of skills some of which will be learner centred and others more teacher centred.

In Namibia, O’Sullivan (2004) found that learner-centred teaching was beyond the capacity of a group of unqualified teachers with whom she was working. This was due to their lack of understanding of its theoretical underpinnings and inadequate resources for its implementation. She proceeded to develop approaches which better matched their circumstances and concluded that a *learning-centred* rather than a *learner-centred* approach would be more appropriate for their circumstances.

The continuum of teacher education

Since entering a profession entails a commitment to becoming a student of one’s chosen area (Dewey, 1904), initial training must be regarded as the first phase in a lifelong pursuit of well-informed, up-to-date and competent service in that area. PRESET, therefore, should be thought of and planned as the first phase of a professional development continuum that will span the entire working lives of teachers. In a very

informative discussion of what a professional learning continuum for teacher education should look like, Feiman-Nemser (2001) points out that, to date, it has suffered from fragmentation and conceptual impoverishment and has lacked the connective tissue to hold things together within and across the different phases of learning to teach. For Howey and Zimpler (1989), “no point in the continuum has more potential to bring the worlds of the school and the academy together into a true symbiotic partnership than the induction stage” since, during that transition period, schools need teacher educators and teacher educators need schools. They add, however, that “nowhere is the absence of a seamless continuum in teacher education more evident ...” (p. 297). This notion of teacher education as a continuum poses a major challenge for policy makers and teacher educators in the Egyptian context where, in the absence of a clear and specific policy framework, PRESET, and INSET/CPD operate largely in isolation from each other (Dewidar, 2012).

Addressing the apprenticeship of observation

Since student teachers come to PRESET having observed about 14 000 hours of actual teaching during their school years, it is critical that they be provided with ample opportunities to analyse their experiences: 1) to identify the rationale underlying the type of teaching and learning they were exposed to; and 2) to evaluate the arguments for and against different approaches to teaching.

Clarity of vision

Effective teacher education programmes are characterised by a clear vision or mission statement with agreed goals linked to comprehensive professional standards that reflect the complexity of teaching. They avoid defining it solely in terms of narrow, measurable, competencies that make simplistic connections between teaching behaviour and learning outcomes (e.g. examination results).

What is being widely advocated and implemented as good practice in many teacher education programmes today closely parallels what is happening in modern medical training, which is student centred, problem based, integrated and evaluation focused with an emphasis on formative feedback to aid professional development (Spenser and Jordan, 1999; Conway et al., 2009).

Characteristics of teaching in Egyptian schools

The evidence suggests that teaching in Egyptian schools is characterised by traits similar to those in many other developing-country schools in Africa, Asia and the Middle East. It is out-of-keeping with good practice as currently understood and operated in more developed systems and does not serve pupils well. Recognition of this led the Ministry of Education (MOE) to establish the Centre for Curriculum and Instructional Material Development (CCIMD) in 1988.

With some notable and encouraging exceptions, teaching in Egyptian schools is still characterised by:

- An approach to pupil instruction that is teacher-dominated, mechanical, unduly repetitive, and over-concentrated on rote learning and literal recall of information.
- An instructional style which tends to treat pupils as passive imbibers of information rather than active problem solvers.

- Undue, monotonous and thoughtless repetition of material by entire classes.
- Little or no emphasis on the development of critical thinking skills.
- A tendency to over-emphasise esoteric details and unimportant distinctions and to pay insufficient attention to core concepts and ideas.
- Too little connection of learning to real life and contemporary circumstances.
- Scarcity and/or under-use of teaching aids.
- Absence or underdevelopment of appropriate teaching techniques to cater for individual pupil needs and differences.
- Little if any attempt to develop appropriate learning strategies.
- Rapid-fire questions with little or no wait time to allow students to ponder their answers (see Box 5.3).
- A preponderance of lower-order questions and the underuse (or non-use) of higher-order questions.
- Too much answering in unison by whole classes and too little questioning/challenging of individual pupils.
- Failure to match teaching techniques to pupils' learning styles.
- Too much gender differentiation, with girls often limited to learning skills for a gender-defined set of domestic activities.

Box 5.3 Wait time

Wait time is the length of time a teacher waits after asking a higher-order question before allowing pupils to volunteer answers. In his review of several studies on this issue, Tobin (1987) found that the average wait time was 0.8 seconds. When teachers waited three seconds or more the following significant changes in student reactions took place:

- The length of student responses increased.
- The quality of student responses improved.
- The number of students who failed to respond decreased while the number of unsolicited but appropriate responses increased.
- The number of alternative answers and explanations also increased.
- The number of inter-student interactions increased.

Source: Tobin, K. (1987), "The role of wait time in higher cognitive level learning", *Review of Educational Research*, Vol. 57/1, pp. 69-96.

Such teaching is clearly out-of-keeping with current good practice and out of line with current understanding of and research on effective teaching and learning. The end result of this kind of teaching is that there is a considerable gap between the rhetoric of new curricular approaches and activity-oriented methodologies enshrined in the National Standards for Education in Egypt (Ministry of Education, 2003) and advocated by the

CCIMD, and the reality of what is actually happening in school classrooms and in faculties of education (FOEs). The evidence indicates that approaches to both teaching and assessment in FOEs are similar to what is happening in schools and, rather than helping to change them, serve instead to perpetuate the current approaches. While faculty might preach the new approaches, they tend not to practise them in their own teaching and, thereby, fail to provide models of good, up-to-date, practices for their student teachers to emulate.

A number of reports have been issued in recent years on the status of and challenges facing PRESET, INSET and CPD in Egypt. These include: the SABER Country Report on Egypt (World Bank, 2010), the Ministry of Education’s Background Report for the OECD-World Bank review of pre-university education in Egypt (Ministry of Education, 2011a); Ginsburg and Megahed’s report into the reform of faculties of education in Egypt (2011); and Ahmed Dewidar’s regional study on teacher policies (2012). These are the main source of the concerns about the quality of PRESET, INSET and CPD in Egypt that follow, coupled with information gleaned from interviews carried out by the authors of the foregoing reports, and by members of the OECD/World Bank team, with faculties of education, the PAT, personnel in several schools, the Teachers Syndicate, MOE personnel, school trustees, parents of school-going students, and trainee teachers.

Pre-service teacher education in Egypt

Overview

Pre-service student teachers in Egypt are trained in faculties of education (FOEs) in the *muddiriyas* (governorates). In all there are 26 major faculties of education in the country. In the academic year 2010/11 these accounted for 63% of trainee teachers and 65% of education graduates (Table 5.1). In addition there are several minor faculties of education which train teachers for kindergarten, special education, physical education, art education, music education and industrial education, though each university is likely to have just a few of them. In 2010/11 these latter faculties catered for 37% of trainee teachers and accounted for 35% of education graduates (Table 5.1).

Table 5.1 Faculties of education: Enrolments and graduations, PRESET programmes 2010-11

Providers	No. of students enrolled 2010 -2011	No. of graduates 2011
Faculties of education	78 543	23 781
Faculties of specific education	13 000	4 403
Faculties of physical education	20 937	5 583
Faculties of kindergarten	4 390	1 017
Faculties of industrial education	5 550	1 493
Faculties of art education	1 321	327
Faculties of music education	374	92
Total	124 115	36 696

Source: CAPMAS, (2012), *Egypt in Figures 2012*, CAPMAS (Central Agency for Public Mobilisation and Statistics), Cairo.

The FOEs provide concurrent BSc (Ed) or BA (Ed) programmes, in which student teachers pursue their professional studies while also studying academic subjects in their areas of specialisation. These 4-year programmes compare favourably in length with international good practice (see Table 5.2). The FOEs also provide 1-year diploma programmes for students with non-education degrees who want to become teachers.

Many TVET teachers and others in music, fine arts and physical education take this route into teaching. At the postgraduate level FOEs provide special diplomas along with masters' and doctoral degrees. INSET and CPD have been the responsibility of the Professional Academy for Teachers (PAT) since its establishment in 2008. The envisaged level of collaboration and co-operation between FOEs and the PAT in all aspects of teacher education have not materialised. Delays in this regard are hampering much needed reforms in PRESET, INSET and CPD.

Table 5.2 Length of PRESET programmes in European countries

Education level	No. of countries / education systems	Number of programmes (by length)			
		3 years	3.5 years	4 years	5 or more years
Primary	35	8	1	17	9
Lower secondary	35	5	2	12	16
Upper secondary	34	0	1	10	23

Source: European Commission/EACEA/Eurydice (2013), *Key Data on Teachers and School Leaders in Europe*, 2013 Edition, Eurydice Report, Publications Office of the European Union, Luxembourg, http://eacea.ec.europa.eu/education/eurydice/documents/key_data_series/151EN.pdf, (Figure A2b).

A typical major faculty of education has seven education departments: 1) foundations of education; 2) comparative education; 3) educational management and policy; 4) educational psychology; 5) mental health; 6) curriculum and instruction; and 7) information and communication technology (ICT). In addition each major faculty of education usually has six teaching specialisation departments: Arabic; foreign languages (English and/or French and/or German); social sciences (sociology, psychology, philosophy, history, and geography); mathematics; nature, physics and chemistry; and biological and geological sciences. Table 5.1 provides the total number of students enrolled in PRESET programmes and the number that graduated in the year 2010/11.

Like many other countries, teacher preparation in Egypt remained at the pre-university level until the mid-20th century. In the decades following the 1952 revolution, teacher education was gradually incorporated into the university sector. The traditional 2-year training period was extended to a 4-year university degree programme with additional 1- or 2-year programmes for graduates of arts and sciences who wanted to qualify as teachers (Ginsburg and Magahed, 2006, 2011). Ain Shams University was the first to establish a faculty of education when it incorporated two existing teacher training programmes (one male and one female) into the university. The curriculum framework developed by the Ain Sham's FOE for undergraduates, and a similar one for the training of postgraduate (pre-service) teachers, were adopted by other university faculties throughout Egypt. Apart from the specific academic teaching subjects majored in by individual students, the core professional programme taken by all students included the following (Dewidar, 2012):

- Educational foundations and problems in Egyptian society.
- History of education. History of education in Egypt. The education system of Egypt.
- Learning psychology and psychology of childhood, individuals and society.
- Psychological hygiene and mental abilities.

- Health education.
- General principles of curriculum and teaching methods.
- Field experiences – one day per week throughout the programme and three-week block placements during the final two years.

The programmes were, and still are, very traditional, comprising a collection of free-standing courses and field experiences. This lack of integration is reflected in FOE documentation and in the overall breakdown of programmes: 20% pedagogy, 75% academic subjects and 5% languages (World Bank, 2010).

As access to education in Egypt expanded, the demand for teachers grew and the number of students entering teacher education programmes increased dramatically. By 2003 the number of major faculties of education had grown to its present number of 26 and the total enrolment of student teachers in that year had reached 185 353. In spite of such changes little had altered in the teacher education programmes since the 1950s and from the mid-1990s calls for reform were heard from some Egyptian educators, government officials, and in particular from USAID-Egypt and the World Bank. According to Ginsburg and Megahed (2011) “various actors seemed to appropriate the global discourse on such reforms... [and] there appeared to be a consensus among [them] about the need to reform faculties of education in Egypt” (p. 9). Under the auspices of its Higher Education Enhancement Project (HEEP), the World Bank funded both the Faculty of Education Enhancement Project (FOEP) and the Secondary Education Enhancement Project (SEEP,) both of which were aimed at enhancing teacher education in universities and teaching in schools. At the same time the United States Agency for International Development (USAID)-Egypt launched its Faculty of Education Reform Project under the umbrella of its Education Reform Programme. Although some progress was made by these interventions, the evidence from multiple sources (including the funding agencies behind them) is that the changes in PRESET have been minimal and that, in view of significant advances in the professional training of teachers in many countries, the need for reform in Egypt’s faculties of education is all the more urgent today (see Box 5.4). While the National Education Strategic Plan 2007-12 (NESP) clearly recognised this need, it is notable that none of the FOEs has yet been accredited by the National Authority for Quality Assurance and Accreditation of Education (NAQAAE) which was established in 2006 as an independent juridical body directly affiliated to the Prime Minister.

Box 5.4 USAID’s Education Sector Strategy Proposal (2002)

Having noted that the Ministry of Higher Education (MOHE), along with deans and professors of education, acknowledged the need for reform, this report went on to comment as follows on PRESET in Egypt:

“Pre-service teacher training [should be] radically reformed in the faculties of education to meet new professional standards [including] new admissions, screening, basic skills testing, and graduation requirements. ... The massive numbers of students lead [to] large lecture classes, with a heavy emphasis on theory rather than practice. There is a totally inadequate amount of time spent in school classrooms for observation, assisting or teaching. ... There has been no attempt to review or upgrade teacher preparation programs at teachers’ colleges since the first college ... was established in the 1950s”

Source: Aguirre International (2002), *Quality Basic Education for All: Strategy Proposal*, Volume I, Submitted to USAID/Egypt.

Critique of PRESET in Egypt

In light of international good practice, the foregoing evidence and the findings of the team, the following areas of Egypt’s PRESET programmes are out of keeping with current good practice in teacher education and are regarded as being in urgent need of reform:

Admission to teacher education

Applicants for university entry in Egypt are admitted and/or assigned to programmes on the basis of their scores in the Ministry of Education’s final examination (*thanawiya amma*) taken at the end of Grade 12. Students who pass satisfactorily can apply to the Central Placement Office (CPO) for a university place. The number of students to be admitted to each institution and programme is decided by the Supreme Council of Universities in consultation with the MOE. The entire process is co-ordinated by The Admission Co-ordination Bureau of Egyptian Universities (ACBEU).⁶

University candidates submit their institution and programme preferences to the ACBEU and, in theory, are matched to their preferred programme and institution according to their examination results. In practice, however, they are assigned to their local institutions which cannot refuse to accept them. If there are more students than places for a given programme, surplus students are compulsorily assigned to other programmes within the same institutions and are not allowed to opt for other preferences within or outside those institutions.⁷ Many students complain that they are assigned to programmes for which they had not applied, in which they have little or no interest, and for which they are not suited. This is particularly true of large numbers of students in faculties of education who are assigned to teacher education programmes as a last resort since their examination results do not warrant entry to more high-profile and desirable programmes. (For an account of overcrowding of teacher education programmes in other developing countries, see Coultas and Lewin, 2002; Lewin, 2004). The ultimate effect of this practice is to make faculties of education the “dumping grounds” for academically weak students with obvious long-term negative implications for Egypt’s education system.

These entry procedures are largely responsible for thousands of students ending up in individual faculties of education across the country in spite of the fact that many of them do not want to be there and nor do the faculties of education want to have them there. According to the World Bank report on Egyptian education (2010), the result is large numbers of redundant teaching graduates in most subjects with the exception of areas like science and mathematics. It may be that, in Egypt as in other similar countries, politicians and ministry personnel are reluctant to close off this avenue for students who, on the basis of their *thanawiya amma* examination results, have few, if any, other options for gaining a university education. While this may be understandable from their perspective, the consequences for teacher education, and ultimately for schooling in Egypt, are so serious that options other than teacher education must be sought for students who want to go to university but do not wish to become teachers.

The downside of these university placement procedures is that many FOEs have students numbering in their thousands, which renders the effective professional education of teachers virtually impossible. FOE staff are condemned to dealing constantly with huge numbers in large lecture halls and seldom (if ever) in small workshops/seminar situations. Under such constraints the entire training process tends, of necessity, to be lecturer-centred, transmission-oriented and theoretical rather than practical. As in other developing-country programmes it fails to provide suitable models of up-to-date teaching and learning for student teachers to emulate (Schweisfurth, 2011). Because of the nature of professions and the complexity of professional practice, the preparation of professionals must, of necessity, involve frequent small group workshops/seminars, considerable individualised attention and coaching, and extended well-mentored on-the-job training. This is not remotely possible in the current conditions in Egypt's faculties of education. Neither professional nor public opinion would tolerate such a situation in any other profession that prepares personnel to serve the public need.

FOEs reported that many of their graduates cannot find teaching positions in public schools and seek employment in private institutions. It is apparent that surpluses of unemployed FOE graduates have accumulated. Figures provided by Dewidar (2012) indicate that, while there are serious shortages of teachers in some subjects and in certain geographical areas, especially at the preparatory and secondary levels, there is a net surplus of 10 838 teachers in the education system as a whole, amounting to 1.2% of the total teaching workforce of 887 251 (Table 5.3). He concludes that “there is more misdistribution than shortage of teachers” in Egypt (p. 38). However, the apparent surplus of teachers is at the primary level, and it is not self-evident that they could all be retrained for effective teaching at higher levels, especially in subject-specific areas such as mathematics, sciences and languages.

Table 5.3 Surpluses and shortages of teachers, aggregated by level of schooling

School level	Aggregated gross surpluses of teachers	Aggregated gross shortages of teachers	Net surplus (+)/ shortage (-)
Primary	44 736	21 155	+23 581
Preparatory	5 332	22 156	-16 824
Secondary	701	18 296	-17 595
Total	50 769	61 607	+10 838

Source: Statistics supplied by MOE for 2011-12, in Dewidar, A. (2012), *Regional Study on Teacher Policies – Phase II: Egypt Case Study*, World Bank, Washington, DC.

Long-term planning matching PRESET intakes to anticipated national needs would be more helpful for FOEs and would facilitate better long-term planning of programmes. Box 5.5 describes one model of such supply and demand planning from Scotland. Such planning will have to take into account the number of teachers retiring annually, the increase in student enrolments, the teacher-pupil ratio, the number of actual hours/classes taught by teachers each week,⁸ the number of students per classroom, shortages and surpluses of teachers in specific subject areas, and the level of funding available. Different scenarios, and the implications of each for teacher supply and demand, are dealt with in detail in Chapter 8. One plausible scenario, based on anticipated demographic growth, increased participation rates, reduced attrition rates, and higher levels of transition across schooling stages, estimates that the overall increase in school enrolments for the years 2015-2025 would be 1.75 million, or 175 000 on average per year. At a pupil-teacher ratio of 25:1, this would require an extra 7 000 teachers annually, putting further pressure on already overcrowded FOEs and rendering teacher education reform even more difficult.

It is clear that critical and courageous policy decisions on teacher supply and demand will be required. “Best-fit” solutions will have to balance quantity with quality considerations and take cognisance of the implications (positive or negative) for teacher education of any strategy being contemplated.

Box 5.5 Planning for teacher supply and demand in Scotland

According to a Eurydice (2013) report the Scottish government annually carries out a teacher workforce planning exercise, in consultation with an advisory group comprising representatives of the General Teaching Council for Scotland, the local authorities, teacher unions and the universities. The basis of this exercise is a model which takes into account different variables such as pupil numbers, the number of teachers required as well as those expected to leave or return to the profession in the coming year. It then calculates the student teacher intake required to fill the gap between supply and demand. At the end of this process, the government issues a letter of guidance to the Scottish Funding Council. It is a matter for the Council to determine the overall student intake to teacher education and its distribution between universities.

Source: European Commission/EACEA/Eurydice (2013), *Key Data on Teachers and School Leaders in Europe*, 2013 Edition, Eurydice Report, Publications Office of the European Union, Luxembourg, http://eacea.ec.europa.eu/education/eurydice/documents/key_data_series/151EN.pdf.

The structure of programmes and the content of courses

The evidence indicates that there have not been significant changes in the content of teacher education programmes in Egypt for decades. There is an urgent need to review the objectives and content of pre-service programmes in light of international trends in teacher education, the current needs of the system of education in Egypt, and the needs of the country as a whole.

PRESET in Egypt is characterised by a separation of theory from practice: the frontloading of “actionless” theory in university in the belief that student teachers will put it into practice later in schools. Feiman-Nemser’s (2001) critique of traditional programmes of teacher training is true of PRESET in many developing countries, including Egypt. She says:

“The typical pre-service program is a collection of unrelated courses and field experiences. ... [It] is a weak intervention compared with the influence of

teachers' own schooling and their on-the-job experience. ... The charge of fragmentation and conceptual impoverishment applies across the board. There is no connective tissue holding things together within and across the different phases of learning to teach" (pp. 1014, 1049).

This approach, has been superseded in many other professional programmes and countries by a research-based belief that effective professional learning needs to be inculcated through integrated programmes and mastered in situations similar to those in which the professional service will subsequently be provided. Good practice in established professional training programmes focuses on the integration of theory with practice, which feeds out of and feeds back into the university-based programmes. For teachers this requires extended well-mentored placements in actual classrooms, including team teaching placements (see below). The reconceptualisation of teacher education and the integration of training programmes is an imperative for Egypt.

The teaching practicum

The total amount of school-based experience afforded to each student teacher in Egypt is very small by international standards (see Box 5.6). At best, it entails one day or part of a day each week in all years of a 4-year programme and two 2-3 week block placements at the end of the third and fourth years. It is estimated that, at most, student teachers might teach 20-30 lessons during their entire programme. In the majority of cases it is likely to be far less than this due to the logistical difficulties involved in placing huge numbers of students in schools. This is very much out of keeping with good work placement practices in other professions and in teacher education programmes in other countries. Good PRESET programmes require students to spend up to 25% of a 4-year programme (i.e. 28-30 weeks) in well-mentored school placements progressing from individual, to group, to full-class teaching at various grade levels and, finally, to full-responsibility, whole-day teaching for an extended period. This practice reflects practicum placement procedures in medical and other developed professions.

It was not a surprise to learn from several sources (including faculty members themselves) that students teach very little during their training and that the placement and mentoring of such large numbers in schools is a well-nigh impossible task. For the same reason, the extent and quality of supervision of students during school placements is very unsatisfactory. Here again, difficult policy decisions cannot be avoided if there is any realistic hope of reforming and improving the initial preparation of teachers in Egypt.

Box 5.6 Teaching practicum placements in European countries

The following data on school placement practices in 23 OECD education systems for which teaching practicum data are available, is provided in the Eurydice Report (2013) on education and training.

Primary teacher education: in 8 of the 23 systems trainee teachers had extended placements, spending between 600 and 1 065 hours in schools. Taking a teaching week as 25 hours, the duration of practicum placements ranges from 24-43 weeks. The average in these 8 systems is 820 hours or the equivalent of 33 weeks. In the other 15 systems the teaching practicum length varies from 480 hours (19 weeks) to 78 hours (16 days), and in one case less. In 7 of the 8 systems with extended teaching practicum placements, the programme length is 4 years. In the other it is 5 years.

Lower secondary teacher education: in 10 of the 23 systems trainee teachers spend between 400 and 1 065 hours in schools. Taking a teaching week as 25 hours, the duration of practicum placements ranges from 16-43 weeks. The average is between 23 and 24 weeks. In the other 13 systems teaching practicum length varies from 390 hours (16 weeks) to 67 hours (13 days), and in one case less.

Of the 10 systems in question 5 have 4- to 5-year PRESET programmes, 3 range from 5.5 to 7 years, while one is of 3 years duration.

Upper secondary teacher education: for 9 of the 23 systems, the situation is the same as for lower secondary programmes. The average is 596 hours – the equivalent of 23-24 weeks in school placements. In the other 14 systems the teaching practicum varies from 390 hours (16 weeks) to 67 hours (13, days) and in one case less.

Of the nine systems with extended teaching practicums, four have 4-year PRESET programmes. In the remaining five, programme length varies from 5.5 to 7 years.

Source: European Commission/EACEA/Eurydice (2013), Key Data on Teachers and School Leaders in Europe, 2013 Edition, Eurydice Report, Publications Office of the European Union, Luxembourg, http://eacea.ec.europa.eu/education/eurydice/documents/key_data_series/151EN.pdf (Figure A3).

Liaison with schools and other stakeholders

Apart from the minimal contact with schools and teachers related to the teaching practicum, there appears to be a lack of effective working relationships between the faculties of education and schools. This is as unacceptable for teacher educators as it would be for medical trainers if they failed to liaise with, work in, and carry out research related to actual practice in clinics and hospitals.

Not only are co-operation and communication between faculties of education and schools weak, but it appears that relations with the Professional Academy of Teachers (PAT) have not been developed as envisaged in the PAT's official brief (Dewidar, 2012). The future welfare of both the teaching profession and teaching and the quality/relevance of PRESET, INSET and CPD will critically depend on close working relationships between FOEs, the PAT and the Teachers' Syndicate.

Assessment

There are no assessment centres in the faculties of education to evaluate performance and set accountability measures. Student assessment is traditional in nature focusing on content knowledge and knowledge of theory. Educational assessment is not taught as an essential competency for future teachers (Dewidar, 2012). Given the deficiencies in the assessment processes at every level of education, teacher education programmes will need to give much greater emphasis to training teachers in modern assessment practices, including for diagnostic purposes in identifying students learning needs and aptitudes,

monitoring student progress, and interpreting results from large-scale national and international assessment exercises.

Calibre of teacher education faculty

More than a decade ago the World Bank's Faculty of Education Project identified the following weaknesses in FOEs: low or uneven faculty quality, inadequate facilities, weak instructional resources, uneven management, poor quality controls governing entry, out-of-date standards, and lack of incentive for institutions to improve the quality of their teacher education programmes (Dewidar, 2012). There is little evidence to suggest that significant improvements in faculties of education have taken place since then. In addition, there seems little conviction about the need to change, with the paltry funds available reflecting this attitude. With a few notable exceptions, not much has been or is being done by way of capacity building to bring faculty of education members up to date with international trends in teacher education. Professional development programmes for FOE members have been weak or non-existent and funding for them is hopelessly inadequate. Such capacity building for faculty is an essential prerequisite if teacher preparation in the universities and teaching in the schools is to be reformed. While there has been opposition to change by some faculty of education members, old policies, such as those governing university admissions have also curtailed the freedom of FOEs to make the necessary changes in teacher education.

One of the functions of the PAT is to set standards for pre-service teacher education and it is meant to accredit all teacher education programmes and programme providers. However, this has not happened for a number of reasons: 1) lack of co-operation between faculties of education and PAT; 2) PAT has no legal basis to interfere in the work of university faculties of education; 3) the fact that PAT operates under the MOE while the FOEs come under the authority of the MOHE, which contributes to the difficulties.

Stuart (2002) argued that “any attempt to introduce reforms in school curricula without paying attention to those who educate the teachers seem doomed” (p. 378). As has been previously noted, there is cogent research evidence and professional opinion to support the centrality of the teachers' role in the determination of school effectiveness and of the role of teacher educators in determining the effectiveness of teachers. In reality, teacher educators constitute the major channel through which pedagogical expertise is “fed into” the schooling system. The cogency of this contention might be more apparent when applied to another professional area, such as medicine. Improving the quality of medical care in a country critically requires (in addition to medicines, equipment, hospitals etc.) well-trained doctors. The quality of their training, however, is determined in large part by the expertise of their trainers. If this latter area is neglected, the quality of medical services will be seriously jeopardised. The same is true in every other professional area, including teaching, though in the latter case, it is often much more difficult to convince policy makers and funding agencies of this argument. Policy decisions in this regard are critical to any future reform efforts in teacher education and teaching.

Induction, INSET and CPD in Egypt

New recruits to teaching are first hired as “assistant teachers”. Within two years from the date of their initial contract they are required to apply to the PAT for a teaching licence and undergo tests in Arabic, English, general education and their academic subject specialisation. Since 2009/10 MOE personnel and the PAT have provided an

Assistant Teacher Programme to induct the new recruits into teaching and prepare them for the licensing examination. This programme covers general orientation. It also includes provision for on-going mentoring by a “Senior A Teacher” or an “Expert Teacher”. A teaching skills training programme focused on active learning, use of ICT and other teaching aids, and assessment is also provided (World Bank, 2010; Dewidar, 2012). While international good practice advocates a continuum of professional development from initial to induction to in-service teacher education, in Egypt such continuity between induction and PRESET does not exist. As a consequence there is a disconnect between these two phases of teacher development which can only damage and limit the impact of the training.

INSET and CPD are provided by personnel at governorate (*muddiriya*), district (*idara*) and school levels and, in particular, by the PAT. The PAT was established in 2008 with the main brief, according to the National Education Strategic Plan, of “quality control of all training programmes based on quality standards” (Ministry of Education, 2007: p.84). Its functions include the development of standards for teachers, supervisors and other education professionals; the testing and certification of teachers; the accreditation of PRESET and INSET/CPD programmes; the licensing of faculty of education and other trainers; and the support of educational research. In spite of challenges it has faced, the PAT has made significant progress in several areas: the accreditation of professional development providers, the carrying out of needs assessments among teachers and other professionals, the testing and licensing of very large numbers of teachers, the provision of professional development courses related to the initial licensing of assistant teachers, and the promotion of existing teachers within the teachers’ cadre. In this latter case, 600 000 teachers (some two-thirds of the total number in service) attended promotion-related courses in the 8- month period from February to March in 2012 (Dewidar, 2012). This amounts to an average throughput of 75 000 teachers per month. Such mass training/retraining of professionals in one-off sessions of a few days duration raises serious, research-based, questions about the quality, practical relevance and impact of this kind of INSET/CPD. There is also the danger that teachers will not take such courses seriously but simply treat them as routine and unavoidable requirements for promotion. Interviews with teachers lend credence to the belief that this attitude does exist.

The PAT has not been as successful in fulfilling some of its other stipulated responsibilities. There has been a serious lack of the kind of collaboration between the PAT and the faculties of education envisaged by the National Education Strategic Plan (Ministry of Education, 2007) apart from the involvement of some faculty members in the provision of occasional INSET courses for the PAT. For this reason the PAT has not been able to fulfil its brief of accrediting PRESET programmes. Neither have the FOEs availed themselves of the PAT’s research findings on shortcomings in almost all areas of subject specialisation at each level of education. Such information, though critical to the design of both PRESET and INSET/CPD programmes, has gone unused (see Dewidar, 2012 for a detailed account of the PAT’s extensive work to date, as well as its operational difficulties).

The PAT’s agenda going forward includes: the establishment and accreditation of training centres all over the country; the certification of at least 1 000 trainers in each area of specialisation; the professional development of MOE supervisors, school managers and administrative staff; the accreditation and regular updating of training programmes; the administration of regular and well-targeted needs assessments in each area of

specialisation; and the development of a strong monitoring and evaluation system (Dewidar, 2012).

The achievements of PAT were formally recognised in 2011 when it was identified as an Arab regional centre of distinction for professional development. In addition a small survey of 147 teachers who participated in PAT programmes over a three-year period rated the courses as “satisfactory” (i.e. an average score of 3.19 out of 4.00 on a 4-point scale from “strong disagreement” to “strong agreement” with 12 questionnaire statements). Participants also made a number of suggestions for future PAT INSET/CPD courses. The most frequent recommendations made by participants related to the importance of conducting needs assessments related to teachers’ areas of specialisation, the subsequent design of professional development courses based on the needs identified and the selection of trainers best suited to meeting those needs. Some respondents also suggested the need to focus on practical teaching issues. A significant number of respondents recommended the scheduling of INSET/CPD programmes during school breaks and summer holidays when teachers are free. A number of also stressed the need for continuity of professional development and follow-up support for the implementation of “lessons learned” in INSET/CPD courses.

According to the World Bank (2010) report, INSET and CPD in Egypt fit largely into the traditional mode of in-service provision – short one-off courses of lectures, workshops, seminars, and qualification programmes with little or no follow-up. The World Bank described it as “wide in content but narrow in sharing good practice throughout the system” (World Bank, 2010: p. 9). Most of the INSET/CPD provided by the PAT is in response to meeting mandatory requirements for initial certification and licensing and subsequent promotion. And while research indicates that effective in-service provision is sustained over time by regular contacts and inputs, in Egypt provision is limited largely to the annual 20-25 hours (around 3 days) of in-service training required for advancement to the next promotional level on the cadre ladder.⁹ This scarcely constitutes the type of “continuous professional development” that is the lifeblood of all mature professions.

Members of the OECD/World Bank team received mixed reactions from school, ministry and other personnel to queries about the value and impact of various INSET/CPD courses attended. A significant number felt that since many PAT programmes had, of necessity, a particular focus on meeting the requirements for teacher certification and cadre promotion, this adversely affected the nature of their courses and the relevance of material covered to the specific needs of individual teachers and the practical needs of actual teaching. There was not much evidence of enthusiasm among teachers regarding the value of INSET/CPD courses provided at *mudiriya* and *idara* levels or about the ministry officials (supervisors and inspectors) who provided them.

In contrast to these mixed reactions, there was stronger affirmation of the effectiveness and relevance of in-service courses provided within schools by senior teachers or other qualified personnel compared to other forms of in-service provision. However, while there is need for a stronger focus on schools and teachers than in traditional in-service provision, schools cannot operate on their own resources. They will need outside, up-to-date inputs if INSET/CPD is to engender effective reform of current approaches in line with international good practice. There is evidence that such outside inputs can act as catalysts for change within schools (Lieberman and Grolnick, 1996).

Training for technical and vocational education and training in Egypt

As discussed above, the quality of the teaching profession is critical to effective learning in education. This is equally true for TVET, despite its more diverse and complex character. There are at least four different categories of TVET teaching staff: 1) teachers of general education subjects; 2) teachers of vocational education subjects; 3) vocational teachers and external trainers in practical learning context within schools; and 4) in-company trainers in work-based learning arrangements (Zelloth, 2014). Different kinds of TVET teaching staff have different competence requirements, posing challenges for TVET PRESET and INSET teacher training systems. Advanced policy thinking argues for the basic roles and practical and pedagogical competences of TVET teachers and trainers to converge. This would mean a TVET trainer in a company gaining more pedagogical competence and playing a supportive and mentoring role, while a TVET teacher in a school will need to gain a better understanding of work (European Commission, 2010). Similarly, the OECD points to the need for trainers in TVET institutions (and to a lesser extent VET theory teachers), to be familiar with the fast-changing requirements of modern workplaces. Research confirms that trainers who have both pedagogical skills and workplace experience are most effective (OECD, 2010).

Egypt appears to lack a vision for the training of trainers. A total of 50% of trainers and instructors have no pedagogical training at all and more than 30% have received no training other than their general education to prepare them for their posts (ETF, 2003). In the 1950s they were required to have two years practical training in addition to their education degree, followed by five years practical work experience in industry and one year as an assistant trainer. Currently the formal training is a minimum of eight weeks and practical work experience is not required. There is also pressure to use trainers in completely different disciplines from their qualification, with minimal “transformational” training, because of the ban on recruitment in the public sector.

Competency-based and learner-centred approaches are more difficult to establish in technical and vocational education. The PAT’s role in providing professional development programmes and accreditation certificates to TVET teachers and trainers is yet to be developed. The major difficulties are large class sizes, the lack of modern equipment or enough working equipment in training centres, and the lack of employer involvement in providing work-based opportunities to keep trainers up-to-date in their disciplines. During the site visits for this report, the Alexandria Business Association raised the issue of technical trainers’ lack of applied knowledge, and out-of-date methods and textbooks. They were clearly willing to be involved in updating skills which would ultimately benefit their members by producing students to meet their labour market needs.

Triple challenge for TVET teachers and trainers in Egypt

In Egypt, the image of teachers as low-paid, low-skilled and inexperienced persists (UNEVOC, 2013). This is equally true for TVET teachers and trainers, whose status and career prospects are viewed to be lower than that of general education teachers (ETF and World Bank, 2006). TVET teachers have lower earnings as they cannot generate additional income from private tutoring, which is more common in general education. In 2010, the share of teachers who were not yet tested and licensed is highest in technical secondary education (around 12%) compared to primary, preparatory and general secondary education (MOE, 2011). Interlocutors reported that TVET teachers in vocational preparatory schools are evaluated less than general education teachers. The main part of teachers’ training programmes still goes on general education rather than

technical education and teachers in practical workshops face many problems due to lack of resources to update equipment, labs, devices and materials (Ministry of Education, 2007).

Although national education policy has paid increased attention to improving the situation of the teaching force overall and some progress has to be acknowledged (i.e. goals and targets set by the 5-year NESP, establishment of the Teachers' Cadre, creation of the Teachers' Academy) there have not yet been any major changes. Besides the persistent structural problems that face all teachers in Egypt, TVET teachers and trainers face a triple interconnected challenge: weak pre-service training, coupled with inappropriate in-service professional development, connected with limited workplace experience.

Pre-service teacher education

In Egypt no principal distinction is made between the pre-service teacher education of general education and TVET teachers. The main problems identified for general education equally apply to TVET. Pre-service teacher training of TVET teachers is under the responsibility of the Ministry of Higher Education (MOHE) and most teachers in TVET schools have studied at public or private universities offering a teachers' education programme. Some TVET teachers receive their qualification at middle-level technical institutes (MTIs), which offer a 4-year "Bachelor of Technology" degree. Very few TVET teachers have additional qualifications to cover the technical part of the curriculum or practical experience in companies; most come directly from university to the schools (iMOVE, 2012). According to the team's discussion with the Teachers' Syndicate, early selection of teachers is needed in order to get the best candidates to go to university and raise the quality of teaching. At present the combination of the low status of the TVET teaching profession, low salaries and the fact that FOEs are admitting those with lower scores, creates a vicious circle and barrier for change.

Teachers and trainers for practical subjects ("instructors") are usually graduates of secondary technical schools and have little work experience of their own. Instructors who have acquired skills through work experience tend to have no formal training or preparation as certified trainers (Abrahart, 2003).

In-service professional development

In general, any CPD for TVET teachers is provided outside the MOHE, by the Ministry of Education, various other ministries, the PAT and related providers. However, Egypt has no comprehensive teacher development programme targeted at TVET teachers and trainers. Instead, there are numerous fragmented initiatives. When the PAT was created in 2011 as an attempt to provide a systemic response to the deficiency of the system, it was initially unclear if it would also cater for the needs of TVET teachers. Currently its mandate includes TVET but provision of training for TVET teachers is rare and said to be of low standard. In particular, training targeted at technical expertise in occupational fields and practical training is a major shortcoming. The Teachers' Syndicate has plans to establish its own training centre for teacher development (including TVET) to be accredited by the PAT. Governorates (*muddiriyas*) have a role in professional development as well but in general their activities are limited in scope and scale.

Due to resourcing, certain ministries and sectors are in a stronger position. There are around 1 800 TVET teachers and trainers affiliated to the Ministry of Industry, Trade and

Small and Medium-Sized Enterprises (MOITS) who benefit from the Staff Training Institute (STI) and the Technical Competency Centre (TCC) operated under the Productivity and Vocational Training Department (PVTVD). It offers continuing training for PVTVD staff as well as internships for new teaching and training staff through a unique “Experimental Centre” (Amerya) which also tests newly developed curricula and training materials before their introduction into regular training. Similarly, other ministries have their own instructor training centre or train instructors in vocational training centres belonging to them (ETF, 2003). In addition, countless donor projects, usually small-scale, involve teacher training activities introducing new approaches, but can address only selected branches or pilot schools. An example of larger scale is the EU TVET Project (2005-2013) through which some 10 000 VET teachers and trainers received further training.

Limited workplace experience

Current PRESET and INSET provision leaves little or no space for teachers to gain practical experience within a real working environment. A typical TVET teacher graduates from school-based TVET, turns to academic teacher studies at university and then settles back in a TVET institution. A further obstacle is the lack of an adequate teacher recruitment and retention strategy. There are very few examples of teachers being recruited and trained from companies. Donor-supported initiatives may demonstrate good practice but remain “islands of excellence”, such as the EU TVET Project which created more than 500 in-house training facilities in 1 500 companies in the garment, construction, food and tourism industries. Many of the Enterprise and TVET Partnerships (ETPs) discussed in Chapter 2, for example in food processing, also involve activities related to training of trainers (teachers, industry and training providers) in the sector.

Training of trainers for PRESET, INSET and CPD

Since Egypt is unlikely to have the full range of up-to-date pedagogical expertise, it will have to be built up over an extended period of time, using the best available experts within the Egyptian education system supplemented by significant assistance from outside sources. Such capacity building is critical to reform since, arguably, the most effective conduit through which pedagogical expertise is channelled into any education system is through teacher educators who service PRESET, INSET and CPD. Lewin and Stuart (2003a) commented as follows on the important role of teacher educators and the institutions they serve:

In principle they could be powerhouses of change for PRESET, INSET and training of trainers. ... As developmental institutions they should be centres of support, inspiration and innovation for newly qualified teachers and experienced teachers as well. ...Teacher educators could be the fulcrum for raising standards among teachers and therefore in schools but ... as a group they have been ignored [and] neglected by policy makers. (pp. 131, 177)

This calls for long-term planning and considerable investment in the training of teacher trainers in Egypt. It seems clear that, to date, their indispensable role in education reform has not been adequately recognised and their urgent need for up-to-date capacity building has been largely ignored and grossly underfunded. In this regard Torres’ (1996) warning, that “Without the reform of teacher education, there will be no reform of education”, already cited in full, is apt. For Beeby (1966) the pace of change in teacher

education will determine the speed of reform in education. Neither will succeed without highly qualified and up-to-date teacher educators.

The need for and challenge of reform

The difficulty of engendering educational reform through teacher education (PRESET, INSET and CPD), especially in developing countries, must not be underestimated since it entails a change of “mindset” as well as the development of up-to-date repertoires of teaching and learning skills. As Fullan (1993) put it: “Educational change depends on what teachers do and think – it’s as simple and complex as that. It would all be so easy if we could legislate changes in thinking”.

As has been noted, the evidence clearly suggests that both teachers and teacher educators are indispensable to successful educational reform. Beeby (1980) warns, however, of the pitfalls and challenges involved in attempts to break the cycle of poor teaching practices in developing countries. He says:

Teacher trainers in low income countries who try to break with the old patterns usually get their ideas from travel in rich countries, or from books written there, and often hand them on, in the form of indigestible theory, to teachers who need practical guidance to take even simple steps forward. The reformer’s most puzzling question frequently is: ‘Who is to re-train the teacher trainers?’ (pp. 465-6).

In this regard Lewin and Stuart (2003) concluded that, while “the forces of conservatism seem very strong in teacher education generally, ... where good practice was found, ... it was usually as a result of initiatives by the teacher educators concerned, who had acquired new perspectives through formal or informal study, rather than innovations being imposed on the colleges from outside” (p. 79). These findings, along with the arguments already made for the potential impact of teacher trainers in determining the quality of PRESET, INSET and CPD, constitute a cogent case for pedagogical capacity building that is in keeping with current wisdom and good practice and that responds to the felt needs of teacher education staff in the historical and cultural context within which they are currently operating in Egypt.

At this juncture in Egypt’s educational history the critical challenge is 1) to develop a comprehensive teacher strategy framework for the continuum of teacher education; and 2) to design and begin to implement realistic, incremental, time-lined, strategies for reform. These should reflect up-to-date thinking on the professional preparation and continuing professional development of teachers and be in line with good practice in more developed systems. In the Egyptian context the advice of Francis of Assisi is realistic, apt, and encouraging: “Start by doing what’s necessary, then what’s possible, and soon you will be doing the impossible”.

Integration of teacher education programmes

As seen above, the typical PRESET programme in some developed and many developing countries is a collection of unrelated courses and field experiences (Feiman-Nemser, 2001). Theoretical or “actionless” knowledge about teaching is provided in college/university and students are expected to apply it subsequently in classrooms (Shulman, 1998). In this regard Feiman-Nemser (2001) says:

Knowledge for teaching cannot remain in separate domains if it is going to be usable in practice. An important part of learning to teach involves transforming different kinds of knowledge into a flexible, evolving set of commitments, understandings, and skills (p. 1048).

As knowledge from various courses and sources must come together in teaching, so it must be brought together (i.e. integrated) in teacher education.

The traditional approach to teacher education has been superseded in more developed countries and teacher education programmes by a research-based belief that effective professional learning needs to be inculcated through integrated programmes and mastered in practical situations similar to those in which the professional service will subsequently be delivered. For pre-service teachers this requires extended well-mentored placements in actual classrooms.

PRESET in Egypt is seriously limited by the lack of adequate, realistic and well-mentored school-based experience against which the relevance of professional courses can be adjudicated, the usefulness of practical courses can be gauged and, in the context of which, individual students can begin to develop their own vision of education and construct their own version of “teacher”. In current PRESET programmes the “cart” of theory is firmly before the “horse” of practical experience. Even in the case of methodology and curricular courses, college-based presentations and demonstrations inevitably take on the air of “theory” unless and until trainees gain sufficient on-the-job experience against which to judge the relevance of such courses and realise that all of them must individually construct their own versions of what they hear for application in their particular teaching situations (Schwille and Dembélé, 2007; Hasweh 1985, 2013 [in press]); Shulman 1986, 1987b, 1998).

School placements should be planned to provide a strategic pedagogical experience in a range of class grades and school types over an extended period of time. It should include both single-class and whole-school experiences. Goodlad (1990) argues that student teachers should be treated as junior staff members, participate in and be exposed to the full range of events that occur in schools – actual teaching, staff meetings, curriculum planning sessions, parent-teacher consultations, and other school-community events. While the tradition of placing trainees in individual classes with individual teachers for short periods of time does meet some of the important needs of future teachers (e.g. lesson preparation, presentation and class control), the levels of involvement and learning envisaged here are not possible during short school placements. Short, single-class, placements insulate student teachers from the larger context of schools as complex and going concerns and do little to prepare them for later membership in school-based communities of practice. They also helps to perpetuate the notion that teachers only have responsibility for their own classes and can generally operate as if the rest of the school does not exist (Lortie, 1975).

Overcrowding in faculties of education

Current procedures for the admission and assignment of students to faculties of education have resulted in gross overcrowding of teacher education programmes and the inclusion of large numbers of students who have no interest in becoming teachers and whom faculty do not want in their programmes. The result of such overcrowding is that it renders the effective professional development of teachers virtually impossible. Faculties of education are forced to deal with huge numbers in large lecture halls, and seldom in small workshops/seminars. There is little or no scope for the kind of clinical tutoring and

coaching that is required in professional programmes. Under such constraints the entire training process, even when covering teaching methodology, tends to be theoretical rather than practical in nature. In many respects the current arrangement in PRESET programmes is the antithesis of good international practice in teacher education.

Rectifying this is a critical prerequisite to the reform of PRESET in Egypt and presents a formidable challenge to both policy makers and teacher educators. Furthermore, until PRESET is reformed and updated, induction, INSET and CPD will, of necessity, be remedial in nature, as they will have to compensate for the inadequacy and outdatedness of initial teacher education. This approach perpetuates the problem.

Pedagogical capacity building for teacher educators

In all professional areas trainers constitute the major channel through which up-to-date knowledge and expertise are “fed into” the system. In the case of education, teaching and learning, this has been repeatedly stressed by educationalists, especially in the case of developing countries. Implementing reform policies through the preparation of teachers falls largely on teacher educators. On this issue Schwille and Dembélé (2007) conclude their book as follows: “Whether teacher preparation is university-, college-, or school-based, teacher educators have a critical role to play. They can also provide leadership for teachers’ continuing professional development. Improving their recruitment, preparation, performance and retention is therefore a priority” (p. 129).

To date, however, teacher educators as a group have been largely ignored and represent a neglected resource and opportunity missed (Beeby, 1966; Torres, 1996; Stuart, 2002; Stuart and Lewin, 2002; Netherlands Ministry of Foreign Affairs, 2003). The evidence strongly suggests that, in Egypt, teacher education and teacher educators continue to suffer from serious neglect.

Beeby (1980) identified the reformer’s most puzzling question: “Who is to re-train the teacher trainers?” Egypt is most unlikely to have the level of expertise required to accomplish this task in the country. As a result, considerable assistance must be sought from outside sources and more developed systems. Accomplishing the task of training and re-training teacher educators will require major policy changes, extensive planning and substantial funding. If these are not forthcoming, progress will prove impossible and the current situation will continue. As the National Commission on Teaching and America’s Future (1996) stated:

New courses, tests, curriculum reforms can be important starting points, but they are meaningless if teachers cannot use them productively. Policies can improve schools only if the people in them are armed with the knowledge, skills and supports they need (p. 5).

Finally, it is sometimes argued that, because the vast majority of teachers are already in schools, reform initiatives should focus largely on INSET/CPD and the trainers providing it, rather than on PRESET. Lewis and Stuart (2003) point out, however, that there are often not the same conceptual and practical differences between PRESET and INSET in developing countries as there are in high-income ones. In developing countries, full responsibility teaching may precede, or in some case coincide with, formal (initial) teacher education through INSET. Furthermore, Dewey (1904), Feiman-Nemser (2001) and many others argue that teacher education should be viewed as a continuum of professional development with PRESET as its first phase. It would seem unwise, therefore, to treat PRESET and INSET/CPD as separate entities because the needs of both

are most likely to be met in the same way, i.e. the development and training of competent trainers through pedagogical capacity building. Of teacher trainers and the institutions they serve, Lewin and Stuart (2003) had this to say:

In principle they could be powerhouses of change for PRESET, INSET and training of trainers. ... They should be centres of support, inspiration and innovation for newly qualified teachers and experienced teachers as well. ...Teacher educators could be the fulcrum for raising standards among teachers and therefore in schools. (pp. 131, 177).

Information and communication technology in teaching and teacher education.

In developing countries there are often unrealistic expectations about the impact of information and communication technology (ICT) on education. The frequent assumption is that if the ICT hardware is supplied, and teachers get some training in its use, a positive impact on teaching and learning is assured. The evidence in this regard in developed countries is mixed and has fallen short of initial expectations (see Box 5.7).

Box 5.7 Pedagogy and ICT use in schools

Law et al. (2008) reported on the use of ICT by mathematics and science teachers in 22 high-income countries. They concluded: “Computer access is a necessary but not sufficient condition for ICT use in learning and teaching. ... Almost 100% of the schools had computer and Internet access for pedagogical use, but the extent to which teachers adopted ICT differed greatly across systems, varying from below 20% to over 80%” (p. 275).

Of the 22 systems, 15 had no ICT-related requirements for certification; 13 had no professional ICT development requirements; and 12 had no programmes for stimulating new pedagogies. Teachers with a strong 21st century outlook were the most likely to use ICT while traditional teachers were the least likely. Two factors were found to have a critical impact on the level of ICT use: 1) the vision that school principals have in its regard; and 2) the technical and pedagogical support available to teachers and students. It was found that teachers were much more willing to attend pedagogical rather than technical ICT-related INSET.

The researchers concluded that INSET should give precedence to the former over the latter in teacher in-service and professional development courses. Finally, they recommended that ICT should be viewed as an integral part of the overall education programme rather than focusing on one or two strategic areas and that it should work in tandem with the curriculum framework.

Source : Law, N., W.J. Pelgrim and T. Plomp (2008), *Pedagogy and ICT Use in Schools Around the World: Findings from IEA SITES 2006 study*, CERC Studies in Comparative Education, 23, Comparative Education Research Centre, University of Hong Kong, Springer.

In developing countries the outlook for ICT use and impact on teaching and learning is less positive for several reasons: lack of financial resources, inadequate supply of hardware (see Chapter 2 for the situation in Egypt), insufficient technical and budget support to maintain ICT equipment on an ongoing basis, intermittent and unreliable electricity supply, lack of adequate training in ICT use, poor quality of teacher training, greater incidence of untrained teachers, and the urgent need for pedagogical capacity building on the part of teacher educators (including training in use of ICT in teaching and learning).

As with any tools, the impact of ICT on teaching and learning depends on the ability the teachers to use it appropriately. While ICT is a marvellous tool in the hands of a good teacher, it can be a poor, time-wasting, instrument in the hands of an untrained or poorly

trained one. The ability to use ICT well depends also on the quality of training teachers have received and the relevance of their ICT-related instruction to teaching and learning. In reality, supplying the hardware is the easy part of the process. Professional development of teacher trainers and teachers in its potential educational use is by far the greater and more long-term challenge (see Box 5.8).

Box 5.8 Preparing PRESET teachers to integrate ICT in their classroom practice

A study carried out in Belgium highlights the challenges involved in moving from ICT as a stand-alone course in teacher education to embedding it across the PRESET curriculum. In a cross-case analysis, this study examined the ways in which the development of technological pedagogical content knowledge (TPACK) was promoted in three teacher education programmes.

The study concluded that the three programmes had not yet succeeded in adequately equipping teachers with TPACK and suggested two reasons for this: 1) the failure of teacher educators to adequately model the use of ICT in their own teaching/lecturing, due in part to their limited technological competence and/or their lack of understanding of the potential of ICT; 2) the lack of adequate pedagogical knowledge on the part of student teachers. The need for an in-depth understanding on the part of both faculty members and student teachers of the pedagogical reasons for and potential of ICT use in teaching and learning is forcibly put by one ICT co-ordinator and head of department when he said: “You can easily replace a pen by a laptop, even without a vision. But the main question here is: what is the added value [of doing it]? Where is the educational innovation?”

The study concluded: “ICT should be infused into the entire curriculum so that pre-service teachers have the opportunity to (a) understand the educational reasons for using ICT and (b) experience how ICT can support teaching and learning across different subject domains. Without such integrated approaches, the knowledge and the skills pre-service teachers gain are likely to remain isolated and unexploited” (p. 242).

Source : Tondeur, J. et al. (2013), “Technological pedagogical content knowledge in teacher education: In search of a new curriculum”, *Educational Studies*, Vol. 39/2, pp. 239-243.

There are some encouraging examples of positive use of ICT in the developing world. In the case of a World Bank-supported Teacher Education Improvement Project in West Bank and Gaza Strip, participating in-service teachers in one West Bank territory university are submitting all their “homework” electronically, sharing videos of their teaching and exchanging documentation with colleagues, and engaging in ongoing discussion using chat room facilities. In another component of the same project, pre-service students in the Gaza Strip have taken the initiative of setting up a Facebook page with a student manager. They use this page, Skype and mobile phone connections to stay in constant contact with each other, with college faculty, and with their mentor teachers regarding their college and school work. Such use of ICT is very beneficial. Incorporating ICT into actual teaching and learning in classrooms, however, will call for detailed planning and adequate capacity building for both teacher educators in particular and, through them, for teachers.

Generally speaking, the possibilities and pitfalls associated with the use of ICT in low-income economies is well summarised by a World Bank (2005) publication. It states:

In low-income countries the strategic use of ICT potentially provides a means of leapfrogging in educational development. The mere availability of computers and other technology, however, does not replace the core business of teaching and learning, nor is it in itself a guarantee of gains in educational quality. Education,

not connectivity, is the challenge here, but the two need not be sequential or in conflict.

There is still a long way to go before the potential of ICT in actual classroom learning processes is realized. In both developed and developing countries there is mounting scepticism about the learning outcomes of massive investment in ICT

The challenge concerning full utilization of ICT in education closely concerns the teaching profession. ... The ICT training needs of teachers with no or little knowledge of ICT in teaching and learning are enormous. ... [Because] the supply of ICT education can potentially be of the highest quality but also of the poorest, ... quality control and quality assurance mechanisms become crucial (pp. 110-111).

While the potential of ICT in education is huge, the problems, challenges and constraints Egypt is currently facing mean that undue focus on, excessive funding of, or overconfidence in ICT to engender the desired reforms in teaching and learning are not warranted since ICT will not replace the core business of teaching and learning. While both should proceed in tandem, the major focus should continue to be on the improvement of teacher education and teaching.

A policy framework for teacher education

Development of a policy framework for teacher education is essential. It should enable clear and specific plans to be made for establishing and maintaining a continuum of teacher development from PRESET to INSET and CPD. According to Dewidar (2012), no teacher policy framework has yet been developed for Egypt. Consideration of the following will be critical to the development of an effective and relevant policy framework for the education and professional development of teachers in Egypt.

Clarify management of teacher education

Consideration should be given to the establishment of a defined and effective locus of control for teacher education within the responsibilities of the Minister of Education, preferably with a department of its own rather than being a subsidiary function within another department. In light of their research in five developing countries Lewin and Stuart (2003) advise “The constructive and effective development of teacher education requires direct access to Ministerial authority, clear lines of administrative control and accountability, and strategic delegation of some measure of autonomy to training institutions, at least in professional arenas” (p. 183).

Develop a clear theoretical basis for the reform of PRESET

Successful teacher education programmes are based on a coherent rationale, integrate coursework and clinical work well, build towards a deeper understanding of teaching and learning, use common standards to guide practice and evaluate coursework, have a shared vision of what constitutes good teaching, are based on a set of educational ideals that are constantly revisited and reinforced, and have a shared set of beliefs with co-operating schools (Darling-Hammond, 1999).

Control intake to teacher education

The intake to PRESET programmes should be balanced against the number of teachers needed to meet the anticipated short- and long-term demand for teachers in all school types and subject areas. A better balance of supply and demand would be likely to improve the calibre of student entrants. Smaller courses would facilitate more professional programmes, including more group/seminar work, fewer large lectures, more individualised attention and coaching, and longer, well-mentored school placements – all in keeping with international good practice in the preparation of professionals, including teachers.

Create a teaching practice template

A teaching practicum template should be designed to facilitate and guide the extended placement of student teachers in schools with appropriate support by mentors (faculty supervisors, MOE inspectors, school principals and class teachers) who understand the rationale for the overall PRESET programme and who have been well prepared for their support role with student teachers.

Pedagogical capacity building for teacher educators

Egypt needs long-term, adequately resourced plans to provide up-to-date pedagogical capacity building for faculties of education involved in both initial and ongoing teacher education. This, however, will require a response to Beeby's (1980) question: who will train the teacher trainers? To this end consideration might be given to forming extended twinning or other co-operative arrangements with reputable international institutions with up-to-date teacher education programmes, whether PRESET or INSET/CPD. Such an arrangement could involve study visits and interchanges of faculty. All personnel involved in teacher education will need considerable training or retraining by a combination of local and international experts. Such an arrangement is currently working well in a World Bank-supported PRESET and INSET projects in the West Bank and Gaza Strip (Burke and Cuadra, 2013).

Enhance the image of teaching

Glazer (2008) argues that “all professions, if they are to remain viable, must monitor and attend to the relationship between practice and evolving client needs and social context” (pp.185-6). If both teaching and teacher education do not respond appropriately to current day needs and changed circumstances, they will be vulnerable to what Glazer calls “jurisdictional decline” i.e. reduction in public recognition and respect. For this reason Grossman (2008) argues that, if teacher educators are to command respect and successfully counteract their declining influence, they must “aggressively investigate the practice of teacher education and offer professional education that reflects the needs of our students and the needs of our schools” (p. 22).

Significant efforts have been made to improve the status of teachers in Egypt. These include the development of National Standards for Education (2003); the establishment of the Teachers Cadre (2007), the development of a career path and promotional system for teachers, along with a 50% increase in basic pay (2007) and bonuses for each promotional level from (2008); and the establishment of PAT (2008). In spite of these advances, the status of teaching as an occupation is still low – a fact that becomes very evident in conversations with secondary school students, very few of whom want to become teachers. In view of this, an ongoing public relations exercise might be considered to

improve the image of teaching as a profession and to confirm the indispensable role that teachers play in the cultural life and economy of the country. Affirmation of teaching and teachers should come from the highest levels of government and the Ministry of Education. Such public recognition of teaching would cost little but mean a lot and might in time attract a good proportion of better qualified candidates into the profession. In some countries a National Teachers' Day has become an annual event.

Improving TVET

Ten years ago an international VET review on Egypt stated that “the lack of suitably qualified and experienced instructors is probably the over-riding factor limiting the effectiveness of technical and vocational education and training” (Abrahart, 2003). Since then not much has changed and the capacity of TVET institutions remains severely limited. The latest Torino Process report found that TVET teachers receive less CPD than other teachers in terms of CPD and that the implementation of the Teacher Cadre had less impact on their career progression. “In 2012/13 only 20% of teachers in technical education were in the two highest levels of the Cadre (Senior Teacher, Expert Teacher) (19% for three-year and 22% for five-year school teachers) whereas in general secondary education over 40% of teachers were in these categories” (ETF, 2015). Without substantial improvements in teacher and trainer development it is likely that even with appropriate standards and new curricula, the capacity of the TVET system to deliver good outcomes will remain uncertain and questionable.

Future TVET teachers and trainers need to be prepared for ever-changing demands stemming from new technologies, expanding knowledge in fields such as ICT and increasing social expectations. The draft TVET strategy is promising as it acknowledges teachers as the most important institutional-related factor influencing learner achievement. The document stresses the urgent need to enhance the competence of teachers and trainers in order to raise the quality of TVET: “The improvement in the delivery of vocational competences for employment and citizenship will be achieved only if there is an improvement in the quality, effectiveness and relevance of TVET teaching” (TVET Reform Programme, 2012). The lack of investment over the years is seen as main cause for “...out-dated pedagogical approaches...that require revision, teachers and trainers who lack the skills and experience to prepare people for contemporary working conditions” (TVET Reform Programme, 2012). This TVET strategy thus plans to address a range of issues. Among the most prominent are a review of the relevance, quality and effectiveness of PRESET and INSET programmes; the introduction of personal assessments and regular training-needs analysis for teaching staff; ensuring that TVET teachers and trainers understand the labour market orientation of TVET; reviewing employment conditions to attract and retain qualified and experienced people; and, last but not least, developing partnerships with employers to gain access to their facilities to support practical training and the skills upgrading of TVET teachers and trainers. The plan sets a number of ambitious targets to be achieved by 2017. A minimum of 55% of TVET teachers and trainers are to have completed upgrading programmes, new initial training programmes are to have started, and new grades and qualifications agreed for TVET teachers and trainers, as well as a new CPD programme.

The strategy however leaves open how these goals are to be met and which major obstacles need to be tackled. Implementation will be a challenging process, in particular since TVET teachers and trainers were not really involved in preparing the reform agenda. A key question will also be if the reform can succeed at all with the current

teaching and training force in TVET or if the impact of reform can be only linked to long-term generational change.

In the short term, Egypt would need special measures to encourage the recruitment of TVET teaching staff and to ensure they have up-to-date workplace and pedagogical skills. Possible solutions can be found through learning from inspiring examples of international experience, such as diversifying routes into the TVET teaching profession (i.e. facilitating recruitment of practitioners from industry), introducing a flexible provision of pedagogical training (including collective reflection of current teaching), and practical training (i.e. trainers spending some of their time in workplaces, participation in social networks, better team work between theoretical teachers and practical instructors), improving data collection on TVET teachers and trainers, and finally, giving a higher priority to TVET teachers and trainers within the PAT.

Notes

1. The comparison here is between the electrician and the electrical engineer; the book-keeper and the auditor; the draftsman and the architect; the nurse and the doctor; the teacher's aide and the class teacher.
2. NAEP's nationally representative database included information, not only on students test scores, but also on teacher classroom practices and on other teacher and student characteristics. The availability of this data and the use of statistical multilevel modelling techniques in analyses enabled the researcher to overcome the shortcoming of earlier quantitative research and to measure the impact of school/teacher level effects as well as student background factors.
3. This evaluation of external support to basic education was carried out on behalf of thirteen international and national funding and technical assistance organisations in co-operation with four developing countries – Bolivia, Burkina Faso, Uganda and Zambia.
4. Other professions (e.g. medicine) also face the challenge of integrating multiple courses taught independently by different individuals in the same programme and establishing an adequate interface between these and clinical placement experiences (see Burke, 2002).
5. In the past "in-service training" generally referred to ministry-mandated courses provided for teachers by outside experts. Such courses were usually related to the implementation of new curricula or programmes. In more recent times, "continuing professional development" (CPD) is taken as subsuming and extending the concept of in-service training to include the transformation of teacher knowledge, understanding and skills in light of up-to-date developments in knowledge and current good practice within the profession. In this chapter "INSET/CPD" will be used to cover the whole spectrum of teacher professional development, including INSET.
6. See OECD/World Bank (2010), *Report on Higher Education in Egypt* for a full account and critique of the university admissions system.

7. Some faculties of education do interview students, but such interviews amount to little more than a cursory check to confirm the absence of speech or other serious defects that might hamper their teaching. Private institutions have more flexibility on entry procedures and can offer students more options.
8. In any school the maximum number of teaching hours in a week is determined by the length of the school day and the number of available classrooms in the school. It is possible, therefore, to determine the average weekly teaching load of teachers in individual schools by multiplying the number of teaching hours in a week by the number of classrooms in that school and dividing it by the number of teaching teachers in the school. In a number of schools visited by the review team the foregoing formula was applied and it was found that the average teaching load was about 9 hours per week (i.e. 12 forty-five minute lessons per week or 2.4 lessons per day) – considerably less than the load prescribed by the MOE. In one experimental school the average was about 19 lessons (14.5 hours) per week.
9. Up to the revolution in 2011 50 hours (around 6 days) was required.

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Chapter 6.

Appropriate assessment

This chapter outlines the different purposes of educational assessment and evaluates the balance of approaches to assessment in the Egyptian education system. It gives particular attention to high-stakes examinations and their impact on curriculum and pedagogy, and student opportunities for further learning and work. It also considers a number of changes to assessment as a means of increasing student learning, enlarging educational opportunity, and improving public accountability reporting.

The different uses of assessment

Assessment is arguably at the core of formal education, as it informs the validation of learning and decisions about educational interventions – in the classroom and at the system level. Educational assessment provides a basis for understanding how and how well student learning is occurring, according to which judgments can be made about student progress in education (see Box 6.1).

Assessment is the means by which student attainment is noted, recorded, and referenced – whether in relation to set standards (criterion-referenced) or in relation the achievement of others (norm-referenced). It guides ratings of student readiness for further learning. This could be for diagnostic purposes, modifying teaching and learning experiences to address student needs, for advancing students to further stages of education, or recognising their successful completion of an education stage and awarding accreditation.

Box 6.1 Diverse uses of assessment

“Information about where students are in their learning can be used in many different ways, including to identify starting points for teaching, to diagnose errors and misunderstandings, to monitor trends in average achievement levels over time, to select students for entry into courses, to evaluate the effectiveness of teaching interventions, and to benchmark achievement levels against international standards.”

Source: Masters, G. (2013), “Reforming educational assessment: Imperatives, principles and challenges”, *Australian Education Review*, No. 57, Australian Council for Educational Research, Melbourne.

Assessment processes can provide data for evaluating teaching effectiveness, and the effectiveness of educational programmes, including the curriculum and the organisation of learning experiences. Student assessment can inform appraisal of teacher performance, and the effectiveness of schools and educational sub-systems, on a regional or stage-of-education basis. With the advent of international initiatives to develop comparable educational assessment data, such as the Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS), inferences can be drawn, however inappropriately, even about the relative capacities of the human capital of nations. Different education stakeholders – teachers, school leaders, school governing bodies, parents, educational authorities, employers, general taxpayers, parliamentarians and students – have different interests and expectations regarding assessment.

Traditional and evolving approaches to assessment

As noted in Chapter 4, the modern world of citizenship and work requires more exacting and more adaptable abilities, including the ability to work in teams, use technology effectively, innovate, solve complex problems, analyse and evaluate diverse information, conduct themselves ethically, and to accept personal responsibility. Appropriate assessment methods are required for understanding how well students are developing those abilities and characteristics.

However, current assessment and reporting practices derive from an earlier era of educational expectations. They were designed to support the traditional whole-class

teaching of an age-based, graded curriculum. Teachers had the role of delivering the curriculum, students had the task of learning what was taught, and assessment had the function of establishing how much of the taught curriculum had been learnt by the students (Masters, 2013).

Traditional assessment has thus been oriented towards judging student “success” in this linear production model of whole-class teaching, common curriculum and age-based progression. The structure and form of assessment, as well as its purposes, can influence what education systems do and how they function at every level. If a test can be prepared for, instead of acting as a measure of student ability and potential, it can become more a measure of the preparation effort, including familiarity with the testing culture and rehearsed responses to test item types.

“If there is no concerted effort to subordinate testing to explicit curricular goals, there is an ever-present potential danger that tests themselves with all their inherent limitations will become the purposes of the educational encounter by default.” (Henning, 1990)

As noted in Chapter 5, in relation to the professionalisation of teaching, assessment is also shifting in line with practice in other professions, in a more diagnostic direction and with a greater interest in understanding than judging:

“... in modern classrooms, assessment is seen as an essential and on-going component of effective teaching. Teachers use assessments to identify where individual students are in their learning, to diagnose errors and misunderstandings, to plan teaching, to provide feedback to guide student effort, to monitor the progress that individuals make over time, and to evaluate the effectiveness of their teaching strategies and interventions. In this sense, assessment has parallels with assessment in other professions such as medicine and psychology where the purpose is not so much to judge as to understand for the purposes of making informed decisions.” (Masters, 2013).

A common distinction is made between “formative” assessment, made during the learning process and “summative” assessment at the end of it – whether in terms of the purpose or focus or form or timing of assessment. This distinction is most frequently drawn in education systems designed to select students for higher learning, where summative assessment has been viewed as largely external to the teaching and learning process, and where teachers and teacher educators have sought a sharper focus on observations of formative student performance in order to help improve student learning (Newton, 2007). In the contemporary circumstances of education, where roles, goals and orientations have shifted or are shifting away from past approaches, then the traditional distinction between formative and summative assessment is less obvious, and mostly unhelpful.

Conceptualising assessment as “the process of establishing where learners are in their learning” (Masters, 2013) enables assessments to be used in a complementary fashion, for learning and assessments of learning, both criterion-referenced and norm-referenced.

Assessment design principles

Masters (2013) has put forward five design principles for a “learning assessment system”:

1. Assessments should be guided by, and address, an empirically based understanding of the relevant learning domain.
 - A domain may be a subject area of learning within which student attainment and progress are to be assessed and monitored. A domain has both horizontal and vertical sub-structures. The horizontal dimension, for instance, for the domain of Reading Literacy in PISA, there are three sub-domains: accessing/retrieving, integrating/ interpreting and reflecting/evaluating. The vertical dimension identifies the nature of increasing proficiency within the domain.
 - Course syllabuses spell out the knowledge, skills and understanding that students are expected to develop, ideally grounded in discipline knowledge. They should identify knowledge and skills essential to the discipline, with a particular emphasis on the development of students’ understandings of key concepts, principles and ideas in the discipline. They should be built from an empirically based understanding of how learning occurs within the discipline, including an understanding of how the course builds on prior and prerequisite learning, how it lays the foundations for further learning, and how content is best sequenced within the course to promote the development of student knowledge, skills and understandings.
2. Assessment methods should be selected for their ability to provide useful information about where students are in their learning within the domain.
 - Different assessment methods (e.g. paper and pen tasks, student performances, research projects, portfolios of student work) are likely to be valid for different kinds of learning. Once a general method of assessment has been chosen, specific assessment activities or tasks are required. In developing assessment tasks, consideration needs to be given to a range of other criteria, including reliability, objectivity, inclusivity and feasibility (see below).
3. Response to, or performance on, assessment tasks should be recorded using one or more task “rubrics”.
 - Task rubrics (marking guides) provide the direct substantive link to the learning domain. Through their ordered levels of response or performance, they operationalise what it means to make progress within the domain and that the direct connection is built back to the learning intentions.
4. Available assessment evidence should be used to draw a conclusion about where learners are in their progress within the learning domain.
 - Individual assessment tasks are rarely of intrinsic interest. They are convenient and interchangeable vehicles for gathering evidence and drawing conclusions about where learners are in their learning with a particular domain.
5. Feedback and reports of assessment should show where learners are in their learning at the time of assessment and, ideally, what progress they have made over time.

- Feedback on the knowledge, skills and understanding demonstrated by students reflects an appreciation of learning as an ongoing, long-term process.

Box 6.2 International best practice in educational assessment

“International best practice in educational assessment proceeds through the set of steps outlined above, beginning with a clearly defined learning domain grounded in discipline knowledge and evidence about how learning occurs within that domain. Assessment methods are chosen on the basis of their domain-relevance (construct validity) rather than personal preference. Students’ task responses/performances are recorded using rubrics (or marking guides) that are informed by, and aligned with, the learning domain and learning intentions. Conclusions about where students are in their learning within the area being assessed are then based on evidence provided by (usually multiple) assessment tasks.”

Source : Masters, G. (2013), “Reforming educational assessment: Imperatives, principles and challenges”, *Australian Education Review*, No. 57, Australian Council for Educational Research, Melbourne.

The OECD has undertaken a series of reviews of education evaluation and assessment in its member countries. The varying approaches identified reflect historical and cultural differences, although there is some convergence towards adoption of the principles outlined above by Masters. The OECD report on educational evaluation and assessment in the Netherlands notes:

“The Dutch evaluation and assessment approach stands out internationally as striking a good balance between school-based and central elements, quantitative and qualitative approaches, improvement and accountability functions and vertical and horizontal responsibilities of schools.” (Nusche et al., 2014)

Box 6.3 outlines key features of the Dutch approach.

Box 6.3 Educational assessment in The Netherlands

The Dutch approach consists of the following four components:

Student assessment. Student assessment in The Netherlands is largely the responsibility of schools and classroom teachers, supported by well-developed standardised assessment tools. For formative assessment, nearly all primary schools participate in the *Leerling Volg Systeem (LVS)*, a longitudinal student monitoring system developed by the Central Institute for Test Development (*Centraal Instituut voor Toetsontwikkeling, CITO*) covering most subjects. For the first two years of secondary education, the CITO also offer a range of monitoring assessments. In their regular classroom assessment, teachers choose assessment tools, typically drawn from tests provided by the particular textbooks or “methods” they use. Summative results are reported to students and parents three times a year on a scale of one to ten.

At the end of primary education, schools are required to report on the extent to which their students have reached expected core learning objectives. While schools are free to use different instruments for this purpose, 85% of schools use CITO’s end-of-primary test, which provides information on the school type most suitable for each student in the next phase of education. New laws that will be implemented from the 2014/15 school year make it mandatory for primary schools to administer regular student monitoring systems as well as a final test at the end of Year 8.

Box 6.3 Educational assessment in The Netherlands (continued)

Schools can choose to administer the tests developed by CITO or alternative tests provided that they meet central quality requirements. In the secondary sector, school-leaving examinations are administered at the end of each track. These examinations consist of a central part developed by CITO following guidance from the College for Examinations (College voor Examen, CVE), and a school-based part developed by teachers in conformance with the examination syllabuses.

Teacher appraisal. Teacher appraisal is under the jurisdiction of the competent authority of each school. The 2006 Education Professions Act requires school boards to establish human resource policies for their schools, keep competency files for each teacher and ensure that teachers' competencies are maintained. Central regulations specify that schools should have regular performance interviews with all staff, but there is little central guidance on how the performance of individual teachers should be evaluated. As the employing authorities for teachers, school boards are free to develop their own frameworks for teacher appraisal. Many school boards delegate the responsibility for human resource management, including teacher appraisal, to the school leaders, and practices vary from school to school.

School evaluation. There is no legal obligation for schools to implement particular self-evaluation processes, but schools are required to draw up a school prospectus, an annual report and a 4-year school plan, which is typically based on an internal review of school quality. Schools benefit from analytical software systems and benchmarked data, and can choose to buy supporting materials and services from different providers. External evaluations are conducted by the Inspectorate of Education at least every four years, with the type and intensity of inspection depending on identified risks in each school. Schools that are considered at risk of underperformance are evaluated more frequently and more thoroughly than others. The initial risk analysis is based on a review of each school's outcomes, annual accounts and "failure signals" such as complaints. For its inspection visits, the inspectorate uses a detailed framework of quality indicators and a clear set of decision rules. As part of this framework, the inspectorate also evaluates the internal quality care undertaken by schools. A range of different databases providing school-level information and performance indicators are connected and made available to different audiences through the online information systems Windows for Accountability (Vensters voor Verantwoording) and Schools on the Map (Scholen op de Kaart). School evaluation also uses information recorded in the Basic Register for Education (Basis Register Onderwijs, BRON). The inspectorate publishes its inspection reports, as well as School Quality Cards which provide information about the inspection regime schools are assigned to.

System evaluation. The overall performance of the Dutch education system is monitored in several ways. Information on student learning outcomes is collected from international surveys, national monitoring sample surveys (Peridodiek Peilings Onderzoek, PPON and Jaarlijks Peilingsonderzoek van het Onderwijsniveau, JPON), the longitudinal Cohort Survey School Careers (Cohort Onderzoek Onderwijsloopbanen, COOL), the standardised test results reported by schools (e.g. results from the LVS or the CITO school leavers' test) and the results from the secondary school-leaving examinations. This student performance data is complemented by a wide range of demographic, administrative and contextual data collected by the Ministry of Education, Science and Culture directly from schools. System evaluation also makes use of BRON register data, based on students' unique student number. The Inspectorate of Education analyses education system performance based on information aggregated from its inspection activities and undertakes thematic inspections on particular priority themes in samples of schools. In addition, the ministry regularly commissions a variety of research groups to conduct research studies and programme evaluations. Information on education system performance is published in several formats, including the ministry's publications on key figures and trends in the picture and the inspectorate's State of Education report.

Source : Nusche, D. et al. (2014), *OECD Reviews of Evaluation and Assessment in Education: Netherlands 2014*, OECD Reviews of Evaluation and Assessment in Education, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264211940-en>.

Problems with the current examinations in Egypt

Egypt aims to offer universal basic education for all children aged 6 to 14 years. To complete this cycle, students must pass an end-of-level examination at the end of primary education. It is a high-stakes exam, and those that do not pass after two attempts, must

either move to a vocational preparatory school or withdraw from education altogether. Those who pass this exam enter preparatory (lower secondary) education which lasts for three years. At the completion of this level students receive the Basic Education Completion Certificate. At the end of the preparatory cycle students must pass a national exam. Based on their performance in the preparatory level final exam, students either withdraw from formal education or are steered into a series of possible secondary education tracks: general secondary school, or vocational/ and technical secondary institutions.

As outlined in previous chapters, the tracking and streaming of students based on their scores in outdated, low-quality, high-stakes examinations are a core problem of the Egyptian education system. Not only do they create and exacerbate inequities, they also cause significant difficulties to efforts to improve accountability for educational outcomes. Additionally, there are several technical deficiencies in the design, conduct and use of the exams.

Sample-based examinations at Grades 4 and 8

First, there is a lack of real standardisation in the examinations administered to national samples for Grades 4 and 8. Although they are developed according to general guidelines from the Ministry of Education (MOE), and blueprints developed at the National Centre for Examinations and Educational Evaluation (NCEEE), the actual items and specific areas for the test are developed locally at each governorate (*muddiriya*). Thus they cannot provide a true and accurate national picture of the performance of students. These examinations should be constructed at the central level (i.e. by NCEEE) and securely distributed to an appropriately selected sample of national schools and students. Otherwise the outcome from their administration will result in an unequal and unfair difference between actual forms of the test, which statistical analysis cannot compensate for. In reality poor performance in these exams can be attributed as much to lack of educational opportunities and social conditions as to individual ability.

It is important to note that results from the Grade 8 test in mathematics and science show low levels of achievement, with maths in particular showing no improvement over results in Grade 4. There was also a wide variation in performance across the various governorates. Performance in the Arabic examination was slightly better than observed in mathematics and science. When these results are compared with results from the TIMSS 2007 report, (Olson et al., 2007) they confirm an inadequate level of academic preparation. Table 6.1 shows the distribution of students, and number of schools, at each level of TIMSS performance in mathematics and in science in Grade 8.

Table 6.1 Number of schools and percentage of students performing at or above each level of the TIMSS classification (2007)

	TIMSS Score	Mathematics		Science	
		Number of schools	% of students	Number of schools	% of students
Below “Low” International Benchmark	< 400	2 991	45.4	2 632	40.0
At or above “Low” International Benchmark	=>400 < 475	1 720	26.1	1 860	28.2
At or above “Intermediate” International Benchmark	=>475 < 550	1 320	20.0	1 443	21.9
At or above “High” International Benchmark	=>550 < 625	477	7.2	583	8.8
At or above “Advanced” International Benchmark	=> 625	74	1.1	64	1.0
Total		6 582	99.9	6 582	99.9

Source: Ministry of Education (2011), *Pre-University Education in Egypt: Background Report*, Ministry of Education, Cairo.

The Grade 6 examination (muddiriya examination)

The examination administered by each *muddiriya* at the end of Grade 6, while based on the national curriculum, is developed locally in each governorate. This test is a standardised examination at the governorate (*muddiriya*) level. If the results from this examination were to determine whether students continue to the preparatory education stage (the next three years), or be tracked to a vocational education, as has sometimes been proposed, the results could be very negative. Those with very low scores (approximately 5%-10% of students) would go into the vocational track at this stage. This tracking would almost certainly limit students’ potential entry to the labour market at the unskilled level, meaning very low income for life, with no chance of further education.

Systems which track students early have been shown to tend to maintain inequalities between generations, as the results in this type of examination are very strongly related to educational opportunities, quality of schools attended, and random factors that have little to do with indicators of future academic performance. In addition, these examinations are administered by the *muddiriya*, and each exam is developed only loosely based on NCEEE guidelines and curricular requirements. There are no controls to ensure similar levels of difficulty for the same examination across the *muddiriya*.

Added to these problems, which in themselves would make it extremely unfair to use the examinations for tracking students, the exam does not provide an adequate source of information for educational planning, as it is not designed to produce comparable results over time and across regions.

The Grade 9 examination (preparatory certificate examination)

There is also premature tracking of students through the Grade 9 examination, which can determine whether the student goes into general education, technical or vocational schools. At this stage, 60% of students are moved out of the general education track and either end up in technical and vocational education, or abandon the educational system altogether. As with the Grade 6 examination, this process of early tracking perpetuates inter-generational inequalities, as the results in this type of examination are strongly

related to educational opportunities, quality of schools attended, and random factors that have little to do with indicators of future academic performance.

These examinations are also administered by the *muddiriya*, and as with the Grade 6 exam, each is developed only loosely based on NCEEE guidelines and curricular requirements, and the levels of difficulty are not standardised across districts. These exams do not provide an adequate source of information for educational planning, as there is no attempt to develop them in such a way that could produce equitable exams over time and across regions.

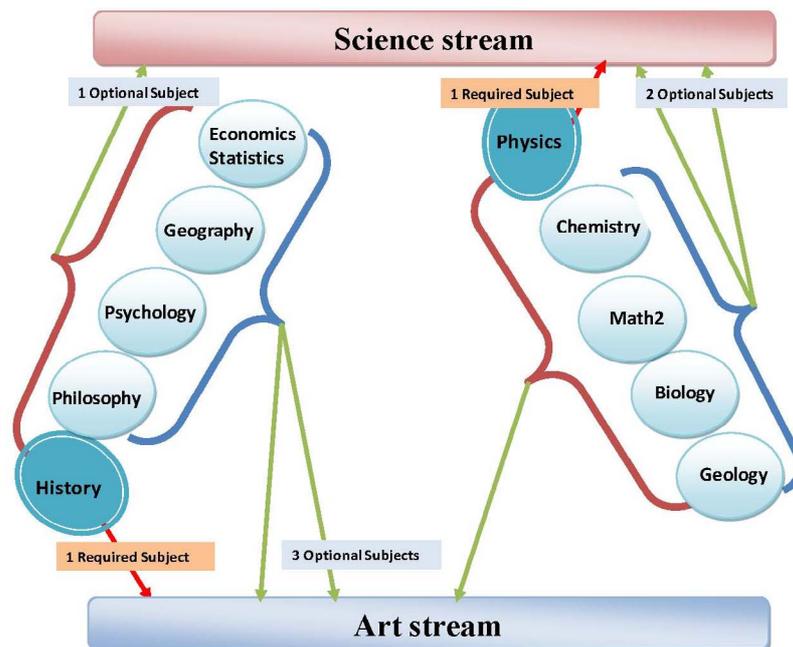
These shortcomings will have great impact on questions of ethical and fair testing. They will result in inadequate measures of student achievement, and affect the formation of the skills students need for the labour market. There is research evidence that shows that technical/vocational track students come disproportionately from low income families, and that poor governorates have a larger proportion of vocational students (ETF and World Bank, 2005). These technical and vocational schools are not designed to pay attention to any remedial needs the students may have, which might have also contributed to their low performance in the exam and thus resulted in their tracking to the technical/vocational stream. They also fail to provide students with the possibility to transfer at a later stage back to the general education stream, thus limiting their chances of getting potentially better jobs with higher incomes. As a result, tracking of students into technical and vocational schools that are in general of low quality and not well connected to the market needs and employers maintains the cycle of poverty and under-education (World Bank, 2007). Students who attend these schools have to deal not only with lack of qualified staff and modern equipment, they are also granted less respect by society at large than those in general education. TVET is considered the track of education for the poor and less privileged, while general education opens doors to advancement and better jobs. This stigmatising, and lowered expectations for future jobs and access to learning opportunities, is all determined by the results from the Preparatory Certificate examination at the end of Grade 9, and does not reflect students' general ability, learning potential or preferences.

The thanawiya amma final examination

Perhaps the most insidiously influential examination in the educational system is the *thanawiya amma*, which is both an end-of-secondary education certification examination and a university placement exam. In Egypt's educational system, this exam is the sole determinant of the future academic tracking of a student. The score obtained in this exam determines whether students will attend university and, if so which faculty will accept them. This is the only truly "national test", with all students in secondary education sitting exactly the same examination, which they must take while they are in Grade 12 of general secondary education. All universities and their faculties throughout the country use only the results from these examinations as a mechanism to select students. Since higher education is so stratified in Egypt, results from this exam determine not only entrance, but whether the student will be accepted in the most desirable faculties (i.e. medicine, pharmacy, dentistry and engineering) or the less desirable faculties (law, education etc.). Those with the lowest scores will have to attend technical colleges. These characteristics result in an extremely competitive process which makes the *thanawiya amma* a very high-stakes exam which can determine the future academic and career outcomes for those taking it.

This extremely competitive examination and selection system is responsible for probably one of the most undesirable side effects of the educational system. This is the prevalence of the insidious private tutoring phenomenon, which is very problematic as it creates greater inequalities and degrades the secondary educational system. This “shadow educational system” as it has been called (Bray, 2009), is in reality a private supplementary education which has evolved into an uncontrolled system where much of Egypt’s education really takes place. In many instances the same teachers that teach in the secondary schools have their own private tutoring sessions (with as many as 60 students in a “class”) in which they teach topics at a greater depth and with greater attention to details than their own teaching in the public education system classes. These private lessons are taken by a majority of students in general secondary education, who often are absent from regular school classes to work on their private tutoring. They are also seen at the primary and preparatory level, although to a lesser degree. They are expensive in relation to the average family income, and consume students’ evening or afternoon hours, in a dramatic preparation for the *thanawiya amma*. Unfortunately, this aspect of Egyptian education contributes to the unfairness and inequality of the system, as it favours the middle or upper classes who can afford more private tutoring and under better conditions, in the belief that it will positively influence the results on the *thanawiya amma*. This final examination thus dominates the educational process.

Figure 6.1 Options and examination combinations available to the student in the Science and Art tracks, when taking the *thanawiya amma* examinations



Source: Ministry of Education (2010), Condition of Education in Egypt 2010: Report on the National Education Indicators, Ministry of Education, Cairo.

Examination content and results

Figure 6.1 illustrates the various alternatives and combinations of examinations for students taking the *thanawiya amma* examinations at the end of Grade 12. All secondary school students must study six mandatory subjects: Arabic, a first foreign language, a

second foreign language, math 1, national studies and religion. Each student must also choose to study four out of nine optional subjects, which will determine whether the student follows the scientific or arts (humanities) track. For the arts track, five subjects (exams) are mandatory: economics, geography, history, philosophy and psychology. Arts track students must also select one scientific subject from the scientific track. For those students wishing to follow the scientific track, five exams are mandatory: biology, chemistry, geology, maths and physics, plus one subject from the arts track which the student may choose (Ministry of Education, 2010).

The six core exams that each student must take are called the O-Level exams. They can also choose to take an additional exam called the A-Level subjects, chosen from a limited number of topics. If they score higher than 5 out of 10 in the A-Level exam, they can add those points to their *thanawiya amma* score. Currently, approximately 30% of students choose the science track and 70% the arts track. These numbers include those students who, after not performing well in the initial science track exams, switch their declared track to art, in order to at least qualify for lower prestige programmes such as those in the humanities, law or education.

The final score in the *thanawiya amma* for each student is the sum of the student's score in both the mandatory and optional subjects, except for national studies and religion, where the student must have a passing grade but the scores are not included in the calculation of the total score. If the student fails an exam he or she can retake it in the summer of that same year. Upon passing the retake, only 50% of the total score on the failed exams are added to the calculation of the total score.

As noted above, the *thanawiya amma* system presents many problems. In terms of opportunity and equity, the private tutoring “shadow education” system that dominates secondary education inevitably tends to favour those who can afford it, and who can afford better teachers and/or conditions, that is with lower private tutoring class sizes. The way the curriculum is assessed in each of the tests overemphasises memorisation and rote repetition of concepts and facts, without any attempt at measuring higher-order skills. As for the psychometric characteristics of the exams, they are constructed without pilot testing the items, therefore without knowing the real difficulty level of the questions, nor their comparability across cohorts. There has been no attempt to construct equivalent (equated) exams over the years, and the examination design would make it impossible to do so because they lack the psychometric properties needed (common items, similar reliabilities, parallel designs, etc.).

In terms of the scoring, the exams are scored by readers who have little or no training in essay scoring. There is no attempt to measure the reader effect – the level of strictness with which each reader scores. Exams are not double rated (marked by at least two separate and independent raters) and therefore there is no tracking of reader performance. The double rating of exams is needed to be able to calculate and compensate for “rater effects”, that is, the influence and variability of the ratings due to individual idiosyncrasies. Thus, the results are completely blind to the quality of the scoring and the variations between readers, resulting in an extremely unfair system, with variations in the score that can be attributed as much to the reader (lack of knowledge, poor attention, tiredness, score drift, random reader differences, etc.) as to the student's true level of performance. In addition, because it is not possible to equate exams over time, cohort effects are ignored and the information that the MOE receives is highly compromised. Even in the best of circumstances, these examinations cannot provide an accurate picture of how the educational system is truly performing, true variations within the country and

true variations over successive years. As the stakes in this examination are so high, defining students' educational and labour market opportunities, it results in an assessment system which is unethical, and with serious equity and fairness issues, as well as providing very poor information to educational authorities.

Despite the problems of the *thanawiya amma* exam noted above, it is being used to decide the academic and productive life of millions of Egyptians, and it has had a markedly negative influence on the educational system as a whole, leading it in the direction of increased arbitrary admissions and placement policies to the university. It has also magnified an already existing culture of “teaching- (and private tutoring-) to-the-test”. All of the efforts in the minds of students, parents, and even teachers, is concentrated on success in what is essentially a poorly constructed, badly scored examination, with no accommodation for those students with physical challenges, and which is invalid for the purposes to which it is being used.

Some of the results from this examination programme also show the differences in performance between the various regions of Egypt. In general, Upper Egypt governorates have the lowest performance among their students, when compared to Lower Egypt. The governorates with the lowest performance are: Giza, Fayoum, Minia, Assuit, Sohag, Qena and Aswan, while some governorates show large variations within the very governorate such as in Giza; Fayoum; Matroh; New Valley; North Sinai; and South Sinai (MOE, 2011). These results also can be explained by the socio-economic status of these regions and the quality of their schools and educational system as a whole.

What can be done?

The problems outlined above have their origin in a multitude of causes and historical circumstances. Some of them can be traced back to the very origins of the Egyptian system of education. This chapter will concentrate on those that have to do with the quality and manner of testing, and in particular refer to those programmes which involve high-stakes assessments, at various points in the educational cycle.

Requirements for an acceptable high-stakes assessment programme

There have been many publications dealing with this topic, perhaps one of the most influential worldwide are the *Standards for Educational and Psychological Testing* (AERA, APA and NCME, 2011). They provide a concise and clear summary of all aspects of a testing programme that should be attended to in order to have an acceptable programme with sufficient reliability and validity, and which has a positive influence on the educational process. First of all, we should note that these standards call for the use of multiple measures and/or sources of information to make high-stakes decisions. The reason being that with multiple instruments or sources of information more valid inferences can be made to better inform the decision processes. This is related to what is considered to be the central concept and most important consideration in evaluating the quality of an assessment programme, which is that it should ensure the appropriate use and interpretation of the assessment results (Linn, 2000).

The discussion that follows will focus on some of the main issues that have to do with the quality of an assessment programme.

Validity

There is a general consensus that validity is perhaps the single most important element to take into account in evaluating the quality, application, uses and results of any testing or assessment programme. It is interpreted to mean the degree to which both data and theory support the expected interpretation of test scores which result from the use of the test. The concept of validity has evolved over time (Wolming & Wikstrom, 2010). Originally, it was assumed to be the correlation between the test and a certain criterion (criterion validity), later expanded to include the accuracy with which it measures what it is intended to measure (content validity), and then the potential to predict another outcome based on the scores from the test being used (predictive validity).

Later in the process of developing validity, the concept of “construct validity” was introduced as central to its conceptualisation, meaning the appropriateness of the theoretical concept underlying what is being measured and integrating both elements of the content and the criterion being used. Finally, in a seminal paper, Messick (1989) presented what is considered to be the current accepted conceptualisation of validity: “Validity is an integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores or other modes of assessment” (Messick, 1989: 13). This interpretation of validity incorporates all the previous necessary components, but it also adds the element of the consequential impact of the test or assessment. Therefore, in developing an assessment programme, several elements need to be specified:

- **Purpose and supporting evidence:** contrary to what was previously understood, there is no such thing as a “valid test”. Validity is specific to a particular use of a test and to a particular interpretation of the results. Therefore, both of these elements have to be clearly stated based on evidence that supports the use and interpretation of the test. In this sense, a test can be validated to fulfil various possible functions, such as:
 - To determine how well students meet the expectations of certain content standards (or curriculum standards).
 - To provide information to a variety of stakeholders (teachers, parents, educational authorities, students, etc.) about the level of performance attained by students (individually or as a group or cohort).
 - To make high-stakes decisions, such as completion of a school cycle or admissions to further education.
 - To monitor school or system performance.

For each one of these possible functions, sufficient evidence has to be collected and analysed, to demonstrate that the use of the test and test scores for that purpose is justified. Then, and only then, will the use of the test and its resulting scores be valid for that specific use and application.

- **Content coverage and cognitive level of the test:** justifying the use of a test for a particular purpose and with a certain interpretation of the scores requires logical arguments, detailed examination of the curricular requirements, and logical analysis of the actual processes needed to answer each item or question. In addition, the blueprint of the test has to specify how the content standards (that is,

what the teachers are supposed to teach and the students supposed to have learnt) will be examined through items or questions.

- **Performance standards:** content standards do not specify “how well” the students need to perform to be considered at a certain level of performance. Classifying student results according to criteria expressed in performance standards also needs to be justified in an appropriate way. This implies that developing these standards has to be a careful process, both theoretically and empirically based. In addition, the process of developing performance standards needs to determine the probability of misclassification in these levels of performance and minimise it, within the characteristics of the test, due to its negative impact, particularly in high-stakes tests.
 - Implications and consequences for high-stakes decision making: students should receive carefully designed detailed information of the content they are responsible for learning, the characteristics of the test to be administered, and a detailed explanation of the criteria to be used in the scoring and in assigning level of performance. In addition, students should be provided with a fair opportunity to learn the material they will be responsible for, and teachers must be capable of teaching the full range of the content included in the test, and for the full range of performance levels expected and which will be used in the assessment programme. Also, students should be given examinations of known psychometric characteristics (including their difficulty and ability to discriminate the performance levels), constant over forms and session of administration, in order to justify their fairness and equity. Nevertheless, because there is always a degree of error in tests, high-stakes decisions should never be made based on a single test. They should involve not only a number of assessments, but also various sources of information to reach a decision such as admission to a university or university programme.
 - Special accommodations: as a corollary to the requirements stated above, regarding fairness and equity, and because of the implications for high-stakes assessments, adequate and appropriate accommodations should be made for students with certain degrees of disabilities and language problems. Without these accommodations, a programme is not truly equitable. The accommodations need to be sufficient to compensate for the performance needs, while respecting the validity of the construct being measured and the reliability of the test implementation.
- **Deciding on item format and other test characteristics:** several issues need to be resolved, among them the type of item format to be used. If it is a multiple-choice format, several technical aspects need to be taken into account for item development and form construction. Multiple choice tests offer the advantage of overall lower costs for the programme and increased reliability. At the same time, they require careful planning for the development of good quality tests, taking care to include items which require different levels of cognitive processing, clear statements, appropriate distractors, and uni-dimensionality of their structure, to allow for the correct interpretation of results and adequate equating over various forms and administrations. Also, the construction of an adequate item bank is an issue for further discussion and planning. Qualified

psychometric and test development staff are needed in order to develop and maintain this highly technical process, which requires in-house training and updating of procedures and techniques.

The other alternative is the construction of a constructed-response test (essays, short answers, etc.) which requires the student to carry out a certain performance (e.g. writing an essay). That performance needs to be evaluated based on a carefully constructed scale (rubric) on which human raters are trained to recognise the actual performance level of the student for that specific item. This is by no means a trivial matter, and presents various degrees of complications. First of all, the training of the human raters is time consuming and expensive, requiring time to develop training materials, train the expert raters, and control the quality of their performance. This is an ongoing process which starts with accepting only those raters that reach at least an 80% agreement with agreed-upon scoring standards for existing sample ratings. Their performance during the rating sessions needs to be monitored to ensure that they maintain the minimum standard. In addition, the training has to be repeated several times over the course of an exam scoring, because raters' performance drifts from the anchor values on which they have been trained. At minimum, two raters should rate each response and when scoring of a given student production differs significantly between the two, a third rating is required. All this results in a very expensive and difficult to maintain programme. If a programme does not follow all of these and other necessary steps to guarantee the validity and the reliability of the scores in an “essay test” (constructed response), then the whole process is compromised and the assessment programme lacks the quality necessary to inform the educational stakeholders, and even more so, lacks the necessary quality standards to be a high-stakes assessment.

There is ample evidence that multiple-choice tests, in most circumstances, can tap into the same cognitive level depth of topics and questions as an “essay test”, with results which are much more reliable (Aiken, 1982). Of course, for certain skills (i.e. writing) and for the assessment of some higher-order skills, a performance test cannot be avoided.

The assessment of critical thinking skills

Cognitive psychology considers all of human reasoning as a very complex process that is adaptive, reacting and accommodating to the environment, and reflective (Kuhn and Dean, 2004). One aspect of this high-level functioning is the cluster of abilities that come under the general rubric of “critical thinking skills”. They are generally considered to involve recognising a problem, searching for and finding solutions for such a problem, collecting relevant information, recognising the existence of logical relationships, making inferences, interpreting data, evaluating evidence and arguments, drawing conclusions, and making appropriate generalisations. Critical thinking skills thus include the ability to evaluate information, formulate solutions to problems, recognise patterns and their implications, and apply previous experience. These skills enable students to interpret the issues in relation to a given situation, select the relevant knowledge to develop multiple options, and apply the most appropriate one to achieve a desired result or to develop new knowledge (Lai, 2011).

The need to assess these basic critical thinking skills in students within the educational system has been highlighted lately (Pithers and Soden, 2000). These skills represent an important aspect of what schooling should be able to provide for the cognitive growth of the individual. An educational system which is able to increase these abilities significantly would make an important contribution to the education and

employability of those within that system, as critical thinking skills provide a useful predictor of aptitude for learning and trainability, as well as of higher-level functioning. Therefore, the assessment of critical thinking skills helps determine not only what students have learned, but also how they learn and their general aptitude for learning. Measuring these skills reveals how students judge and analyse information and the processes they follow to make decisions and reach conclusions and generalisations.

Critical thinking skills have also been used to assess value-added factors, by assessing students' levels as they enter and leave the educational system. As predictive as they are of future learning and employability, they are also less likely to be affected by socio-economic factors given that their underpinnings are basic cognitive processes with a relative normal distribution in the population. Although critical thinking skills are not totally disconnected from early experiences and the quality of inputs in the educational system, they are much less influenced by these factors than measures of acquired knowledge based on scores from tests reflecting the school curriculum. They are in themselves constructs that should be evaluated as products in the value-added consideration of the educational process,

Implications and suggested solutions to some of the challenges in current educational assessments

These considerations constitute the underpinnings of the approaches that should be followed to improve the assessment system currently in place in the Egyptian educational system. The discussion will concentrate on the national exams, in particular the high-stakes examinations which track students into vocational or general education and determine admissions to further stages. The test-driven educational system with its lack of quality educational opportunities is itself the source of major inequalities of educational outcomes. These inequalities are highly correlated with income levels, and the early tracking of students at various points in their early years. In addition, an education which emphasises rote memorisation and repetition, with little incentives for creativity and critical thinking is also creating an environment in which lower-order skills and intense tutoring permeate and distort the system.

As discussed in later chapters of this report, the options for reform in Egyptian education, including reform of assessment, will need to be weighed up against other claims for priority policy attention and assessment of the probability of support and success. Presented here, on technical grounds, is the direction that policy ought to take.

Sample-based examinations at Grades 4 and 8

In order to make these tests more useful as a source of information for the various stakeholders in the educational system, these tests should become national tests and be designed to provide equivalent and comparable information across the country and school districts and regions.

The Grade 6 examination (*muddiriya* examination)

This examination should be completely overhauled. Although it is important to obtain information at this stage of the educational cycle, such information should be at the institutional level, with no impact on the students. Therefore, it would be wise to tailor it so that it matches the progression established in the Grade 4 and 8 examinations, and testing the same subject areas. Indeed, it would be of great use to have an intermediate

grade between those two exams, in order to be able to follow the progression of the student body through the educational cycle.

The Grade 9 examination (preparatory certificate examination)

The primary level of education should be evaluated in Grades 4 and 6, and linked to the performance and growth observed in Grade 8. All students should progress to the preparatory stage, consisting of a common core that would prepare students to enter a common secondary education cycle. The suggested secondary education stage should consist of a general education core that would enable students to progress to university or other destinations, as they so choose. It would also offer a series of optional subject areas in which students could concentrate on either humanities (arts) or sciences with more advanced courses, or select from a range of technical/vocational courses which would enable them to enter technical tertiary institutions or go prepared directly into the labour market.

The *thanawiya amma* final examination

The most difficult area to consider is the secondary education examination certification exam, the *thanawiya amma*. As noted previously, there are psychometric grounds for arguing that this examination programme does not comply with the necessary quality standards needed for state-of-the-art professional educational measurement. Additionally, from a whole-of-education perspective, this exam stimulates low-level schooling outcomes that degrade the entire Egyptian education system, while encouraging a private tutoring industry that widens social inequalities. Yet, for all these perverse and far-reaching impacts, the exam fails to provide valid evidence of the level of mastery in the tested fields. Nor is there any evidence pointing to the predictive validity of the scores for admitting students to university with rates of achievement at that level. For these reasons, the assessment methodology and fundamentals of the *thanawiya amma* examination programme need to be totally overhauled, to assess students' critical thinking skills as well as their content knowledge, and the current single examination replaced with a broader assessment that draws on evidence from all three years of secondary education.

An overall change to the system of educational assessment in Egyptian schooling will have a positive “knock on” effect on the quality and effectiveness of learning. It should reduce rote learning, put greater emphasis on learning strategies and the development of higher-order skills, and make the learning experiences more sensitive to ability and prospects of future achievement for all students. Thus, educational outcomes will be fairer and more equitable, tending to diminish the impact of socio-economic level and indirectly weakening society's reliance on the shadow private tutoring system. Fundamental reform of assessment promises to improve educational quality, reduce inequity, expand the life prospects of students, and increase Egypt's economic prospects.

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Chapter 7.

Financing general education

This chapter considers the funding of education in Egypt, including the amount and allocation of resources for different stages and types of schooling and by governorate. It examines how efficiently and effectively the available resources are used to achieve the intended results. It considers the equity of public and private spending on education.

All education systems rely on finance to function. However, while education spending is necessary, it may not be sufficient to lead to desired learning outcomes (World Bank, 2013: 4). Education spending facilitates the provision of essential inputs such as teachers, school buildings and learning materials – but the availability of financial resources does not guarantee a quality education. In addition, while there needs to be an adequate level of spending on inputs to complement the learning process, the appropriate input mix varies across and within countries. For example, some systems may choose to attract fewer high-quality teachers with higher salaries, and other systems may opt for small class sizes with more teachers available to increase student-teacher interaction.

Arguably, there are three important principles of a school finance system: adequacy, equity and cost-effectiveness (World Bank, 2013: 10). Adequacy and equity aim to ensure that schools systems provide a minimum amount of necessary resources for all students to learn regardless of their socio-economic circumstances. Cost-effectiveness in school finance is the attempt to ensure that available funds are put to the best use in terms of achieving desired outcomes.

Adequacy of general education financing in Egypt

The education budget is the government's planned allocation of public resources to achieve its educational goals and objectives. As Table 7.1 shows, total general education expenditures in Egypt averaged 2.6% of gross domestic product (GDP) and 8.5% of total public expenditures in the last five years, with a slightly increasing trend in the later years. By way of comparison, the corresponding average OECD shares for education in 2009 were 4.4% of GDP and 9.8% of total public expenditure; for Mexico, they were 4.0% of GDP and 15.5% of total public expenditure (OECD, 2012).¹ Clearly, the Egyptian shares are low by comparison. To begin with, Egypt's total public expenditure represents a relatively low share of GDP: at 30%, it is roughly 10 percentage points lower than the 2006 OECD average of over 40%. In addition, education expenditures are low as a share of total public expenditure. This in turn reflects the fact that subsidies, grants and social benefits (known as "Chapter 4" types of expenditure, see below) make up a miniscule share of education expenditure (see Table 7.3), whereas they are by far the largest share of total expenditures in Egypt, averaging 32% over 2007-12 (Ministry of Finance, 2013). Arguably, government expenditure reflects a country's historical and current political decisions about the role of government in providing services and redistributing income, and in the case of Egypt, subsidies, grants and social benefits feature far more prominently than education.

It must be acknowledged, however, that countries can spend similar amounts on education relative to national wealth with very different results. For example, Uruguay devotes 3% of its public resources to education relative to GDP and outperforms neighbouring countries in the Programme for International Student Assessment (PISA) while Argentina spends 4.6% and is the lowest performer among Latin American countries participating in the assessment (World Bank, 2013). Nonetheless, while all countries that invest relatively large shares of GDP into education vary in terms of student learning outcomes – including access to schooling, completion of primary or secondary education and how much students learn – all of the countries that underperform also invest relatively small shares of their GDP in education.

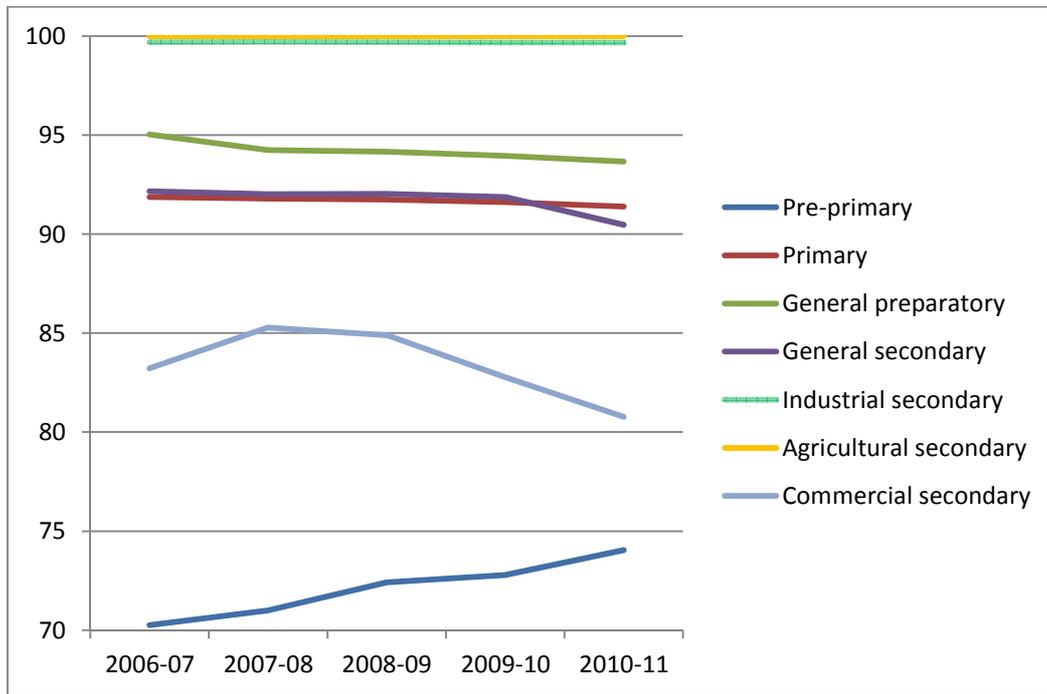
Table 7.1 General education expenditure, as share of GDP and total public expenditure (2007-13)

EGP millions	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Nominal GDP	895 500	1 042 200	1 206 600	1 371 100	1 542 300	1 778 000
Total public expenditure	282 290	351 500	365 987	401 866	470 992	533 785
as % of GDP	31.5	33.7	30.3	29.3	30.5	30.0
Total education expenditure	22 848	26 433	31 614	36 345	40 335	49 985
as % of GDP	2.6	2.5	2.6	2.7	2.6	2.8
as % of total public expenditure	8.1	7.5	8.6	9.0	8.6	9.4

Source: Ministry of Education Budget Department and team's calculations.

Some of the variation in the share of government expenditure to GDP across countries may be the result of different approaches to delivering goods and services and providing social support by the government. For example, countries with substantial private-sector financing and provision of education might be expected to have lower shares of public expenditure. In Egypt, as Figure 7.1 shows, levels of education exhibit varying share of government enrolment and varying trends in this share over time, although the general picture is one of a high but declining public-sector share of enrolment. Agricultural secondary education is exclusively government provided, and industrial secondary education is almost exclusively government provided in Egypt. Among other levels, the pre-primary share of government enrolment is lowest of all but exhibits an upward trend, while primary education is stable at roughly 91% of total enrolment, and general preparatory and general secondary are predominantly government provided but show a declining trend. Commercial secondary education also shows a declining government share of enrolment.

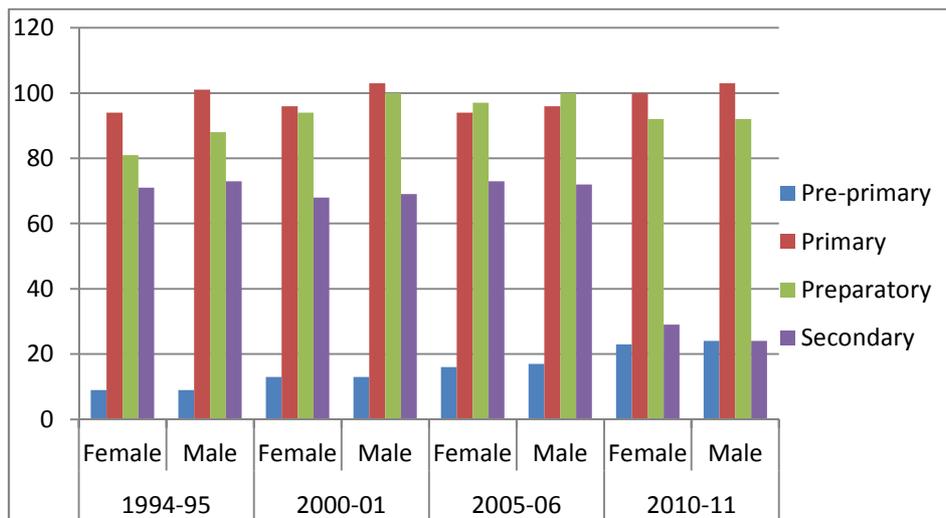
Figure 7.1 Trends in government schools’ share of enrolment, by level of education (2006-11), Egypt



Source: Ministry of Education (2011a), *Annual Statistical Abstract 2010-11*, EMIS Department, Ministry of Education, Cairo, p. 21, and team’s calculations.

Figure 7.2 shows overall enrolment rates over the period 1994-2011. Enrolment in pre-primary shows an increasing trend, primary enrolment is relatively stable, and both preparatory and secondary enrolment levels have declined since 2005.

Figure 7.2 Enrolment rates by level of education, 1994-2011



Source: CAPMAS, (2011), *Egypt in Figures 2011*, CAPMAS (Central Agency for Public Mobilisation and Statistics), Cairo, p. 523 and review team’s calculations.

Education's low share of public expenditure may reflect Egypt's low expenditure per student. Table 7.2 provides the per student (or unit) recurrent cost by level of education, in Egyptian pounds (EGP) and as a percentage of 2005 per capita GDP. It also shows how much each level costs relative to the unit cost of a primary-school student. Costs per pupil range from 11.2% of per capita GDP at the pre-primary level to 21.3% at the general secondary level. By contrast, the 2009 OECD average for per student expenditure relative to per capita GDP was 20% for pre-primary students, increasing to 23% for primary students, and 27% for secondary students (OECD, 2012). In other words, per student expenditure in Egypt is low in international terms in comparison with OECD countries. The figures for Mexico are 15% for pre-primary and primary students and 18% for secondary students – in other words, higher than the Egyptian shares for pre-primary and primary levels, but lower for secondary.

There are, of course, no rules on the relative cost of students at different levels of education, but, for example, a vocational student may be expected to cost more given the technical equipment often required in instruction, and the cost per student at secondary level can be expected to be higher than at primary level given the more specialised teaching required. As Table 7.2 shows, the unit costs for general education in Egypt follow the expected pattern, with pre-primary costing slightly less per student than primary, and preparatory and general secondary more costly. It is, however, surprising to find that industrial, agricultural, and commercial secondary education are less costly than general secondary education – indeed, in the case of agricultural and commercial education, they are even less costly per student than preparatory education. This would indicate an underfunding of students at these levels of education.

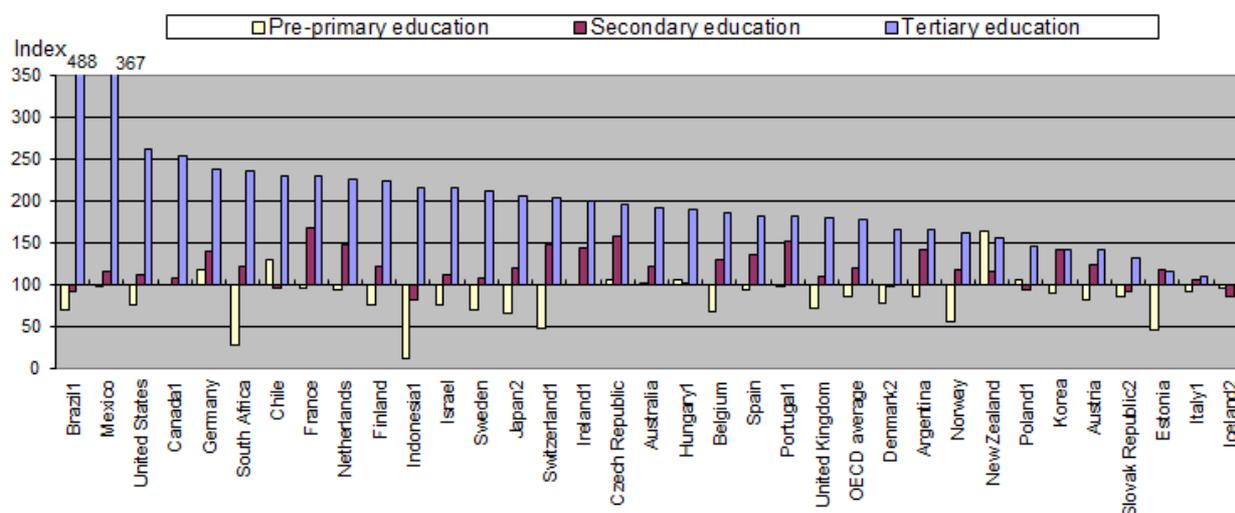
Table 7.2 Unit cost by level of education, based on budget for fiscal year 2005/06

Education level	Current expenditure unit cost (EGP)	Unit cost relative to primary unit cost (%)	Unit cost relative to 2005 GDP per capita (%)
Pre-primary	839	85.1	11.2
Primary	986	100.0	13.1
Preparatory	1 527	154.9	20.4
General secondary	1 596	161.9	21.3
Industrial secondary	1 582	160.4	21.1
Agricultural secondary	1 397	141.7	18.6
Commercial secondary	1 384	140.4	18.4

Note: 2005 GDP per capita (current EGP): 7 502

Source: Ministry of Education (2011b), *Pre-University Education in Egypt: Background Report*, Ministry of Education, Cairo, p. 37; World Bank World Development Indicators, and review team's calculations.

Figure 7.3 OECD comparison of unit costs at different levels of education (2009)



Note: A ratio of 300 for tertiary education means that expenditure per tertiary student by educational institutions is three times the expenditure per primary student by educational institutions. A ratio of 50 for pre-primary education means that expenditure per pre-primary student by educational institutions is half the expenditure per primary student by educational institutions.

1. Public institutions only.
2. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.

Countries are ranked in descending order of expenditure per student by educational institutions in tertiary education relative to primary education.

Source: OECD (2012), Education at a Glance 2012: OECD Indicators, OECD Publishing, Paris, <http://dx.doi.org/10.1787/eag-2012-en>, Chart B1.3, "Expenditure per student by educational institutions at various levels of education, for all services, relative to primary education (2009)," p. 220.

Broadly speaking, however, as Figure 7.3 shows, the unit costs relative to each other in Egypt are similar to the OECD average relative unit costs, with secondary education somewhat more costly per student than primary education, while pre-primary is only slightly less costly. The gap between primary and secondary is, however, larger in Egypt than in the OECD on average, and this is also true if Egypt is compared with Mexico and South Africa.

Cost-effectiveness of general education financing in Egypt

The general education sector budget in Egypt is divided, broadly speaking, into three components: 1) the budget of the Ministry of Education (MOE); 2) the budgets of the 29 education directorates at the *muddiriya* (governorate) level; and 3) the budgets of the services authorities affiliated with the sector – the General Authority for Educational Buildings (GAEB), the Education Development Projects Fund, the Service Fees Fund, the National Centre for Educational Examination and Evaluation (NCEEE), the National Centre for Educational Research and Development, the General Authority for Literacy and Adult Education, the Professional Academy for Teachers (PAT), and the Regional Centre for Adult Education. Each of the entities involved is a budgetary authority, separately negotiating its budget with the Ministry of Finance. Table 7.3 provides the

shares of the different budget authorities, by chapter (also known as economic type) of expenditure, in the total general education budget. For ease of reference, all shares above 1% are provided in bold.

Two facets stand out. First, the largest budget authorities by far are the education directorates at 85.4% of total expenditures, followed by the Ministry of Education in a distant second at 8.7% of the total and GAEB at 5.1%. All other budget authorities constitute less than 1% of total expenditures. Second, 83% of the total budget is for wages and compensation, followed by 9% for capital investments, and 7.4% for goods and services. All other chapters make up less than 1% of the total budget. Current expenditure overall is therefore around 91% of total expenditure, which is the same as the OECD average in 2009,² whereas current expenditure in Mexico and South Africa had a higher share at 97% and 96%, respectively. However, the OECD average for the share of wages and compensation is 71.3% of total expenditure, which is substantially lower than the Egyptian figure of 83%. Mexico and South Africa, on the other hand, dedicate 89% and 82% of total expenditures respectively to compensation, i.e. roughly comparable to Egypt.

The distribution of the total general education budget reflects the fact that the MOE budget contributes directly to the educational process through financing textbooks, instructional materials, laboratories and information technology (Ministry of Education, 2011b). The majority of budget allocation to education is derived, however, from the budgets of the governorate education directorates, which include the salaries of teaching and non-teaching staff at the school level, teaching materials, and students' nutrition. Education directorates at the governorate level use education departments at the district level to distribute most in-kind materials to the schools. The education directorate budgets also consolidate the budgets of all affiliated departments in addition to the salaries and operating expenditure of the directorate as supervising entity. Education directorates also allocate budgets to specific line items in Chapter 2 (purchases of goods and services) of the department budgets to support school budgets.

Internationally, school finance systems have rules (whether formal or informal) that determine the size of the budget, the distribution of resources across levels of government and schools, and in some cases, the proportion of spending on different categories such as capital and current needs (World Bank, 2013). Two broad approaches determine the level of educational resources to be transferred by funding entities: negotiations with recipients or determination through a funding formula. Where negotiation is used, subnational levels of government or schools may present their case for funding based on known criteria to the central government funding agency and receive resources according to how well the funding agency considers the bid to meet the criteria. Alternatively, the funding agency may simply modify the previous year's payment up or down a few percentage points, or use its own discretion to determine the level of resources to be allocated to subnational levels of government or schools.

Table 7.3 General education budget, 2012/13, percentage share by chapters (types) of spending

Entity	Chapter 1	Chapter 2	Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 8	Total
	Employee wages and compensation	Goods and services purchases	Interest	Subsidies, grants and social privileges	Other current expenditures	Non-financial asset purchases (investments)	Loans repayment (local and foreign)	
Ministry of Education	1.5	2.6	0.0	0.0	0.0	4.4	0.1	8.7
Education Directorates	80.7	4.6	0.0	0.0	0.0	0.0	0.0	85.4
General Authority for Education Buildings	0.4	0.1	0.0	0.0	0.0	4.5	0.1	5.1
Education Development Projects Fund	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
Service Fees Fund	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
National Centre for Education Examination and Evaluation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
National Centre for Education Research and Development	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
General Authority for Literacy and Adult Education	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Academy of Teacher Professional Development	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Regional Centre for Adult Education	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	83.0	7.4	0.0	0.0	0.3	9.0	0.2	100.0

Note: Figures are provided rounded to one decimal place.

Source: Ministry of Education Budget Department and review team's calculations

Where funding formulas are used, transfers may be linked to particular measures, such as the number of students or the socio-economic characteristics of students, communities or regions. The main distinguishing feature of a funding formula is that it uses explicit criteria to calculate the transfer of resources. If the specific formula is relatively easy to understand, made public, and respected and enforced, it may improve equity and accountability as it makes the factors affecting the funding schools receive transparent to educational stakeholders.

Once the amount of resources to be transferred has been determined, a further decision needs to be made as to the form in which the transfers will take – cash or in kind (World Bank, 2013). Many policy makers, particularly in developing countries, use a simple in-kind formula that employs student/teacher ratios to guide the allocation of teachers, textbooks, equipment and other materials for schools. Some argue that good practice would be to distribute cash instead, since when resources are transferred in kind, the receiving entity has limited discretion in the use of resources. However, if government transfers resources in the form of cash, there are often stipulations on how it is to be spent. Alternatively, educational resources can be transferred in the form of an unconditional grant, leaving it to the discretion of the recipient how the money is spent – although in practice, such discretion is often limited to the purchase of current inputs such as teaching materials and teacher salaries. These rules that govern resource flows, and the discretion and autonomy each level has to allocate budgets, affect the level of accountability, transparency and performance in the system. Throughout the system, good use of information and analysis in allocation decisions could increase the amount of government resources dedicated to the education sector and improve efficiency of spending.

In the case of Egypt, the different budgetary authorities operating in the education sector – including the MOE, the education directorates and service authorities – negotiate their allocations for the fiscal year directly with the Ministry of Finance. These negotiations are not based on specific targets or performance criteria but rather on the incremental approach, i.e. a certain percentage increase in budget is granted, based on the previous year's budget and the Ministry of Finance's revenue projections that provide the overall budget envelope. In recent years, there has been a move towards preparing the education sector budget on the basis of programmes and activities. In the case of the GAEB, which has offices in each governorate, the decision on building new schools and the size of the school is made based on actual student enrolments rather than enrolment projections – so that facilities are provided with a lag at best – and they are made in co-ordination with the governorate administration rather than the MOE. Of course, it must be acknowledged that GAEB must operate within available resources.

In recent years, beginning with the 2008/09 academic year, three governorates undertook a decentralisation pilot whereby schools had the authority to decide on some of the spending related to small maintenance works under Chapter 2 (purchase of goods and services). This pilot was deemed successful and was expanded as of 2011/12 to all governorates. This decentralisation scheme was designed to allocate funds based on a formula that combined enrolment with a Human Development Indicator that captures socio-economic conditions and thereby sought to improve equity of spending. However, schools had a pre-approved list of items on which the decentralised funds could be spent – as opposed to having more discretion which may have led to more efficient allocation of resources by schools. Nonetheless, in discussions with school principals, the decentralised allocation was valued as in some instances it amounted to money that would otherwise not have been available at all. The mechanism by which principals obtain the

decentralised funds vary, however. In the governorate of Luxor, for example, which was one of the pilot governorates and has a relatively long experience with decentralisation, schools are given the full amount of funding up front against an approved school improvement plan, and then expenditures are audited at a later date. In the case of Qena, a relative newcomer to decentralised funds, school principals are informed of their allocation, but have to spend the money first and show proof of expenditure before being reimbursed – resulting in long delays and cash flow problems for the school. In discussions with finance officers at the governorate level, it was clear that governorates sometimes face budget deficits and delays in paying education staff salaries (not to mention other recurrent costs), but these deficits are reconciled at the level of the governorate since there can be no defaulting on civil servant pay.

Table 7.4 shows that the education directorates' share of the education budget has increased from 80.6% in 2007/08 to 85.4% in 2012/13. While the share of the GAEB remained roughly constant over this period, the share of the MOE declined by roughly 5 percentage points. In nominal terms, the education directorates' budget increased from EGP 18.4 billion in 2007/08, to EGP 42.7 billion in 2012/13, which translates to a 36% increase in real terms. In addition, as Table 7.5 shows, the overwhelming share of the education directorates' budget is dedicated to Chapter 1 type spending, i.e. employee wages and compensation. The share has remained roughly constant at about 95% over the 2007-13 period, despite the substantial increases in the size of the budget overall. All of this reflects that fact that there have been recent increases in teachers' pay in Egypt, and these increases are driving the budget increases for the education directorates. The result is that wages and compensation crowd out other spending by the education directorates. Yet there is ample empirical evidence to suggest that the productivity of additional spending on books and instructional materials (the purview of the MOE) can be 10 to 100 times larger than that of additional spending on teacher inputs, such as higher wages or small class sizes (Pritchett and Filmer, 1999).

Table 7.4 Share of budget authority in total general education budget, 2007-13 (%)

Entity	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Ministry of Education	12.7	9.1	9.9	9.3	9.2	8.7
Education Directorates	80.6	84.6	83.7	86.0	85.1	85.4
General Authority for Education Buildings	5.2	5.1	5.3	3.8	5.1	5.1
Education Development Projects Fund	0.5	0.4	0.4	0.4	0.3	0.3
Service Fees Fund	0.0	0.0	0.0	0.0	0.0	0.0
National Centre for Education Examination and Evaluation	0.0	0.0	0.0	0.0	0.0	0.0
National Centre for Education Research and Development	0.0	0.1	0.0	0.0	0.0	0.0
General Authority for Literacy and Adult Education	0.8	0.6	0.5	0.4	0.1	0.4
Academy of Teacher Professional Development	0.0	0.0	0.0	0.1	0.0	0.0
Regional Centre for Adult Education	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: Figures are provided rounded to one decimal place.

Source: Ministry of Education Budget Department and team's calculations.

Table 7.5 Budget of education directorates, by chapter (%)

Economic type of expenditure		2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Chapter 1	Employee wages and compensation	94.6	95.6	95.8	94.9	94.6	94.5
Chapter 2	Goods and services purchases	5.3	4.4	4.2	5.0	5.3	5.4
Chapter 3	Interest	0.0	0.0	0.0	0.0	0.0	0.0
Chapter 4	Subsidies, grants and social privileges	0.1	0.0	0.0	0.1	0.1	0.1
Chapter 5	Other current expenditures	0.0	0.0	0.0	0.0	0.0	0.0
Chapter 6	Non-financial asset purchases (investments)	0.0	0.0	0.0	0.0	0.0	0.0
Chapter 8	Loans repayment (local and foreign)	0.0	0.0	0.0	0.0	0.0	0.0
Total		100.0	100.0	100.0	100.0	100.0	100.0

Note: Figures are provided rounded to one decimal place.

Source: Ministry of Education Budget Department and review team's calculations.

General education staff can be divided into teachers, principals and other administrative staff, and labourers. In 2010/11, there were roughly 797 000 teachers, 64 000 principals, and 434 000 labourers, a total of 1.3 million staff. In other words, teachers constituted 61.5% of total employment, principals 4.9%, and labourers 33.5%. However, as Table 7.6 shows, this average masks a wide variation across governorates, with the proportion of teachers being as low as 51.6% in Dakhliya, and as high as 75.6% in Helwan, a difference of 24 percentage points. The OECD uses a different classification of teaching and non-teaching staff, dividing them into instructional personnel (classroom teachers, academic staff, teacher aides), professional support for students, management and administrative staff, and maintenance and operations personnel (OECD, 2012).³ According to this classification, 69% of total staff were instructional personnel in OECD countries on average in 2010 (in primary and secondary education), 12% were involved in management and administration, 10% in maintenance and operations, and fully 9% in professional support for students. Clearly, therefore, the mix of education professions in

Egypt is very different to OECD countries, with apparently a smaller share of teachers in Egypt, a smaller share of administrative personnel, a far larger share of maintenance and operations staff, and a non-existent category of professional support for students. (This latter category includes professional staff who support students' their learning, and personnel employed in education systems who provide health and social support services to students, such as guidance counsellors, librarians, nurses, psychiatrists and psychologists.) In other words, although the wage bill features prominently in Egypt's total general education expenditures, it is arguably financing an inappropriate mix of education staff from the point of view of ensuring the best possible education outcomes for the money spent.

Despite the relatively small share of teachers in total employment, the average student/teacher ratio (STR) across all of general education is relatively low at 20 students per teacher (see Table 7.6). Again, there is wide variation across governorates, with the STR as low as 6 in ElWadi ElGidid and as high as 38 in October 6 governorate – though it must be said that the average for the October 6 governorate represents a clear outlier and all other governorates have an average STR below 30. Given this relatively low average student/teacher ratio, it is of interest to consider average wages of teachers in Egypt. Figure 7.4 provides the average general education wage, by governorate – admittedly, a rough figure as it does not differentiate between the different types of general education employees described above, not to mention the different grades and seniority levels of employees.⁴ In addition, wages and compensation data were not available for the *muddiriyas* of Helwan and October 6.

Bearing these caveats in mind, the average general education salary amounts to just over EGP 31 000 per year, which in turn is roughly 1.6 times per capita GDP in 2012.⁵ Again, there are wide regional variations, with the average wage in BeniSuef below EGP 29 000, or 1.5 times per capita GDP, compared to a high of over EGP 69 000 in Giza, or 3.6 times per capita GDP. However, Giza is a clear outlier here, and with the exception of Giza and four other governorates (Cairo, Matrouh, and North and South Sinai), all other governorates have an average salary in the EGP 27 000-36 000 range, i.e. 1.4-1.9 times per capita GDP. Although there are wide variations in teachers' pay internationally, some evidence points to an average wage of 3 to 3.5 times per capita GDP as conducive to a productive education system (see Bruns et al., 2003). By this measure, and despite the recent increases in teacher pay in the country, it seems that teachers remain underpaid in Egypt.

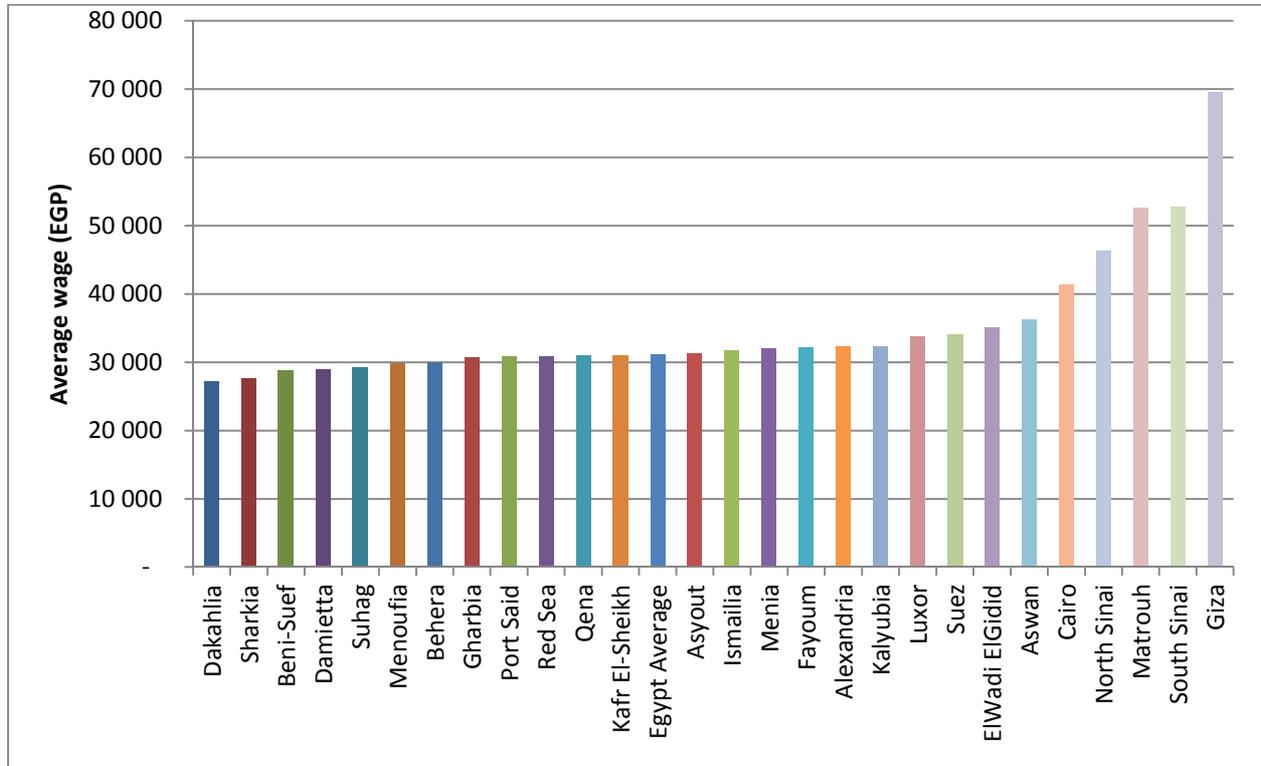
Table 7.6. Shares of education employees (%) and student/teacher ratio, by governorate (2010-11)

(Ranked by decreasing share of teachers)

Governorate	Teachers	Principals and other administrative staff	Labourers	Student-teacher ratio
Helwan	75.6	4.2	20.3	23.8
Giza	75.4	4.5	20.1	24.4
Suez	74.2	4.6	21.3	15.9
October 6	73.8	5.6	20.6	37.6
Cairo	72.8	4.4	22.8	17.2
Fayoum	71.8	4.5	23.7	24.6
Matrouh	68.3	10.8	20.9	29.7
Asyout	66.5	5.8	27.7	24.8
EIWadi ElGidid	66.2	4.7	29.2	6.0
Beni-Suef	66.1	5.3	28.6	21.9
Aswan	65.9	7.1	27.0	17.2
South Sinai	65.7	9.2	25.1	12.6
Kafr El-Sheikh	64.1	5.1	30.8	18.6
Alexandria	63.6	7.0	29.4	20.5
Behera	63.6	4.3	32.1	23.0
Kalyubia	62.8	5.3	31.9	23.5
Menoufia	61.2	4.0	34.8	16.8
Damietta	61.2	5.4	33.5	12.8
Ismailia	60.8	6.6	32.7	18.6
Luxor	59.5	4.9	35.6	18.5
Suhag	59.1	5.2	35.7	20.9
Red Sea	59.0	4.2	36.8	14.2
Qena	58.8	4.7	36.5	21.9
North Sinai	57.8	5.8	36.4	11.5
Sharkia	56.7	4.0	39.3	17.8
Menia	55.3	6.0	38.7	26.9
Gharbia	55.1	5.3	39.5	18.6
Port Said	53.9	3.9	42.3	11.1
Dakahlia	51.6	3.9	44.4	16.2
TOTAL	61.5	4.9	33.5	20.0

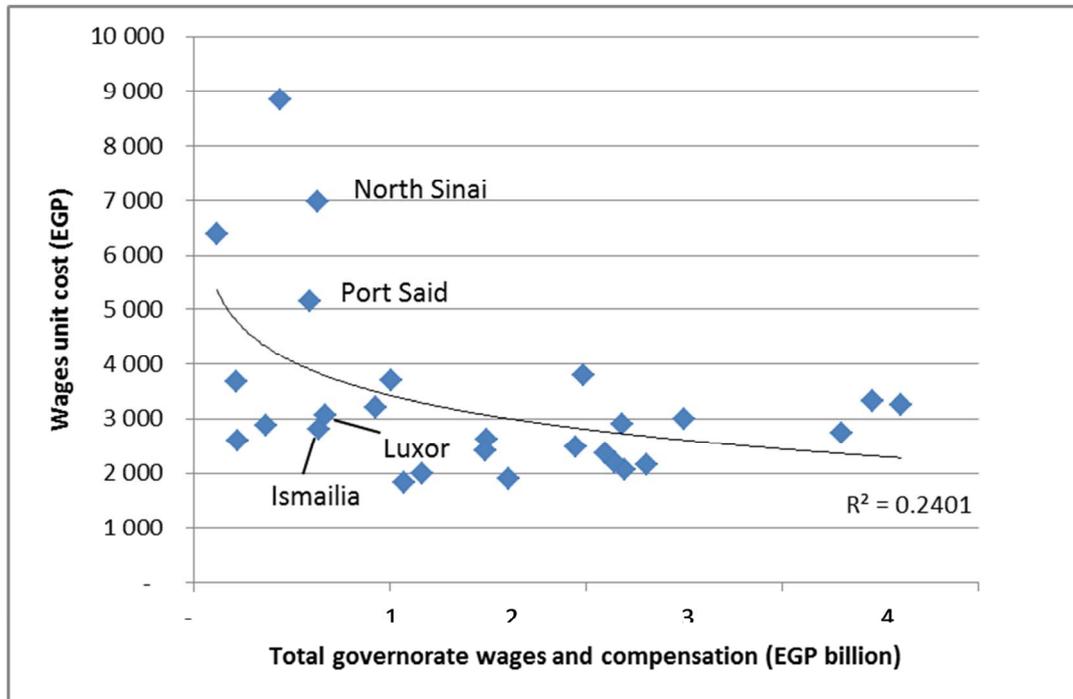
Note: Figures are provided rounded to one decimal place.

Source: Ministry of Education (2011a), *Annual Statistical Abstract 2010-11*, EMIS Department, Ministry of Education, Cairo, pp. 70, 185, 291, 333, and review team's calculations.

Figure 7.4 Average general education wages by governorate, 2012-13 (EGP)

Source: Ministry of Finance (2012), Budget Circular of the Fiscal Year 2012/2013, Ministry of Finance, Cairo; Ministry of Education (2011a), *Annual Statistical Abstract 2010-11*, EMIS Department, Ministry of Education, Cairo, pp. 185, 291, 333; review team's calculations.

There are, of course, economies of scale to be expected in the financing of general education, and as Figure 7.5 shows, this holds true for Egypt as well: the higher the total governorate spending, the lower the unit cost. Nonetheless, the figures also reveal that there are governorates that have similar amounts of total spending on wages and compensation, yet widely varying levels of spending per student. The four governorates of North Sinai, Port Said, Luxor and Ismailia are highlighted in Figure 7.5 to demonstrate this fact. In the case of North Sinai, the sparse population is likely to contribute to the high unit cost – but the same cannot be said for Port Said. Similarly, Luxor and Ismailia have relatively low per student spending – the reasons for which would need further examination. From an efficiency point of view, comparing governorates with similar spending on wages but varying per student spending can shed light on possible efficiency gains for those governorates with the higher per student spending. In other words, while international comparisons are often helpful, sometimes comparisons within-country are yet more beneficial as so many other attributes of the system are similar across governorates, thus allowing for a more focused comparison of those attributes that might lead to efficiency improvements.

Figure 7.5 Relationship between total wages and compensation and unit cost of education

Source: Ministry of Finance (May 2013), *The Financial Monthly*, Vol.8(7), Ministry of Finance, Cairo; Ministry of Education (2011a), *Annual Statistical Abstract 2010-11*, EMIS Department, Ministry of Education, Cairo, p. 70; review team's calculations.

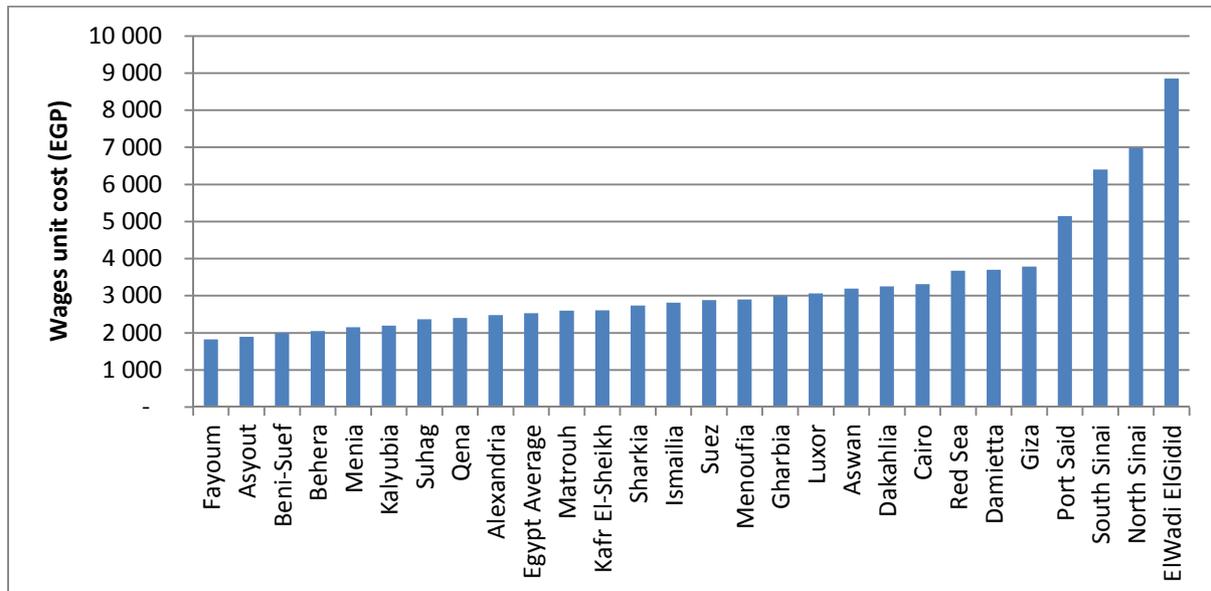
Equity of general education financing in Egypt

A key goal of education finance systems is to promote equity in educational opportunity (World Bank, 2013) – the notion that access to quality education should not depend on a person's socio-economic background or other inherited attributes, such as gender or religion. It is possible for education systems to compensate for socio-economic differences, and studies show that resources matter more for children from low-income households than for other children. Location can also be a factor, as costs of inputs may vary: for example, teachers may be more expensive in rural areas, but the cost of school property may be higher in urban areas. The literature recognises two types of equity in school finance: horizontal and vertical equity (World Bank, 2013). Horizontal equity promotes the equal treatment of equals, and is used to justify similar levels of funding across comparable schools in subnational divisions. Vertical equity, on the other hand, supports the unequal treatment of unequals. For example, more spending may be necessary to provide an equivalent education to a student whose native language is different from the language of instruction. School finance systems have a few strategies for promoting equity. There may be a mechanism to equalise education spending across subnational divisions to achieve fiscal neutrality, so that the amount of resources available for education is not related to the wealth of a student's location – in other words, to achieve horizontal equity. Other systems use student weightings to distribute funding, and assume that spending should differ for certain types of students – an attempt at achieving vertical equity.

In the case of Egypt, the education sector does not appear to have a policy goal of achieving either horizontal or vertical equity. Admittedly, individual governorates do not have to rely on their own revenues to finance general education, since the Ministry of Finance allocates funds based on historical budgets and using national revenues, as described above. Yet as Figure 7.6 shows, there is wide variation in the per student cost of a general education student (taking wages only into account, but as wages represent such a large proportion of the cost this is roughly equivalent to the per student cost). The unit cost of education amounted to EGP 2 528 in 2012 on average across the country, but with wide variation from below EGP 2 000 in Fayoum to almost EGP 9 000 in ElWadi ElGidid. The outlier governorates with markedly higher unit costs include North and South Sinai, again probably a reflection of their sparsely populated terrain. Giza and Cairo, which previously showed above average wages, continue to show above average unit costs, though not as markedly, reflecting the dense population in those governorates. Matrouh, also a governorate with relatively high average wages, now shows average unit costs, indicating perhaps particularly high densities of population. However, even excluding the four clear outliers, the variation in unit costs across governorates remains substantial, with those in Giza more than twice those in Fayoum.

The nature of the budget-setting process may contribute to these horizontal inequities. Budgets are based primarily on historical allocations but when individual education directorates negotiate directly with the Ministry of Finance, the political clout of individual governors or their administration can play an important role. In addition, any gains achieved in any particular year are very unlikely to be lost in following years – instead, future budgets are likely to build more or less incrementally on these gains, so that the gap between governorates is likely to grow over time. A different approach to budgeting, one based on a per-student formula, for example, could lead to better equity outcomes.

Figure 7.6 General education per student cost in terms of wages (EGP), by governorate (2012/13)

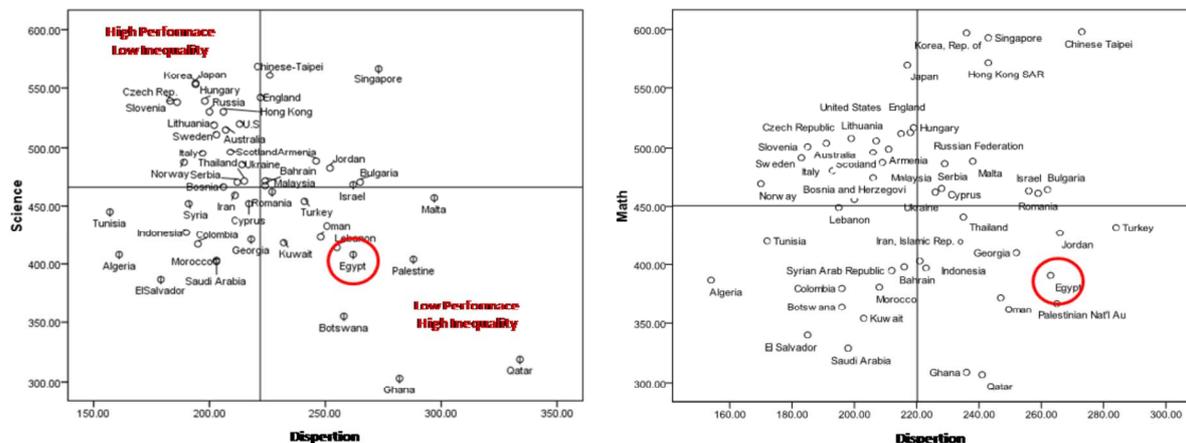


Source: Ministry of Finance (May 2013), *The Financial Monthly*, Vol.8(7), Ministry of Finance, Cairo; Ministry of Education (2011a), *Annual Statistical Abstract 2010-11*, EMIS Department, Ministry of Education, Cairo, page 70; review team's calculations.

In terms of vertical equity, differentials in spending per student are particularly problematic if they are associated with differentials in education outcomes for students, for example disadvantaging those from poorer socio-economic backgrounds. In fact, data from national examinations in Egypt show that circumstances beyond the student's control such as socio-economic status explain one-quarter of educational achievement inequality at the end of primary and one-third at the end of preparatory education.⁶ This pattern of increasing inequality due to circumstances suggests a build-up of inequalities over the primary and preparatory cycles – an especially problematic finding from an equity point of view. According to the national examination scores, the gaps associated with fathers' and mothers' education, family wealth and geographical location are large, with family background playing the most dominant role, but birth governorates additionally explain a significant share of exam-score inequality.

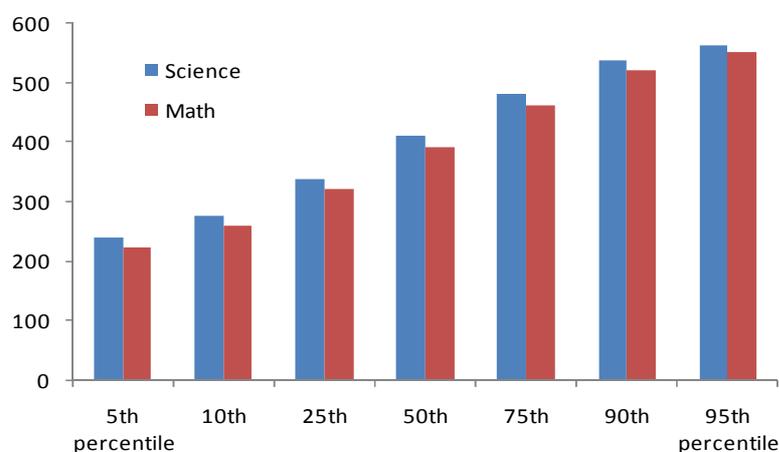
Egypt's overall performance in the Trends in International Mathematics and Science Study (TIMSS) is also not only low but exhibits wide disparities in student performance. The gap between top and bottom achievers is large, and Egypt has a relatively larger share of pupils with low scores (see Figure 7.7). Furthermore, student performance on TIMSS depends to a large extent on parental education, wealth and geographic location; see Figure 7.8 for the impact of socio-economic status (parental wealth) for example. The impact of parental education was large in both the 2003 and 2007 TIMSS test, with gaps of about 30% between the children of post-secondary graduate parents and those of parents having less than primary education (World Bank, 2012). Additionally, there were large disparities associated with location, with children in rural areas performing on average 40 points below those in urban areas.

Figure 7.7 International performance-dispersion map in maths and science, TIMSS 2007



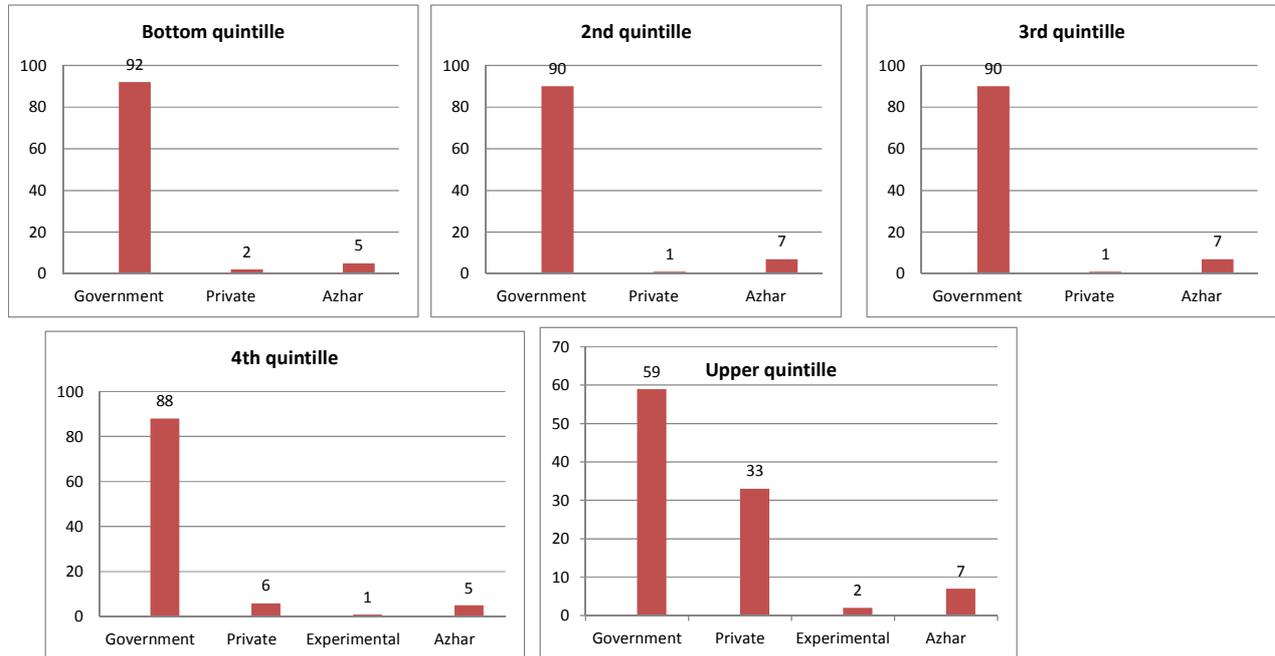
Note: High performance, low inequality means that learning outcomes are at a high level and there is little variation among students. Low performance and low inequality combines poor learning outcomes with wide discrepancies between students.

Source: World Bank (2012), Arab Republic of Egypt: Inequality of Opportunity in Educational Achievement, Report No. 70300-EG, Human Development Sector Unit, World Bank, Washington, DC, p. 62.

Figure 7.8 Achievement in 2007 TIMSS by socio-economic status

Source: World Bank (2012), *Arab Republic of Egypt: Inequality of Opportunity in Educational Achievement*, Report No. 70300-EG, Human Development Sector Unit, World Bank, Washington, DC, p. 62.

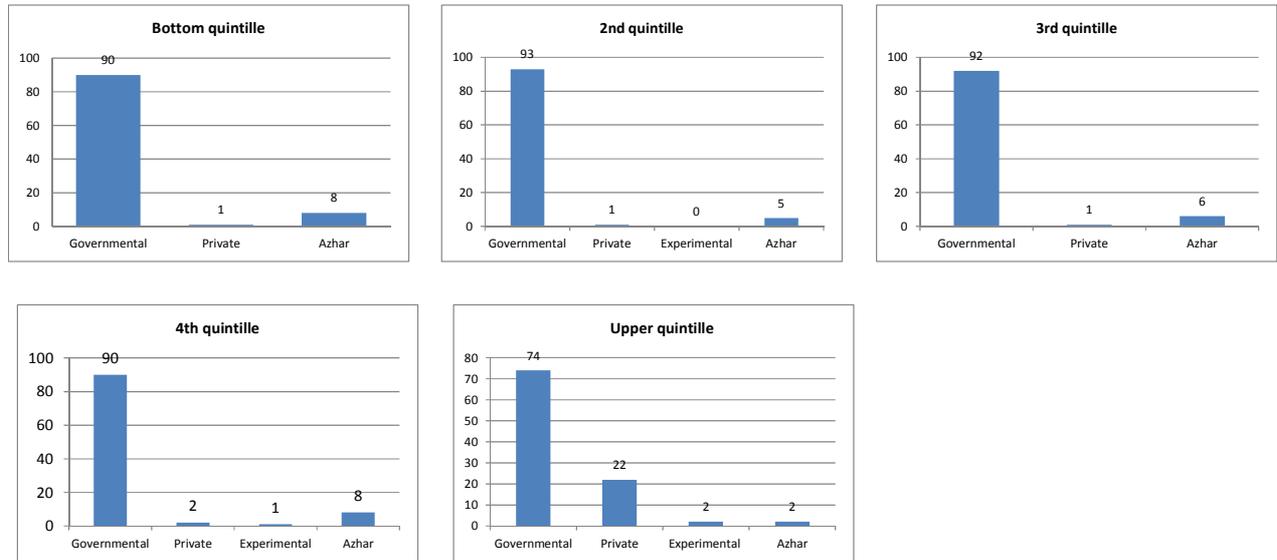
As mentioned, the inequities in learning outcomes build up progressively through primary and preparatory (lower secondary) schooling. Two mechanisms were found to contribute to this build-up in learning inequities: the school systems attended and private expenditures on education (World Bank 2012). As outlined in Chapter 2, several school systems coexist in Egypt, including various forms of government, private and experimental schools. While most schools are public and teach in Arabic, some government experimental schools and private schools use English and other languages. The majority of Egyptian pupils – about 90% – from the bottom four wealth quintiles attend government primary and preparatory schools (Figure 7.9 gives the breakdown for primary education). Among pupils from the highest wealth quintile the share attending private or experimental schools is 35% at the primary level and 25% at preparatory.

Figure 7.9 Type of primary school system attended, by family wealth

Source: World Bank (2012), *Arab Republic of Egypt: Inequality of Opportunity in Educational Achievement*, Report No. 70300-EG, Human Development Sector Unit, World Bank, Washington, DC, p. 54.

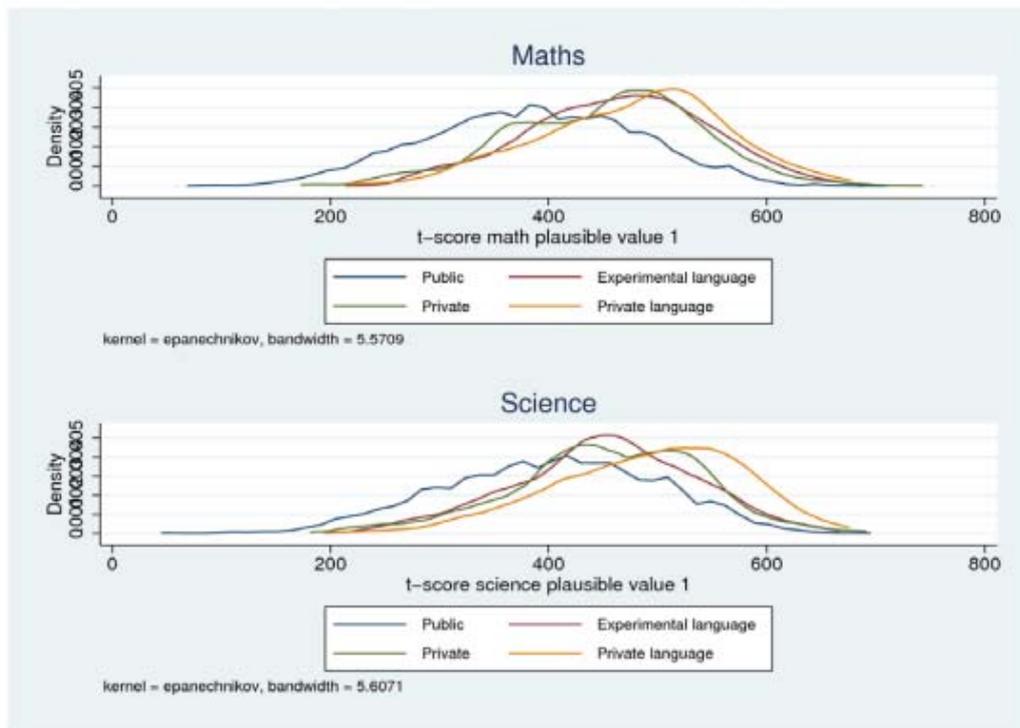
At the secondary level, once students have been tracked into general and vocational schools, children from different family backgrounds appear to be allocated into completely different school systems: less than 20% of pupils from the bottom two quintiles attend general public or private secondary schools, while close to 75% attend public vocational education. Conversely, 75% of the pupils from the highest quintile attend general public or private secondary schools, and only 21% public vocational schools (see Figure 7.2). There is, in other words, a kind of sorting by family wealth. This – combined with the fact that spending per student on vocational streams is relatively low and spending per general secondary student is relatively high – means that public expenditures are reinforcing the inequities resulting from student socio-economic background, rather than counteracting them.

Figure 7.10. Type of secondary school system attended, by family wealth



Source: World Bank (2012 Arab Republic of Egypt: Inequality of Opportunity in Educational Achievement, Report No. 70300-EG, Human Development Sector Unit, World Bank, Washington, DC, p. 56.

Furthermore, learning achievement in regular government schools falls below the achievement observed for students in other school systems. Figure 7.11 shows the distribution of 2007 TIMSS test scores for children attending preparatory schools in different systems. There are very large achievement gaps across school systems: the average test scores are 384 for maths and 402 for science in public preparatory schools, 464 and 451 in experimental language ones, 451 and 455 in private preparatory schools, and 478 and 491 in private language ones. Average scores are associated with higher standard deviation in experimental language, private and private language schools than in regular public schools (respectively .8, .7, and .9), as students perform in a wider range above and below the average. This suggests that either assessment in public schools is not sufficiently sensitive to differences in actual student performance, masking low performance, or that experimental and private language schools are better for high performing students than for low performing ones.

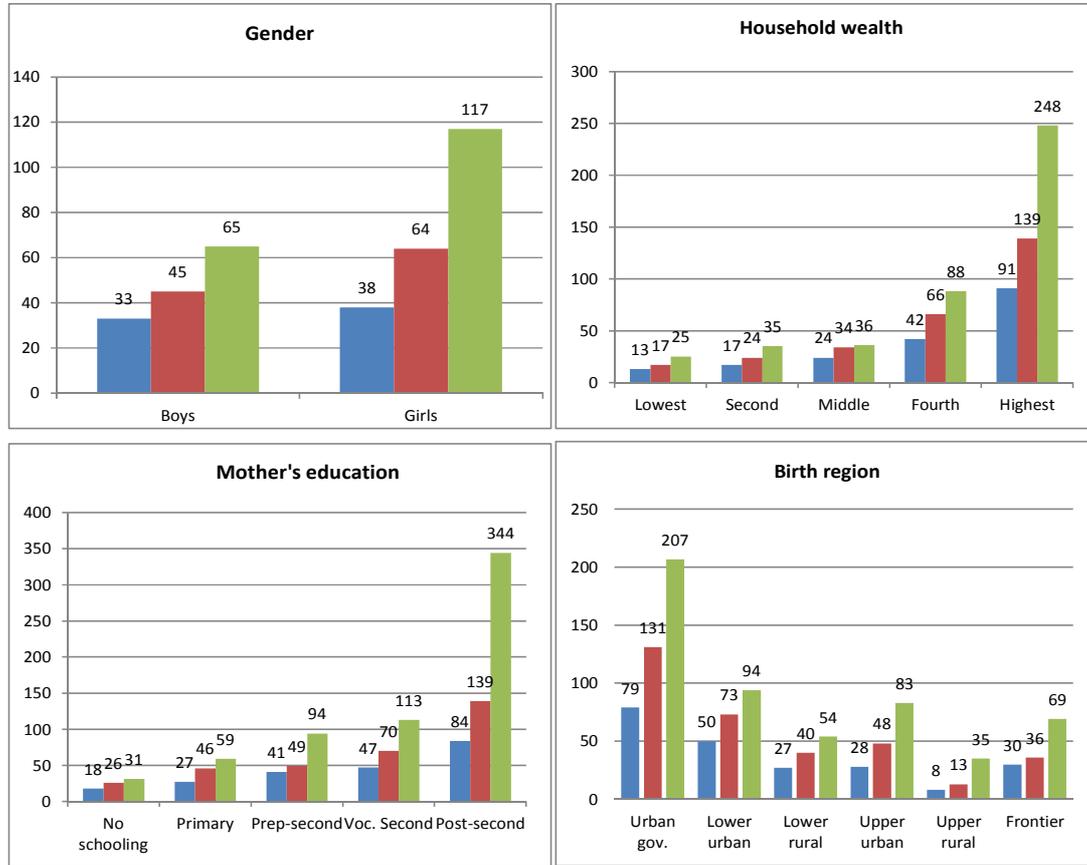
Figure 7.11 Distribution of 2007 TIMSS scores by education system

Source: World Bank (2012), Arab Republic of Egypt: Inequality of Opportunity in Educational Achievement, Report No. 70300-EG, Human Development Sector Unit, World Bank, Washington, DC, p. 63.

As discussed in Chapter 2, household expenditures on tutoring are strongly linked with a pupil's background and significantly contribute to learning achievement inequities (World Bank, 2012). Around 58% of pupils at the primary level and 64% at preparatory level received paid tutoring in 2007, mostly private tutoring but also after-class study groups (World Bank, 2012).⁷ Average expenditures on tutoring per pupil were EGP 35, 54, and 88 per month at the primary, preparatory and secondary levels respectively in 2007.⁸ More recently, students interviewed by the team in 2013 reported their families spending between EGP 200 and 500 per month on private tutoring – but this is anecdotal evidence. According to the 2007 data, families from the highest wealth quintile spent about ten times more than families from the bottom wealth quintile (see Figure 7.12). Families also spent much more on tutoring for girls than for boys: about EGP 117 at the secondary level compared with EGP 65. The starkest disparity emerges when comparing the expenditures of parents with a college education with those of uneducated parents, with tutoring expenditures reaching EGP 340 among secondary pupils whose mothers have a college degree. Expenditures on tutoring are also much higher for pupils born in urban governorates (EGP 210 on average at the secondary level) than for those born in rural regions (EGP 35 in rural Upper Egypt).

Figure 7.12 Tutoring expenditures by circumstances (per pupil, in 2009 EGP)

At primary, preparatory, secondary levels



Source: World Bank (2012), *Arab Republic of Egypt: Inequality of Opportunity in Educational Achievement*, Report No. 70300-EG, Human Development Sector Unit, World Bank, Washington, DC, p. xii.

Addressing issues of adequacy, equity and cost-effectiveness

To summarise the findings of the foregoing analyses, the following observations may be made:

Adequacy of spending

- Public education expenditures, as a share of GDP or total expenditures, are low in Egypt.
- Government schools have a high but declining share of total enrolment, with a greater decline in enrolment rates in preparatory and secondary education.
- Expenditure per student is low by international standards, though somewhat less so for secondary education.

Cost-effectiveness of spending

- The largest share of education spending is done by the education directorates of the governorates.
- Employee wages and compensation make up a high share of total spending.
- Student/teacher ratios are on average relatively low.

- General educational employee salaries are relatively low.

Equity of spending

- There is wide variation across governorates in average employee wages and average per student wage costs.
- Parental education, wealth, and birth governorate explain a significant share of student performance in national assessments and TIMSS.
- Household expenditures on tutoring are strongly linked with a pupil's background and significantly contribute to learning achievement inequities.

Figure 7.13 provides six relevant policy goals needed to reach the three principles of adequacy, equity and cost-effectiveness, as well as the policy levers to achieve them, based on current research (World Bank, 2013). These six policy goals are therefore the ones that school finance systems should meet in order to address issues of adequacy, equity and efficiency. Two goals cover adequacy, or how well school finance systems provide the resources to ensure that all students have the opportunity to receive a high quality education: 1) ensuring basic conditions for learning; and 2) monitoring learning outcomes and conditions. One goal covers equity, or how school finance systems seek to improve education outcomes for students from disadvantaged backgrounds: providing more resources to students who need them. Finally, three goals cover efficiency, or how school finance systems promote the effective use of resources: 1) overseeing service delivery; 2) budgeting with adequate and transparent information; and 3) monitoring resources efficiently.

Figure 7.13 Summary of school finance policy goals and policy levers

Policy Goals	Policy Levers
1. Ensuring basic conditions for learning	{ 1A. Are there policies to ensure basic inputs? 1B. Are there established learning goals?
2. Monitoring learning conditions and outcomes	{ 2A. Are there systems in place to monitor learning conditions? 2B. Are there systems in place to assess learning outcomes?
3. Overseeing service delivery	{ 3A. What mechanisms are in place to verify the availability of resources at schools? 3B. What mechanisms are in place to verify the availability of teachers at schools
4. Budget with adequate and transparent information	{ 4A. Is there an informed budget process? 4B. Is the budget comprehensive and transparent?
5. Providing resources to students who need them	{ 5A. Are there policies to provide more public resources to students from disadvantaged backgrounds? 5B. Do school costs represent a small share of income for low- income families?
6. Managing resources efficiently	{ 6A. Are there systems in place to verify the effective use of educational resources? 6B. Are education expenditures audited?

Source: World Bank (2013), "What matters most for school finance: A framework paper", *SABER (System Approach for Better Education Results) Working Paper Series*, No. 2, World Bank, Washington, DC, page 16.

For Egypt, the framework provided in Figure 7.13 is useful in that it highlights several attributes of an education system that might, at first sight, not be immediately associated with the financing of the system. To begin with, no school finance system can claim to operate well if the country has not established clear learning goals. In addition, the country must have ways and means of monitoring and assessing learning outcomes in order to determine whether goals are indeed being achieved. High-stakes school leaving examinations, such as Egypt uses, are arguably not the appropriate instrument for monitoring and assessing learning outcomes and achievement of targets. Only when the learning goals are known and measurable, can finance system be judged to have delivered the necessary resources adequately or not.

The Framework provided in Figure 7.13 is also useful for Egypt because it highlights the importance not just of providing funds but the process by which those funds are allocated and made available to schools. The current system of negotiation based on historical budgets between governorate education directorates and the Ministry of Finance is not conducive to any of the goals of school finance – in other words, it is neither adequate, nor equitable nor efficient. Instead, a more transparent process that is less amenable to political manoeuvring – perhaps based on a simple per-student formula that takes some equity considerations into account – would better serve Egyptian students. Such a per-student formula allocation could be provided at the school level, allowing principals the discretion to use funding as they best see fit to enhance student learning. In general, and this is another useful aspect of the framework for Egypt, the fact that school finance currently does not incorporate equity considerations at all is unconscionable. There is a very urgent need for the education system to recapture its role as the equaliser and champion of those who are most disadvantaged by external circumstances.

Egypt needs also to think about the efficiency and effectiveness of its education spending. Though spending is on the low side and fiscal space should be found to increase public education expenditure, there are still efficiency gains to be made, both currently and if and when spending is increased. The mix of inputs, whether it be the share of teachers in total staffing or the allocation of other learning inputs, requires adjustment and recalibration. Given relatively low average student/teacher ratios nationwide combined with localised overcrowding, there is an urgent need for detailed mapping and reallocation of teaching staff, perhaps through financial and other incentives. The current trend of those who can afford it resorting to private education – with negative implications for equity – will only be stemmed or reversed through a concerted effort to regain lost ground in the quality of education at public schools.

Table 7.7 Average general education wages, 2012-13 (EGP)

Governorate	Wages and compensation, 2012-13	Total employment, 2010-11	Average salary, 2012-13
Cairo	3 460 763 000	83 533	41 430
Alexandria	1 945 908 000	60 217	32 315
Behera	2 198 798 000	73 318	29 990
Gharbia	2 497 416 000	81 259	30 734
Kafr El-Sheikh	1 493 173 000	48 077	31 058
Menoufia	2 184 506 000	73 318	29 795
Kalyubia	2 143 424 000	66 249	32 354
Dakahlia	3 601 186 000	132 600	27 158
Damietta	1 004 011 000	34 696	28 937
Sharkia	3 300 688 000	119 295	27 668
Port Said	591 789 000	19 196	30 829
Ismailia	638 356 000	20 125	31 720
Suez	362 752 000	10 639	34 096
Giza	1 985 475 000	28 534	69 583
Fayoum	1 072 838 000	33 410	32 111
Beni-Suef	1 162 181 000	40 266	28 863
Menia	2 309 254 000	72 209	31 980
Asyout	1 606 203 000	51 421	31 236
Suhag	2 096 562 000	71 645	29 263
Qena	1 482 476 000	47 822	31 000
Luxor	669 871 000	19 820	33 798
Aswan	926 916 000	25 603	36 203
Matrouh	218 790 000	4 159	52 606
ElWadi ElGidid	438 106 000	12 495	35 063
Red Sea	211 274 000	6 849	30 847
North Sinai	628 253 000	13 575	46 280
South Sinai	114 842 000	2 173	52 850
Helwan		21 290	-
October 6		20 453	-
TOTAL	40 345 811 000	1 294 246	31 173

Notes

1. Mexico and South Africa are emerging economies as distinct from the advanced economies that comprise OECD members. They are thus used as more proximate comparators for Egypt than the advanced economies.
2. OECD (2012), Indicator B6, Table B6.2: “Expenditure by educational institutions, by resource category and level of education (2009)”. It must be noted, however, that these data include both public and private sources, though public sources account for over 90% of the total.
3. OECD (2012), Indicator D2, Table D2.4a. “Teaching staff and non-teaching staff employed in primary, secondary, and post-secondary non-tertiary education institutions (2010)”, p. 453.
4. Wage data at the governorate level were only available as a total for all education employees, without differentiating the different types. For proper analysis and policy making, it would be very important for wage data to be disaggregated by type of employee.
5. According to the World Bank World Development Indicators database, per capita GDP in Egypt in 2012 was EGP 19 106.
6. The discussion and findings on equity in education outcomes draws extensively on World Bank. June 2012. *Arab Republic of Egypt: Inequality of Opportunity in Educational Achievement*.
7. This share decreases to about 50% at the secondary level, which emphasises the link between tutoring and preparations for the preparatory completion exam.
8. The costs in this paragraph are based on the 2007 Survey of Youth Perceptions in Egypt (SYPE) and as such reflect 2007 prices.

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Chapter 8.

Strategic priorities

This chapter focuses on the imperatives that will determine what needs to be maintained and what needs to change. It investigates the dimensions of the task ahead, first in quantitative terms – regarding future growth in the school-age population – and second, regarding matters of educational quality and labour market relevance. It notes that most of the challenges to be addressed in the future are not new, and have not been adequately confronted in the past, but have become increasingly inescapable. The chapter explores the policy considerations involved in establishing priorities, including the principles of policy coherence, educational balance and financial viability, and the issues involved in making policy trade-offs, including matters of policy reform sequencing. The chapter also deals with harnessing donor initiatives.

Little of what has been presented in the foregoing chapters is new. The account of education in Egypt given almost 20 years ago (see Box 8.1) resonates today. The first National Education Strategic Plan 2007-2012 set out to deal with many of the same issues, including curriculum and teacher quality, and to a lesser extent assessment. However, as Chapter 3 describes, only modest progress was made, and then mostly without confronting the underlying problems in the orientation of curriculum and assessment and lack of labour market relevance. Poor teaching persists, and resources in and for schools remain inadequate and misallocated.

Box 8.1 The more things change the more things stay the same

In Egypt, the curriculum is specified in considerable detail at all stages through official textbooks. Curriculum development has been introduced through such textbooks and associated teaching materials. At primary level the current move is towards national tests (at grades 3 and 5) with some local variation in items allowable. This is a curriculum-driven development with the potential to encourage new teaching approaches (such as problem solving, oral and practical work), provide diagnostic information on individual pupil strengths and weaknesses and evaluative information about the curriculum innovations. However, it would appear that for this potential to be realised, teachers would need smaller classes and appropriate training.

Another development with curricular implications is the plan to extend community school development. This development has similarities to Colombia's "flexibilisation of the curriculum". It could cause headaches for a traditional type of national assessment, but with the development of item banks and the use of pre-tested items to link parallel tests, it should not be impossible to allow a degree of local flexibility in the curriculum.

At the secondary stage the *thanawiya amma* examination continues to exert considerable influence on the curriculum. Its content, largely defined by the needs of university entrants, is not wholly appropriate for the ever-expanding numbers who stay on at school. As is the case for most examinations in Egypt, the emphasis is on memorisation of factual information, and the effect on teaching and learning styles is consequently negative.

Source: De Luca, C. (1994), *The Impact of Examination Systems on Curriculum Development: An International Study*, UNESCO, Paris.

The *thanawiya amma* is a high stakes examination for pupils, with the result that such negative effects as teaching to the test (*i.e.* distorting the curriculum), cramming, the proliferation of private tutoring and "external" crib books are endemic. Cheating is also a problem. Reform of the *thanawiya amma* has been mooted, but so far this examination has remained the cornerstone of Egyptian secondary education. It would appear to be difficult to reform, given the high stakes nature of the examination, and the continuing pressure for more stringent selection processes for higher education as greater numbers gain the *thanawiya amma*, and as employment prospects decrease.

An aspect of the organisation of Egyptian education which would appear to inhibit well-articulated curriculum and assessment reform is the overlap in function of bodies with responsibilities in these areas

The student population continues to grow, driven by demographics on the one hand and increasing rates of student participation on the other – through both greater access to primary education and higher numbers of students continuing through the preparatory and secondary stages. Failure to address the deficiencies of the past will make facing the challenges of the future even more difficult.

The dimensions of the task ahead

The team was advised that the fertility rate assumptions underlying the population projections developed by the Central Agency for Public Mobilisation and Statistics (CAPMAS) on the basis of the 2006 census have been exceeded in the subsequent live births data. Table 8.1 shows the revised estimates of the total school-age population for all of Egypt. The population of compulsory schooling age – basic education in the primary and preparatory levels, for students from the age of 6 up to the age of 14 – is projected to grow by 2.3 million (16%) between 2015 and 2025. The population at the age for post-compulsory senior secondary schooling is projected to increase by 1.48 million (31%) over the same decade. Meanwhile, the population eligible for pre-primary education is projected to expand by 271 000 (7%).

Table 8.1 Projected school-age population, Egypt, 2012, 2015 and 2025 ('000s)

Stage of schooling	2012	2015	2025
Pre-primary (ages 4-5)	3 659	3 777	4 048
Primary (ages 6-10)	8 583	9 334	10 379
Preparatory (ages 11-13)	4 637	5 025	6 275
Secondary (ages 14-16)	4 600	4 729	6 209
Total	21 479	22 865	26 911

Source: CAPMAS data prepared for the team, 2013.

Cairo is projected to account for around 11% of growth across all the age groups, consistent with its share of Egypt's population in 2012. The CAPMAS projections do not appear to assume internal migration shifts of any magnitude over the period to 2025. There are also some apparent anomalies in the data across age groups over time.

Hence, the modelling presented below is kept at the national aggregate level (although the projections model takes account of differences between the governorate, for instance in age participation rates by stage of schooling), and confined to only a few of the possible scenarios. Deficiencies in the population estimates mean, for instance, that we could not explore the option of modelling a demand assumption of increasing year-on-year progression for students in rural areas (e.g. halving the gap between the national mean and the regions of highest attrition by 2025).

The schooling system will not have to accommodate all of the increase in the school-age population for several reasons. First, early childhood education is only mandatory for experimental schools and private schools, but not for the mainstream population. Second, in some rural areas access to basic education is not universal. Third, unless year-on-year attrition is reduced by specific policy measures, schools will see losses of student numbers along the pipeline throughout the compulsory years. Fourth, attrition varies significantly by gender, with girls dropping out of the system in greater numbers than boys. Fifth, drop-out rates currently vary considerably across governorates and districts, and under present policy settings will require less school provision in the less urbanised areas. Sixth, post-compulsory participation rates are relatively low, with the transition rate for preparatory to general secondary being 33.5% for boys and 39.2% for girls, and the transition rate to technical secondary 49.1% for boys and 42.3% for girls (MOE, 2010).

Estimates of possible requirements are considered below.

Demand-side assumptions

Demand assumption 1: Baseline

The baseline assumption applies the population growth projections by age to the current rates of access to primary schooling, year-on year attrition rates in basic education by governorate and gender, and rates of general and technical secondary school participation by governorate and gender. The baseline projections of future enrolments are shown at Table 8.2.

Table 8.2 Baseline projections school population, Egypt, 2012, 2015 and 2025 ('000s)

Stage of schooling	2012	2015	2025
Primary (ages 6-10)	7 884	8 472	9 328
Preparatory (ages 11-13)	3 441	3 700	4 395
Secondary (ages 14-16)	2 325	2 381	2 881
Total	13 650	14 553	16 604

Source: team estimates based on CAPMAS population projections, 2013.

On the baseline projection there would be 856 000 additional enrolments in the primary stage over the decade 2015-25, 695 000 additional enrolments in the preparatory stage and 500 000 in the secondary stage. The total enrolment increase, driven by demographic factors alone would be 1 051 000 (7.2%) over the decade, at an average annual rate of increase of 105 100.

A comparison of the baseline for 2012 with the total population is illuminating. The 2012 enrolment figures at each stage of schooling, as a share of the total population for the relevant age cohorts, decline from 91.8% for primary, to 74.2% for preparatory to 50.5% for secondary. The apparent overall leakage along the schooling pipeline is 42%. If the cohort of 6-year-olds starting compulsory education in 2012 was to be compared with the 16-year-old enrolments in Grade 12 ten years later, the apparent accumulated attrition along the pipeline would represent the loss of 51% of the boys and 49% of the girls (see Table 8.3). Even at the end of the compulsory participation stage (after preparatory), the persistence rate is merely 64% for boys and 67% for girls. That is, only two-thirds of students of students who start school complete basic education and only half complete secondary education.

Table 8.3 Apparent leakage through the education pipeline, ages 6 to 16, by gender, Egypt ('000s)

	6-year-olds		Total
	Boys	Girls	
Total 6-year-olds (2012)	974	900	1 874
To primary	906	837	1 743
After primary	878	810	1 688
After preparatory	621	606	1 227
After secondary	435	423	858
% of starting cohort	48.02%	50.55%	49.23%

Source: team calculations based on CAPMAS population projections and MOE estimates of attrition rates by age.

Modelling possible scenarios of the demand for schooling involves making assumptions about government policy interventions on the one hand, and the behavioural responses of individuals and their families on the other. To illustrate the sensitivity of the scenarios, and indicate the potential scale of the enrolment challenge, various assumptions about attrition and participation are explored below.

Demand assumption 2: Universal access to primary education by 2025

Table 8.4 projects future enrolments on the assumption that, by 2025, 100% of 6-year-olds in Egypt would be attending school. The modelling assumes simple linear growth at an average annual rate of increase of 0.5385%.

Table 8.4 Universal access to primary education by 2025 ('000s)

Total in Egypt	2012	2015	2025
Primary (ages 6-10)	7 884	8 532	9 924
Preparatory (ages 11-13)	3 441	3 700	4 575
Secondary (ages 14-16)	2 325	2 338	2 936
Total	13 650	14 570	17 434

Source: team estimates based on CAPMAS population projections.

Compared with the baseline scenario, this demand assumption would result in an increase of 596 000 students in primary school by 2025, along with an extra 180 000 and 55 000 flowing into preparatory and secondary schooling respectively. Universal access, whilst highly desirable, would be a resource-intensive ambition, particularly on a per-student unit cost basis, given the effort required to make provision convenient in some locations and to address cultural attitudes among communities with high levels of

illiteracy. It may be more cost-effective initially to extend early childhood education services into areas where rates of access to primary education are low.

Demand assumption 3: Increasing year-on-year progression for girls

Table 8.5 projects future enrolments on the assumption that by 2025 the attrition among girls in moving from Grade 5 to Grade 6 would be halved.

Table 8.5 Halving the female attrition rate from Grade 5 to Grade 6 by 2025 ('000s)

Total in Egypt	2012	2015	2025
Primary(ages 6-10)	7 884	8 472	9 328
Preparatory (ages 11-13)	3 441	3 703	4 505
Secondary (ages 14-16)	2 325	2 381	2 928
Total	13 650	14 556	16 762

Source: Team estimates based on CAPMAS population projections.

Compared with the baseline scenario, this demand assumption would result in an increase of 110 000 enrolments (1.2%) at the preparatory stage and 101 000 (3.5%) at the secondary stage (assuming no change to current preparatory to secondary transfer rates). This modest increase reflects the circumstance that inequality in education in Egypt is much more a problem of socio-economic disparity than of gender bias.

Demand assumption 4: Increase in participation rates by two percentage points by 2025

Table 8.6 projects future enrolments on the assumption that by 2025 rates of participation would increase by two percentage points over current rates, starting with a lift in the access rate at age 6 and flowing progressively year-on-year through the stages of schooling (assuming no change to current year-on-year transition rates).

Table 8.6 Increase in participation rates by 2 percentage points by 2025 ('000s)

Total in Egypt	2012	2015	2025
Primary (ages 6-10)	7 884	8 490	9 498
Preparatory (ages 11-13)	3 441	3 700	4 446
Secondary (ages 14-16)	2 325	2 338	2 888
Total	13 650	14 527	16 833

Source: Team estimates based on CAPMAS population projections.

Compared with the baseline scenario, this demand assumption would result in an increase of 170 000 (1.8%) enrolments in the primary stage, 51 000 (1.2%) at the preparatory stage and 7 000 (0.2%) at the secondary stage. These modest enrolment increases demonstrate the heavy wastage through year-on-year attrition.

Demand assumption 5: Increase in participation rates by five percentage points by 2025

Table 8.7 projects future enrolments on the assumption that by 2025 rates of participation would have increased by five percentage points over current rates, starting with a lift in the access rate at age 6 and flowing progressively year-on-year through the stages of schooling (assuming no change to current year-on-year transition rates).

Table 8.7 Increase in participation rates by 5 percentage points in 2025 ('000s)

Total in Egypt	2012	2015	2025
Primary (ages 6-10)	7 884	8 515	9 754
Preparatory (ages 11-13)	3 441	3 700	4 523
Secondary (ages 14-16)	2 325	2 338	2 917
Total	13 650	14 553	17 194

Source: Team estimates based on CAPMAS population projections.

Compared with the baseline scenario, this demand assumption would result in an increase of 426 000 enrolments (4.6%) in the primary stage, 128 000 (3%) at the preparatory stage, and 36 000 (1.3%) at the secondary stage.

Towards a plausible scenario based on a combination of demand assumptions

A reasonable working assumption is that participation rates will naturally rise over the decade between a range of 2 to 5 percentage points. That implies a total projected increment over the decade of some 400 000 enrolments across all stages, with the bulk (around 75%) of the impact in the primary stage.

The change factor on the demand side that would have the greatest impact on enrolment enlargement is reducing year-on-year attrition. Data deficiencies do not allow for accurate modelling of scenarios based on improved rates of student continuation. Nevertheless, inferences can be drawn from the data and projections presented above. As shown in Table 8.3, some 500 000 students who start primary school do not finish the preparatory stage. If this attrition over the compulsory years was to be halved, it would result in an additional 250 000 enrolments. A further 370 000 are lost in the transition from preparatory to secondary schooling. If that transition was to be improved even by 25 percentage points over a decade, a further 50 000 would be enrolled.

A plausible combination of demographic growth, participation rate increase, attrition rate reduction and higher rates of transition across stages, could yield an overall increase

in Egyptian school enrolments of 1 750 000 over 2015-2025, or 175 000 on average per annum at a compound rate of 1.2% a year.

Supply-side assumptions

The ways and means of absorbing growth in the student population also need to be taken into account. A number of possible scenarios for the supply of schooling to meet future demand may be considered. These involve combinations of structural options (e.g. between government and private schools), and procedural options affecting the intensity of teaching (e.g. student/teacher ratios), modes of teaching (e.g. shifts, use of online methods) and curriculum orientation (e.g. share of students assigned to technical tracks).

Assumptions about the structure of supply

The highest-cost option for government would be if there is no change in private schools' share of enrolment over the next decade. The team was advised that the government seeks to expand private school provision in Egypt from the current level of 10% of enrolments to 30% over five years (2012-17). On the enrolment base of 13.6 million students in 2010, 10% of enrolments amounts to 1.36 million private school students (Table 2.1 in Chapter 2 shows that in 2010/11, there were a total of 1.2 million enrolments in private primary, preparatory and general secondary schools, excluding technical secondary schools). To achieve the 30% target from the 2012 base would require private school enrolment growth of 3.2 million, or 640 000 per year on average. The 1.2 million private students in 2010/11 were taught by 72 360 teachers. If the current student/ teacher ratio of 16.6:1 was retained over the five-year period, an additional 192 770 teachers would be required. If the private school student-teacher ratio rose to the average for government schools (excluding technical secondary schools) of 22.3:1, the teacher supply requirement would be reduced by some 50 000 to 143 500.

Such a rapid growth trajectory appears unlikely to happen without considerable encouragement, including fast-tracking of approvals for private providers, both foreign and for-profit, to set up and operate. Such hasty efforts may well expose Egyptian education to serious quality risks.

There are various policy and regulatory issues to be addressed in the expansion of private provision, whether faith-based or for-profit. The policy issues include: foreign investment policy, including profit repatriation; land-use zoning; land ownership and commercialisation of land around educational establishments; recognition of foreign qualifications; eligibility of students in private schools to receive government support; eligibility of private providers to receive government funding for capital works; and the eligibility of government employees to work part-time in private schools. The regulatory matters include: setting threshold standards for provider registration; length of initial and subsequent licence to operate and associated re-accreditation arrangements; checking bona fides of proponents, owners and associates; assuring financial probity and viability; ensuring adequate governance arrangements; quality assurance, including teacher accreditation, fitness of teaching facilities and adequacy of learning materials; and consumer protection, including preventing false and misleading advertising, and provision for continuation of studies in the event of a private provider collapse.

To assist consideration of further options, the team explored the following trajectories for private expansion:

- I. Increasing the private share of enrolments in primary schooling from 10% in 2011 to 25% in 2025.
- II. Increasing the private share of enrolments in preparatory schooling from 7% in 2011 to 15% in 2025.
- III. Increasing the private share of enrolments in general secondary from 5% in 2011 to 20% in 2025.

Table 8.8 shows the scale of private sector student enrolments and student/teacher ratios in 2011, and the adjusted current private sector shares of provision against projected student enrolments in 2015. Assuming no changes to current rates of student participation and attrition, and no change to current student/teacher ratios, the table shows the scale of student enrolments and the teaching workforce in an enlarged private sector resulting from the application of assumptions 1), 2) and 3) above.

Table 8.8 Implications of scenarios for growth in the private sector share of enrolments, by stage of schooling, Egypt, 2012, 2015, 2025

Stage of schooling	2011 baseline	2015 adjusted baseline ²	2025 projection ²
<i>Primary</i>	private share = 10%		private share = 25%
All enrolments	7 884 000	8 472 000	9 328 000
Private enrolments	819 182	847 200	2 332 000
Private teachers	43 341	44 825	123 386
<i>Preparatory</i>	private share = 7%		private share = 15%
All enrolments	3 441 000	3 700 000	4 395 000
Private enrolments	248 241	259 000	659 250
Private teachers	20 103	21 060	53 598
<i>Secondary</i>	private share = 5%		private share = 20%
All enrolments	2 325 000	2 381 000	2 881 000
Private enrolments	117 069 ¹	119 050	576 200
Private teachers	8 915	9 088	43 985
<i>Total</i>	private share = 8.7%		private share = 21.5%
All enrolments	13 650 000	14 553 000	16 604 000
Private enrolments	1 184 492	1 225 250	3 567 450
Private teachers	72 359	74 973	220 969

Notes: 1. Excludes secondary technical schools. 2. Based on demographic growth only, and assumes no change to 2011 rates of participation and attrition, and student/teacher ratios (primary = 18.9; preparatory = 12.3; secondary = 13.1).

Source: CAPMAS, 2012 and team estimates.

Over the decade 2015-25, based on the assumptions used in Table 8.8, total private-sector enrolments would grow by 2.3 million enrolments at an average annual rate of 230 000, to comprise 21.5% of total school enrolments. The private-sector teaching workforce, based on current student/staff ratios would increase by 146 000 over the decade.

If participation and retention rates were to increase over the period, along the lines of the plausible scenarios discussed earlier, a 21.5% private-sector share would require an additional 181 500 enrolments over the decade, on top of the 2.3 million identified above.

This would bring total private-sector enrolments to around 2.5 million by 2025 – an increase of 200%.

Achieving growth of 2.5 million enrolments in private sector enrolments over ten years would be challenging but it would be much more probable, and less risky, than attempting to increase it by 3.2 million in merely five years.

In the light of this analysis, albeit highly generalised, the team considers that the targets for private-sector expansion require revision. The team sees the need for more detailed investigation of the risks and controls involved in expanding private-sector provision without diminishing educational quality.

Assumptions about intensity of teaching

Various policy options about class size and student teacher ratios can be adopted. The following are illustrative only:

- no change to current student teacher ratios
- falling primary student/teacher ratios (from 27:1 to 24:1 by 2025)
- falling preparatory student/teacher ratios (from 19:1 to 17:1 by 2025)
- falling general secondary student/teacher ratios (from 12:1 to 10:1 by 2025)
- rising primary student/teacher ratios (from 27:1 to 30:1 by 2025)
- rising preparatory student/teacher ratios (from 19:1 to 22:1 by 2025)
- rising general secondary student/teacher ratios (from 12:1 to 15:1 by 2025).

Reducing class size is not, on its own, a sufficient policy lever to improve the performance of education systems, and is a less efficient measure than increasing the quality of teaching. Findings from the OECD Programme for International Student Assessment (PISA) suggest that systems prioritising higher teacher quality over smaller classes tend to perform better, which confirms other research showing that raising teacher quality is a more effective measure to improve student outcomes (OECD, 2009).

The academic research evidence relating to the effect of class size on learning outcomes is somewhat mixed. Generally, the evidence provides little support for theories that reducing class size will by itself improve student learning. The most promising effects of class-size reductions occur for classes from kindergarten to Grade 3 (Robinson, 1990). It appears that very large class-size reductions, in the order of 7-10 fewer students per class, can have meaningful long-term effects on student achievement and perhaps on non-cognitive outcomes (Chingos and Whitehurst, 2011). The academic effects seem to be largest when introduced in the early grades, and for students from less advantaged family backgrounds. They may also be largest in classrooms of teachers who are less well prepared and effective in the classroom (Chingos and Whitehurst, 2011).

The experience and preparation of teachers is a critical factor in the success or failure of class size reduction programmes. Reducing class size will have little effect without enough classrooms and well-qualified teachers. In the Egyptian context, efforts to reduce class sizes would raise costs considerably. It would also put downward pressure on quality through the hiring of less well-qualified teachers, and exacerbate the problem of the low status of teachers.

Given the scale of the Egyptian schooling system and the substantial future increases in enrolments, the impact of increased expenditure to reduce class sizes would be marginal. If classes were reduced, say, from 27 to 24, there would be a rise in budget outlays on teacher salaries of at least 10%, yet there is nothing to suggest that teachers would notice the change and alter their classroom practices (Hanushek, 1996). That is, the costs would outweigh the benefits. By the same logic, the irreverent option presents itself that an increase in class sizes from 27 to 30 will not cause a crash in educational standards. Teachers will develop coping strategies, students may experience no real difference in opportunities for learning, and learning outcomes will not be adversely affected.

In view of 1) the lack of compelling evidence that class size reduction leads to direct educational gains; 2) that the costs of reducing classes would crowd out government expenditures on other areas, such as teacher and teaching quality improvement; 3) the problems outlined in Chapter 5 concerning teaching and teacher education quality; and 4) the associated risk of perpetuating rather than ameliorating the problem of low teacher status, the team considers that class size reduction ought not to be a priority for the government over the next decade.

Attending not just to quantity but also to quality

Inadequate and inconsistent educational quality has been blamed on inefficiencies within the education system including “the shortage of school buildings, the deteriorated conditions of schools, the multi-school shifts, the overcrowded classes, the shortage of qualified teachers, the maltreatment of pupils by teachers, the low quality of curricula and textbooks, the examination system that led to the burden of private tuition and private lessons, the reliance on non-ministerial textbooks, and the high repetition rates” (El Baradei, 2011, cited in Ibrahim, 2011). Such factors are more symptoms of the problem than its deeper causes.

One of the driving forces of Egypt’s educational quality problem has been the large scale of the task of absorbing growth in the school-age population. A focus on quantity has prevailed over attention to quality:

“Quantitative objectives seem to have taken precedence over the qualitative objectives of providing high quality services. As a result, educational deficiency remains a core factor in the vicious circle of high unemployment, low productivity, low wages and high poverty that is hurting the Egyptian people, reducing competitiveness and slowing down economic growth.” (Egyptian National Competitiveness Council, 2012)

The key challenge over the next decade, with the education system continuing to expand, will be to improve educational quality, particularly the effectiveness of schooling in producing learning outcomes which fit students to live, work and continue to learn in a new Egypt.

Setting priorities for investment in the factors that matter most

The need for modernisation of Egypt’s education system is clear. The case and urgency for change, coupled with resource constraints, creates an imperative for a cost-effective and focused reform agenda. The government is pressed to show results quickly, but at the same time needs to establish the foundations for long-term, sustainable growth. Under such circumstances, it becomes paramount to invest in the factors that

matter the most, while at the same time prioritising those that will produce early results to help build momentum behind the reform.

Priority setting in public policy involves determining which, in order, are the most important goals, and being clear about the overarching goal. Then it should be possible to identify the sub-goals that need to be met as preconditions for realising the ultimate goal. On that basis, a sequence of actions can be structured and options identified for saving resources and redirecting them from current activities and commitments.

A principles-based and evidence-backed approach

In considering questions of prioritisation, the team has adopted a principles-based and evidence-backed approach.

Principles-based policy

The three key principles guiding its analysis and proposals are policy coherence, educational balance and financial viability.

The principle of policy coherence

The principle of coherence applied to stated goals can apply along several dimensions: 1) vertical coherence of the various policies of a single ministry; 2) horizontal (intra-governmental) coherence across policies and programmes administered by different ministries of a single government; 3) inter-governmental coherence, such as between Egypt's central administration and the governorates; and 4) external coherence, for example with NGOs and government donors or international agencies. The main concern of this report is vertical coherence, the intent being that policy purposes are clear and the incentives for students, teachers and schools are consistent with them, through funding, programmatic initiatives and regulations. Additionally, and especially in relation to TVET, horizontal integration is critical; serious dysfunction and resource wastage will result if the technical training initiatives of different ministries are not aligned with the government's economic and labour policy objectives and the actual dynamics of labour markets. Additionally, donor support can be most effective when it is aligned with and reinforces the mainstream reform effort rather than distract from or worse, contradict it.

The principle of educational balance

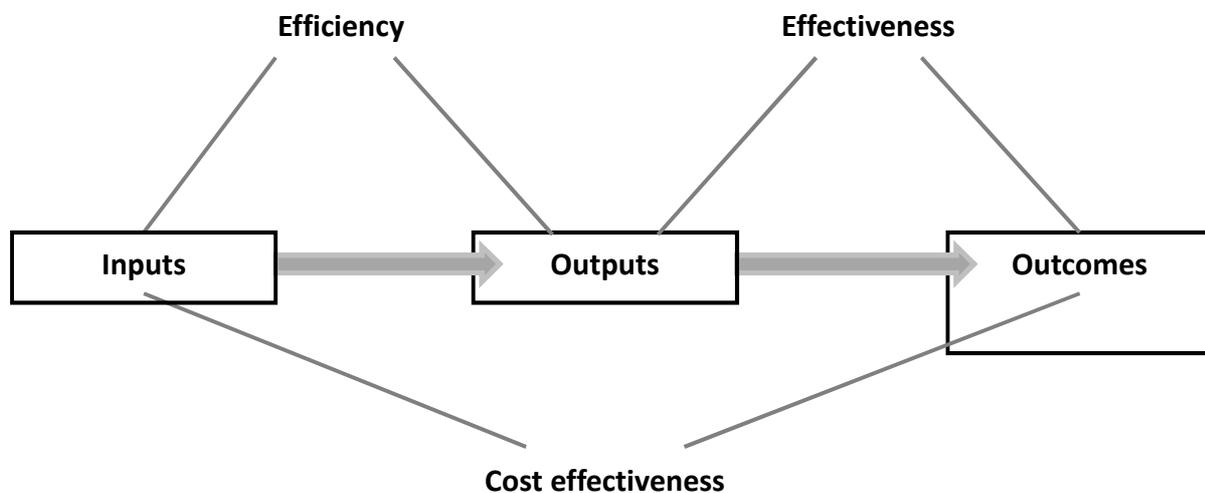
The principle of balance derives from the inherent tensions between individualistic and communitarian philosophies of education. It also addresses the spurious dichotomisation of mental and manual (or "heads versus hands") activities, with an implied superiority of the former over the latter. A balanced approach values both academic and practical learning, knowledge acquisition and skills formation. It recognises that domination of formal education by narrowly conceived forms of academic learning can undermine the appreciation and development of other capabilities of importance to the economy and citizens. The principle of balance applies also to the use of assessment for the varying purposes of supporting learning, certifying achievements and holding the system accountable. The balance principle also applies to the extent of change in orientations and procedures alongside continuity of purposes, core values and practices that are working well or well enough not to be disrupted.

The principle of financial viability

The principle of financial viability relates to the capacity of the nation to sustain the scale and quality of its educational provision over the long term. It involves considerations of cost-effectiveness at the educational system and provider levels. At the system level, cost-effectiveness involves the structure of provision, including government and non-governmental providers, and the concentration of enrolments according to student unit costs. At the provider level, cost-effectiveness results from efficiency in using resource inputs to achieve outputs and the effectiveness of achieving intended outcomes (see Figure 8.1).

The viability principle also encompasses productivity improvement, which involves increasing efficiency without diminishing quality. The three dimensions of productivity of interest to this report are: 1) learning productivity – reducing wastage by improving year-on-year student progression, and improving learning effectiveness as demonstrated in assessments of understandings and skills; 2) teaching productivity – increasing student throughput with fewer resources per student by applying best practice in teaching large classes and making innovative use of new technologies; and 3) administrative productivity – increasing the ratio of direct classroom teaching costs to non-teaching costs in the back-office administration and supervision layers at the school, district, governorate and central levels.

Figure 8.1 The elements of cost-effectiveness



Particularly in constrained fiscal circumstances, it is prudent to link financing to performance improvement, such as generally raised learning effectiveness and specific increments in learning outcomes of disadvantaged children.

In Australia, for instance, the schools funding model is being related to equity and quality improvements:

“Future funding arrangements and governance structures for schooling should aim for sustained improvements in the educational outcomes of disadvantaged

students, as part of achieving better outcomes for all students. To achieve this, additional funding provided to schools to overcome disadvantage should be invested in strategies that:

- improve practices for teaching disadvantaged students;
- strengthen leadership to drive school improvement;
- focus on early intervention for students at risk of under-performance;
- are flexibly implemented to address local needs;
- encourage parent and community engagement;
- are based on robust data and evidence that can inform decisions about educational effectiveness and student outcome.” (Gonski et al., 2011)

By way of illustration, Australia has adopted a set of funding principles which reflect the concurrent operation of government and non-government schools, with government funding directed on the basis of schools student needs and schools’ non-government revenue capacities (see Box 8.2).

Box 8.2 Principles for school funding in Australia

- Public funding should be allocated in a fair, logical and practical way so that schools with similar characteristics and student populations have similar access to public funding, taking into account, in the non-government sector, the capacity for a contribution from private resources.
- Funding should be allocated to schools and students on the basis of need, in particular to ensure that differences in educational outcomes are not the result of differences in wealth, income, power or possessions.
- Funding from all sources should be sufficient to ensure that all Australian students have the opportunity to receive a high standard of schooling.
- Funding should support a diverse range of school provision and allow choice by parents alongside their responsibility (in most cases) to make a more substantial private contribution when electing to enrol a child in a non-government school.
- Funding arrangements should complement and help to drive broader school reform so that the educational outcomes of all students improve over time, particularly the outcomes of students from disadvantaged backgrounds.
- Funding arrangements should embody the partnership that has developed between the Australian Governments and the non-government school sector in funding and delivering schooling in Australia.
- Funding arrangements should be more transparent.
- Public funding should provide demonstrable value for money and recipients should be accountable for the proper use of public funds.

Source : Gonski, D. et al. (2011), Review of Funding for Schooling: Final Report, Australian Government. Canberra.

Evidence-backed policy

“The best hope for significant and lasting change is the implementation of policies that favour the use of programmes with strong evidence of effectiveness, and the development of programmes of research and development capable of designing, rigorously evaluating and disseminating proven programmes. Once this evidence-based reform dynamic takes hold, educational programmes and material will constantly be improved and student outcomes will improve, just as progressive change in medicine, agriculture and technology constantly makes old solutions obsolete and improves outcomes for all society.” (Slavin et al., 2006).

Education policy decisions should be informed, as far as possible, by available information and analysis at the planning, monitoring and evaluative stages of policy development and implementation (see Box 8.3).

Box 8.3 Realms of evidence for policy planning, monitoring and evaluation

Tools for planning

Benchmarking: benchmarking indicators can help the identification of feasible targets for performance indicators, based on analysis/comparison of existing experiences in that particular performance area. 1) Check that targets are reasonable (benchmarking); 2) Identify who are the good and poor performers and analyse what the good and poor performers do; 3) Identify potential high leverage intervention.

Poverty analysis: poverty analysis is one of the principle steps in formulating a poverty reduction strategy. Is it designed to assess the extent and causes of poverty in a given country and to propose a strategy to ameliorate its effects.

Poverty and social impact analysis: the analysis of the distributional impact of policy reforms on the welfare of different stakeholder groups, with a particular focus on the poor and vulnerable (e.g. micro-simulations).

Tools for monitoring

Assessments, logical frameworks and system dynamics: these tools help to clarify the objectives of any project, programme or policy. They aid in the identification of the expected causal links – the “programme logic” – in the following results chain: inputs, processes, outputs (including coverage or “reach” across beneficiary groups), outcomes and impact. They lead to the identification of performance indicators at each stage in this chain, as well as risks which might impede the attainment of the objectives.

Tools for evaluation

Indicator evaluations: indicator evaluations are primarily a tool to use after implementation to evaluate the quality of existing performance indicators, according to a specific criteria CREAM (clear, relevant, economic, adequate and monitorable) or SMART (specific, measurable, achievable and attributable, relevant, and time-bound).

Executive evaluations: executive evaluations aim to provide a “snapshot” of a programme’s performance in a number of key areas such design, strategic planning, operation and results.

Process evaluations: process evaluations aim to evaluate whether a programme’s operational mechanisms support the achievement of the objectives of the programme. A process evaluation is most often completed in the middle of a programme implementation as part of a longer-term monitoring process.

Impact evaluations (governance and institutional reforms): impact evaluations assess the specific outcomes attributable to a particular intervention or programme. They do so by comparing outcomes where the intervention is applied against outcomes where the intervention does not exist.

Source: World Bank (2010), “Tools for evidence-based policy making”, World Bank website, Washington, DC, <http://go.worldbank.org/Q2SRQY5YX0>.

At a macro level, prioritisation requires an assessment of the relative standing of an education system's capacity and performance, relative to its comparator countries by stage of development and relative to world good practice. At a micro level, prioritisation calls for comparable information about strengths, weaknesses and gaps, and change in performance by district, school, and student characteristics. School principals and classroom teachers, too, are more able to adjust educational interventions to address learner needs when they are well informed.

The team was limited by the paucity of comparable information about learning outcomes in Egypt. In moving forward, it will be essential for Egypt to build a reliable data base for monitoring educational progress at all levels against stated goals.

Prioritising policy interventions

It will simply not be feasible for Egypt to make substantial reforms in all problem areas all at once, given 1) that the scale of Egyptian education is already large and will continue increasing over the next couple of decades, as explored above; 2) the capacity of Egypt's budget will be tightly constrained over the next decade; and 3) the lack of previous success in tackling the fundamental problems within the current system. The question arises as to which areas should be given priority at this time?

A matrix of options is available. On the horizontal axis, they range from classroom practice through school organisation to system structure; on the vertical axis, they rise from pre-school and primary to senior secondary and post-secondary stages, including teacher education; and on the diagonal axis, they cross from centralised to decentralised levels of governance.

In common with many areas of complex social policy, there is scant and ambiguous evidence to guide selection among the available options for system-wide school reform. However, there have been several efforts to draw inferences from international experiences with large-scale school reform initiatives. Interestingly, there are some important common themes emerging.

One set of views derives from experiences in Ontario, Canada, where the clear focus of reform was on raising student learning outcomes in a sustainable way (Levin, 2008). The lesson from the Ontario experience is that policy of itself does not guarantee change; it's what goes on in classrooms that counts. System structure and governance changes, while elements of a comprehensive reform strategy, achieve relatively low results for the amount of time and effort invested. Curriculum reform yields much lower payoff than a focus on teaching and learning practices. Testing and performance accountability regimens, whether shaming schools with poor performance or rewarding teachers for superior results, are not demonstrably successful in improving student learning, especially when the goals of learning are broadly rather than narrowly defined. What matters most are: a clear focus on student learning; a small number of concentrated goals; everyone knowing the goals; and support in the form of resources, staffing and professional development (Levin, 2008).

Another perspective comes from South Africa (Centre for Development and Enterprise, 2009), where the problem of underperformance in education is not one of lack of access or funding but rather of a poor return on a substantial investment. The key lessons drawn are that the central objective of reform must be to improve learning outcomes, the quality of an education system is mainly determined by the quality of its teachers, every child must have the opportunity to succeed and strong school leaders

make a real difference to the learning culture and teacher motivation. Additionally, popular interventions such as spending more money, reducing class sizes and giving schools greater autonomy have not been consistently successful as means for improving student learning outcomes.

A further set of views arises from a structured study of 20 school systems across a range of developed and developing economies (Mourshed et al., 2010). The authors concluded that “a system can make significant gains from wherever it starts – and these gains can be achieved in six years or less.” Importantly, the authors identify similar clusters of interventions, even for countries with different cultures, history, geography or politics, that relate to each stage of educational performance, such as moving from poor to fair, fair to good, good to great or great to excellent:

“In the early days, outcomes improvement is all about stabilising the system, reducing variance between classrooms and schools, and ensuring basic standards are met. At this stage of the journey, the reforms are almost always driven from the centre. Later, as the system improves, the engine for improvement shifts to instructional practices. This, by its very nature, has much less to do with the centre and is primarily driven by the teachers and the schools themselves: it is all about turning schools into learning organisations.” (Mourshed et al., 2010: 112)

Singapore provides an example of how a system shifts in emphasis as it goes through the various stages of the entire improvement journey, from poor to great, as it has over the past 40 years. As its performance has risen, central guidance on teaching and learning has decreased. Singapore system leaders describe their system as having gone through three phases: “survival-driven” (1959-78), “efficiency-driven” (1979-96), and “ability-driven” (1997-present).

Where does Egypt lie along the poor-to-excellent spectrum of educational capacity and performance? Arguably, it has moved from poor, particularly over the last decade, and is broadly shifting from fair to good, albeit with greater deficiencies in some regions and small pockets of great performance elsewhere. If that is so, then it should be appropriate to shift the approach to reform from centrally-scripted instructional practice and strong external supervision, characteristic of the poor-to-fair stage, to one involving greater attention to pedagogy, data gathering for monitoring student learning alongside organisational and financial support, and centrally-driven cascaded teacher training. For Egypt to push forward it should not only learn from others at a similar stage of development but also have a view to stepping up to the next stage. For systems shifting from good to great, the main focus is the professionalisation of teaching, including greater teacher flexibility in professional development.

From these various perspectives, it is reasonable to infer that Egypt would be wise to focus on student learning outcomes, both those directed towards enabling effective learning through the schooling system and those related to readying school leavers for diverse employment destinations. The question arises as to which schooling sub-sectors should be given priority at this time? Should interventions be focused at the base or at the peak, or some combination of both?

On the basis of demographic trends, there is a window of opportunity over the next 5-10 years to fix the secondary stage of Egyptian schooling, before the current pre-school age cohort bulge starts transitioning from the preparatory stage. This imperative becomes even greater as attrition rates are reduced at the primary and preparatory stages. On the

basis of labour market requirements, there is an urgent need to make learning at the stages prior to labour market entry – both secondary and tertiary levels – more relevant and effective in order to raise the quality of labour supply. The structural and cultural factors propping up the *status quo* are the *thanawiya amma* examination and its backward links to prior exams with their impact on curriculum narrowing, and its forward links to university admissions that are determined on inadequate grounds. Therefore, in order to bring the greatest leverage to durable system-wide reform, priority must be given to the modernisation of secondary education. In considering the prospects for successful reform implementation, it is important to note where the greatest external support for fundamental reform may be harnessed, to offset anticipated resistance by some teacher voices and other interests. In Egypt, there is the potential for employers' support for change at the secondary and tertiary levels linked to improving the quality of labour supply, and parental support for changes that could reduce pressures on students to cram for the high-stakes final exam and the cost of private lessons. Reform efforts in other stages of education are less likely to muster as much external support.

In giving priority to modernising secondary education, including TVET, consideration needs to be given to the appropriate agenda for the other stages of schooling, which will continue to come under their own pressures. Prioritising secondary education and training does not mean neglecting other educational stages. Rather, it is a matter of determining the order of benefits to derive from relative efforts, financial and human.

Early childhood education

A good start in life makes all the difference. Investment in early childhood education (ECE) generates high payoffs according to international research (Heckman, 2009). ECE is most effective when linked with health services (including nutrition), diagnostics to detect any learning problems, emotional support and family involvement – rather than simply providing spaces and teachers. A dollar spent on pre-school programmes generates a higher return in investment than the same spending on schooling (Heckman and Masterov, 2007). OECD work on the social outcomes of learning shows that high-quality early childhood education and care brings about a range of social benefits to individuals. These include better health, reduced likelihood of individuals engaging in risky behaviours and stronger “civic and social engagement” (OECD, 2011).

Any proposed programme should respect the primacy of the family. Policy proposals should be culturally sensitive and recognise the diversity of values in society. Effective strategies would engage the private sector to mobilise resources and produce a menu of programmes from which parents can choose (Heckman, 2009).

Currently some 30% of the age cohort aged 4-5 years is participating in ECE in Egypt. Expansion of ECE participation will require careful consideration of 1) the time needed to harness all the resources required; 2) the equity impacts on those left behind (given universal basic education is not yet achieved); and 3) the need to target investment on the most needy families (given others have more capacity to participate voluntarily).

Consideration might be given to a model of ECE provision along the lines of community schools, which are closer to the communities and often run through partnerships with NGOs or the private sector. This approach could allow for the evolution of a mixed system, where provision is free for the poorest families while those who can afford to do so make a greater financial contribution to costs.

Primary education

The core challenges for the primary stage are accommodating growth in access through capital works and increasing the supply of well-trained teachers. Merely providing more of the same in primary education, however, will not serve Egypt well for the future. It is imperative to ensure that students build adequate foundations for further learning. In view of the limits on the provision of human, physical and financial resources, the team considers that priority in primary education should be given to raising students' core literacy, numeracy and generic cognitive competencies. This requires less attention to curriculum content coverage and more attention to interactive pedagogy and active student learning of generic skills.

During the team's school visits, teachers and parents volunteered enthusiastic comments about the success of the new literacy programme. Its continuation and expansion will be important.

Teachers and parents also complained to the team about the cluttered curriculum, especially in mathematics, which has left teachers with an impossible burden of content coverage and left students with insufficient time to develop understanding, competence and confidence. Their learning is superficial rather than deep and students are not developing problem-solving skills. A serious review of the primary mathematics curriculum is warranted. Such a curriculum review should be conducted in parallel with a review of effective mathematics teaching, with a view to mounting a campaign for better mathematics learning in primary schools.

Preparatory education

The future orientation of the preparatory stage ought to be guided by the answers to the question "Preparatory for what?" The cultural challenge over the next decade will be to achieve parity of esteem for all student destinations, whether they be direct employment, apprenticeship, technical college or university. Making the tracking into and out of preparatory schooling less rigid should enable students to learn a common core of academic, artistic and practical subjects, and leave their options open as they mature rather than prematurely closed off. As reform of the secondary stage progresses, the tight coupling of the preparatory curriculum to exams will need to be loosened, as the Grade 9 exam itself is broadened, as proposed in Chapter 6.

Secondary education

The need to align secondary education more closely with labour market conditions, and improve employment and life prospects for young people, is giving rise to structural change in education systems in several OECD member countries. For those countries with streamed schooling systems, efforts are being made to provide greater flexibility for students to move between vocational and general education pathways (see Box 8.4).

Box 8.4 The difficult choices for upper secondary students

Students' choices at this education level can have long-term consequences; that is why it is important that upper secondary pathways are relevant to students and match the requirements of tertiary education institutions and the labour market. Students who leave the education system without an upper secondary education face severe difficulties in entering and remaining in the labour force, lower wages, greater risk of poverty, and greater chances of becoming an economic and social burden to society (Le Metais, 2003; Levin, 2012; Lyche, 2010).

Upper secondary education, whether academic/general or vocational, should be designed to provide students with the skills and knowledge that will allow them to enter tertiary education and/or the labour market. Making systems more flexible to accommodate movement between vocational and general pathways meets the needs of students who might not otherwise be motivated to pursue upper secondary education. A number of OECD countries offer students the opportunity to change pathways during their education:

- Students in The Netherlands are tracked into general or vocational pathways when entering lower secondary education, but the structure of upper secondary education allows them to change tracks so that students can pursue programmes leading to tertiary education and/or the labour market.
- The upper secondary education system in Finland gives students the choice and flexibility to transfer between academic and VET programmes, which are considered to be the students' right and, in most cases, students take courses in other tracks to meet their study plans (Sahlberg, 2006).
- In Iceland, students can easily switch between schools and programmes because of the credit-unit system that makes transferring credits easy (Blondal et al., 2011).
- In Germany and France, students in VET might not be able to change pathways in upper secondary school, but they do have the option of earning a diploma to continue on to higher education.

Source: OECD (2013), *Education At A Glance 2013: OECD Indicators*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/eag-2013-en>.

The secondary education modernisation agenda outlined in Egypt's National Education Strategic Plan 2007-2012 is now even more relevant to Egypt's economic transformation imperatives than it was when it was produced. It involved providing more students with a general education foundation and enabling greater choice between vocational and general tracks. The team considers that it is best to persist with that part of the plan rather than revisit and alter it fundamentally, and waste time and goodwill in so doing. However, as the plan paid only partial attention to TVET within the secondary stage, more detailed consideration of TVET is warranted.

Technical and vocational education and training

In view of the low external and internal efficiency often attributed to the Egyptian TVET system (ETF, 2011b), it may be argued that the remarkable growth of technical education in Egypt in the last decades had less to do with rational planning to provide young people with work-relevant skills and more to do with diverting students away from higher education:

“For forty years, industrial, agricultural and commercial schools were being portrayed as the embodiment of modern Egypt's embracing of technological progress, when they were actually being used as the dam to regulate the stream of university aspiring secondary education students.” (Antoninis, 2000)

The TVET pathway is frequently used as a bypass or “back door” route to higher education. Access to university is also the preference of a large number of TVET students, although only the top-performing technical students realise their goals. This pattern and motive of usage prevents TVET from fulfilling its core function of educating and training students for jobs needed by the economy.

The TVET system’s inability to contribute effectively to Egypt’s economic development also has to do with another historical legacy. As the traditional mission of the education system has been to assist the recruitment to public-sector jobs, the needs of the emerging private sector have been largely neglected by public TVET over the last thirty years. While individual initiatives have begun to address this major gap, there is no comprehensive understanding of employers’ participation due to outdated assumptions about how education and production should be linked. Nor has a framework to tackle this key issue of TVET been established. Moreover, if one visits average vocational or technical schools, some of the equipment for practical training may be 30-40 years old and more. The team was advised that more modern facilities and equipment are provided in a few schools, such as centres of excellence or those supported by some donors.

It is no surprise that TVET has been under increasing pressure on various fronts to deliver results. Future policies aiming at raising the status and capacity of TVET are well advised to take into account several determining factors. The interface between higher education and TVET and the “blindness” of TVET towards the private sector mentioned above are only two pieces of the wider puzzle. Socio-cultural patterns, including expectations for upward mobility and social status, also have an influence, with a disproportionate emphasis on gaining status credentials in a “certificate-bound society” (Badawi, 2006 like Egypt. Adding to these challenges is the inappropriate system for selecting and allocating students to vocational and technical streams and subject specialisations, based solely on marks scored in the exam-driven schooling system. Finally, TVET’s capacity to reshape itself is hampered by a rigid governance structure which tends to be highly fragmented and input-oriented instead of integrated and output-oriented. For all these reasons an overhaul of the TVET system has not been on the policy agenda.

To move forward on a coherent and sustainable basis a number of key dimensions of the TVET system will need to be properly addressed. A few of these are outlined below.

Building a framework for employer participation

In order to make the shift from supply- to demand-driven TVET in Egypt it will be necessary to have much stronger employer participation. At present there is no national body for private-sector employers to participate in decision making about TVET in Egypt (ETF, 2011a, 2011b, 2011c). Over the last decade, increasing interest from the business sector and a push by donor initiatives has led to some steps being taken to involve employers. These have left behind a number of often isolated and small-scale instances of employer involvement, several of which continue to be worthwhile. If properly built upon, a number of these innovations in TVET (e.g. dual education systems, Enterprise TVET Partnerships, and other models of work-based learning) have potential to be expanded on a more systemic basis. As a first step, establishing a well-structured business-TVET/education dialogue could lead to a future framework for employer participation. An effective framework for institutionalised dialogue will need to cover the full range of major representative bodies from the business sector, including investor

associations, sector federations, and local and international chambers as well as the business community from the public sector.

A recent report on workforce development in Egypt (World Bank, 2013), assessed the linkage between the education and training systems and the labour market in Egypt as still weak. There had been no improvement in the mismatch between the type and level of skills needed by the workforce and those being supplied by the education and training system. For example, while agriculture employs 28% of the workforce, agriculture-related technical secondary education schools represents only 9% of all technical secondary schools. In contrast, manufacturing employs 12% of workforce but 47% of technical secondary schools were industrial-related ones.

Inadequate TVET provision has resulted in a shortage of skilled workers thereby creating bottlenecks in the more dynamic sectors. Major enterprises with capital-intensive investments have decided to reduce their labour utilisation because of shortages of middle-level skills (Ministry of Higher Education, 2011; World Bank, 2013).

Skills shortages and skills mismatches put pressure on both employers and policy makers to find effective responses through better co-operation. The participation of employers in TVET needs to address all relevant dimensions, from TVET delivery (to provide training and opportunities for practical- and work-based learning), financing (cost-sharing to alleviate pressure on public funding of TVET, updated equipment), planning (to better identify labour market needs) and steering of TVET (from strategic management to implementation issues related to qualifications development, curriculum and assessment, teacher and trainer development) at national and local levels. Given the limited capacities of the business sector in Egypt, priority areas will have to be defined where involvement in TVET would be most beneficial. A framework for employer participation will require well-targeted and context-relevant incentives for companies alongside appropriate legislation.

Moving from fragmented to integrated governance

Numerous reports and international analyses in the past have pointed to the phenomenon of a nearly “ungovernable” TVET sector caused by its excessive fragmentation in both policy making and provision. The involvement of more than 20 ministries and institutions in TVET coupled with competition for leadership among the key ministries (Ministry of Education, Ministry of Industry, Trade and Small and Medium-Sized Enterprises; and Ministry of Manpower and Migration) has led to a system of “little kingdoms”, “silo-ism” and “institutional power-games” which has paralysed TVET reform for too long. In recent years awareness has grown among policy makers that such a fragmented approach has to be replaced by an integrated model with clear leadership, co-ordination and monitoring of TVET development. While some stakeholders viewed the empowerment of a single ministry (Education or Trade and Industry) as a reasonable remedy for this problem, others favoured the establishment of a new institution. The previous Egyptian government proposed a single TVET authority with responsibility for policy development and co-ordination functions that would unite all TVET delivery under one umbrella. The new government opted for a different approach, by establishing a separate Ministry for Technical Education and by introducing a system of cascading councils. The former Supreme Council for Human Resource Development (SCHR), created in 2000, has been revamped and supervises two Executive Councils, one for TVET and one for Workforce Skills Development.

However, the governance of TVET needs substantial reform in other dimensions as well. Apart from policy making and management of the TVET system, institutional settings need to be reconsidered with regard to curriculum and qualification development, standards setting, certification, assessment, and evaluation of the system. Many of these functions may move to the new Ministry for Technical Education or new structures to be established. Annex A describes the new organisational structure for TVET.

Rethinking TVET and making it more attractive

Making TVET more attractive is a complex and long-lasting challenge. Many countries face the same or similar problem of low status and quality, not just Egypt. Changing the status of TVET from a second-best option into which low performers are tracked, to a situation of “parity of esteem” with general education, where students opt for TVET voluntarily is both a daunting and mammoth task. Equally it is not easy to change the perception of TVET as a low-quality track and second-chance or back-door access route to university, and to replace it with the view of TVET as a valuable and quality path to decent employment and lifelong learning for all. A major rethinking of TVET in various dimensions is required. Some of these areas which need rethinking are briefly outlined below. Properly addressed, it could raise the attractiveness of TVET for learners and parents as well as influence the perception of employers and society at large.

Interface between education and training

The radical separation between general education, technical education and vocational training prevents cross-fertilisation between these areas as well as preventing the creation of an open education architecture and the development of a common identity for TVET. The transfer of technical education to a separate ministry may provide an opportunity for TVET development, but at the same time risks a further rift between education and training at a time when a fundamental rethinking of the relationship between general and technical secondary education is needed. In particular the assumptions on how education and training are to be linked with production and services need to be revisited. A key question is if technical and general secondary education should have a better common base (i.e. Grade 10) or even converge (i.e. including more general education elements into technical education and vocational ones into general education). Addressing this issue seriously would likely impact on the attractiveness of TVET.

Certification and qualifications

Addressing the deeply rooted pattern of societal aspirations towards higher education and related “hype” for certificates, as well as tackling the perception of TVET as offering only limited social possibilities and low-skilled jobs will be key to change, although the overall goal may be achieved only in the long term, if at all. At the same time, more immediate approaches aiming at upgrading TVET certificates could work. Issuing double certificates (i.e. one from the school or TVET provider, the other from the company or business association in which practical experience or work-based learning took place) would enhance the labour market value of the classical TVET certificate. A few examples already exist in Egypt (e.g. Arab Contractors). Another way to raise the attractiveness of TVET could be to associate, where appropriate, more prestigious professional titles with TVET degrees or certain occupations, for example to be attributed after graduation or a few years of work experience. New qualifications, such as solar energy technician, which are fashionable and at the same time meet emerging labour market needs, could be introduced at both secondary and post-secondary levels. Various reports

(ETF, 2011b, 2011c) suggest improving progression (very few possibilities exist to obtain recognised qualifications outside formal education), access (there is no recognition of previous learning through experience) and transparency (a unified or coherent system of qualifications based on learning outcomes is lacking). Establishing a national qualification framework, which gives TVET a proper place, could further contribute to raise its status.

Quality, quantity or both?

Quality in TVET very much depends on teachers, trainers, equipment and learning opportunities in the workplace, defined by national standards for quality and assessment. Focus groups held with employers and other TVET stakeholders criticise the current fluid and unregulated approach and want to see a credible seal of quality for TVET graduates at every stage, including for short-term courses (El-Ashmawi, 2011). At present, the number of technical schools that have applied for accreditation with the National Agency for Quality Assurance and Accreditation of Education (NAQAEE) is minimal, and other TVET sectors are not within the mandate of the accreditation agency.

There is also a trade-off between quality and quantity. It is evident that the expansion of technical education has come at the expense of quality in the past. New propositions, such as the ambition to establish a certain number of high-quality technical schools and training centres (the “100 schools model” or “Centres of Excellence” ideas) would raise quality of TVET on a limited scale, but quality in mainstream TVET may not necessarily improve and may even deteriorate as a consequence. In addition, in a context of limited resources, these may give rise to equity concerns. Any new strategy therefore needs to reflect not only on the dimension of quality standards and assessment procedures, but also on the quantity dimension by setting clear goals and targets as to the future magnitude of TVET. This may include re-sizing certain TVET streams.

The particular need for more effective TVET planning

A fundamental shift in the approach towards strategic planning is another prerequisite for a coherent and sustainable approach to move TVET in Egypt forward. The long array of structural problems coupled with weak strategic planning has left several dilemmas which need to be addressed in order to achieve progress.

Ad hoc versus strategic

Without an agreed and approved TVET vision, strategy and realistic action plan, reform of TVET will continue to be mainly ad hoc and consequently rather oriented to the short term. Over the years, various strategies or master plans have been produced by different bodies which in the end were neither endorsed nor implemented. The latest comprehensive strategy document – Time for Change: TVET Reform Strategy 2012-2017 (TVET Reform Programme, 2012) – was produced by the EU TVET Programme. Its status remains unclear.

The status of TVET in the new National Strategic Plan for Pre-University Education 2014-2030 (NSP) is also unclear as a draft was not available at the time of the team’s visit. The indications are that the new plan pays some attention to technical education and renews the commitment to reform. However, it mostly remains at a general level and further elaboration will be needed to implement the strategic direction. In addition, it is not clear how these plans relate to the draft strategy developed by the EU TVET Programme. Policy makers from different ministries and authorities will remain

challenged by the need for effective co-operation and co-ordination, not least coping with the different organisational cultures of the various TVET stakeholders. If well implemented, the new Ministry for Technical Education, in combination with the new system of councils, may help to overcome the rivalry for strategic leadership between different ministries and be able to turn its energies towards a co-operative spirit and action.

Piecemeal versus systemic reform

A piecemeal approach has led to a “mushrooming” of pilots and projects. On the one hand this allowed for testing and innovation, but on the other it left behind isolated initiatives, not even connected to each other, instead of integrated parts of the system. Due to the lack of any systemic perspective and cross-sector responsibility and no culture of evaluation, opportunities to scale up and mainstream these pilots were missed. The government’s decision to develop a separate TVET strategy may repeat the same mistakes, meaning the TVET strategies are not well integrated with the pre-university strategic framework.

Donor- versus government-driven

Relationships with donors have been largely characterised by an open-policy approach, with the Government of Egypt accepting all ideas and funds coming from abroad. The relationship needs to change from a “let all flowers bloom” policy towards a more strategic and co-ordinated approach. Donor-driven approaches have to be replaced by a government-driven donor policy, with stronger government support for home-grown developments. Donors need also to better co-ordinate among themselves to avoid proliferation of fragmented and overlapping initiatives.

- The latest comprehensive strategy document – Time for Change: TVET Reform Strategy 2012-2017 (TVET Reform Programme, 2012) – was produced by the EU TVET Programme. Its status remains unclear.
- The status of TVET in the new National Strategic Plan for Pre-University Education 2014-2030 (NSP) is also unclear as a draft was not available at the time of the team’s visit. The indications are that the new plan pays some attention to technical education and renews the commitment to reform. However, it mostly remains at a general level and further elaboration will be needed to implement the strategic direction. In addition, it is not clear how these plans relate to the draft strategy developed by the EU TVET Programme. Policy makers from different ministries and authorities will remain challenged by the need for effective co-operation and co-ordination, not least coping with the different organisational cultures of the various TVET stakeholders. If well implemented, the new Ministry for Technical Education, in combination with the new system of councils, may help to overcome the rivalry for strategic leadership between different ministries and be able to turn its energies towards a co-operative spirit and action.
- Clear performance targets, monitoring and evaluation mechanisms must be set up and agreed upon and preferably published so that all concerned know what is expected from the TVET policymakers and providers.
- What funding will be made available, where will it come from, who will hold the budget and for what period will it be available?

- How will links be made to general education, e.g. integrating the core subjects in general and technical secondary streams?
- How will the main crosscutting issues of curricula, standards, evaluation, assessment, certification, quality assurance and teacher/trainer training be addressed to create a comprehensive, integrated system? How will links be made to those bodies currently responsible for these issues and ensure that they co-ordinate effectively? Will they be the same or new bodies?
- TVET should be promoted as a route to worthwhile employment with opportunity for advancement but it should not be promoted as a “back door” entry into higher education.
- The development of a comprehensive labour market information (LMI) system, involving employers in a systematic, institutionalised way, must be a precursor to TVET reform. LMI must inform the nature and quantity of the TVET required to ensure it is demand led and cost-effective.
- Given how fragmented TVET providers are, the team recommends that a change management programme be undertaken to ensure that the vision and mission of the new entity is understood, accepted and supported by all involved, particularly all staff in the large number of Ministries, agencies and institutions involved.

TVET promotion campaign

A TVET promotion campaign could be an effective instrument to influence societal perceptions and counteract typical stereotypes of TVET and its related occupations (e.g. poor learning environment, dead-end route, no prestige, manual and dirty work, only blue-collar and not white-collar jobs, low income, long working hours, no job security). If well implemented, targeted at different groups and running over several years, a sustained campaign could create a positive image of TVET and change mindsets in the long- or even short run. An example is the “Media-Based Employment Initiative”, which successfully addressed the reluctance of young people to be employed as production workers and the related lack of semi-skilled and skilled workers. The Egyptian Ministry of Finance sponsored a massive media campaign during Ramadan in 2007 to create a positive image for industrial employment. This was complemented by an offer from the Industrial Training Council (ITC) of pre-employment training to match vacancies in private-sector companies who had committed to employ young people who completed the ITC’s training. Out of a total number of more than 1 million enquiries, around 10% went for interviews and most became employed (UNDP, 2010).

Technical education stands out as a prime victim of the sustained growth in university enrolments with which by default it must compete on an unequal basis and with lack of resources. TVET has also to cope with the traditional class-based view of education, which divides education into two types: “higher quality” education for the elites, and “lower quality” education for the ordinary people (Ministry of Education and CCIMD, 2011). Future policies aiming at raising the status and capacity of TVET need to address more seriously and with greater determination the long array of inherited problems noted above.

Considering the magnitude of tasks ahead and the size of the sector in Egypt, considerable investment will be required to achieve tangible results and a breakthrough in TVET reform. Even if potential efficiency gains are taken into account, substantial

change will not be possible without additional resources. Much will depend on the position of TVET in the wider education and training reform and it is to be hoped that current and successive governments will also set the right priorities in terms of budgeting. It is not promising that current TVET financial needs do not seem to be known. The latest TVET strategy document states “there is insufficient data about TVET unit costs, future demand and aggregate costs of upgrading institutions to currently make detailed budget proposals”. The only consensus is that “TVET reform will require a substantial increase in financial resources over the next five years” (TVET Reform Programme, 2012).

Key to success will be also the capacity of TVET administration and institutions as well as the capacity of the business community and companies to drive and sustain the reform.

The quality of available data on labour market needs is poor and any skill needs analysis is limited to ad hoc donor initiatives and further complicated by the presence of a large informal sector. The private sector needs to enhance its capacity to better formulate skill needs and public policy has to create an effective co-operation mechanism, including an incentives framework, to reach a critical mass of private-sector participation. So far, a number of key challenges continue to hinder education and business co-operation in Egypt (ETF, 2011c). Among these, the lack of formal institutional setting for dialogue and co-operation and related action plans. They also include the disconnect between different pilot projects and the lack of any mechanisms for scaling up as well as making the necessary policy decisions to choose the models that could be generalised throughout the system.

Harnessing donor initiatives in education and training

The effectiveness of Egypt’s reform effort, and the utility of donor interventions are both likely to be increased when their respective actions and purposes are aligned (see Box 8.5).

Box 8.5 The importance of donor co-ordination

“The lack of donor co-ordination has two potentially negative consequences. First, the assistance offered may not always be directly related to the priority needs of the system and/or institutions targeted. Second, the various programmes and projects supported by the donors may not be fully consistent among themselves, which could lead to dysfunctions in the system. To mitigate this risk, the national authorities in charge of education need to play a proactive role in orchestrating donor co-ordination. This is essential to ensure that the various donor programmes and projects fit coherently in the government’s own list of development priorities. Having a well-crafted vision, a credible strategic plan and a sustainable funding strategy will help significantly in this respect.”

Source: Salmi, J. (2012), *Lessons from International Experience: Promoting Tertiary Education Development and Reform*, Policy Note prepared for AusAID, Education Resource Facility, Canberra

Donor interest and donor landscape

The education sector in Egypt has attracted large amounts of foreign development assistance due to Egypt’s strategic importance and geopolitical position, its large population, and its cultural influence on neighbouring countries. In past decades the

country has topped lists of foreign aid recipients, in particular from the US Agency for International Development (USAID) and the European Union (EU). Considerable parts of the assistance budgets of these and other large donors to Egypt, such as the World Bank, Germany, France and Canada, have been allocated to education. Some analysts explain this huge inflow by interests of donors as well as the Egyptian Government to contain the influence of Islamist fundamentalism on the educational system (Sayed, 2005). After the revolution, donors at first adopted a “wait-and-see” position over their future engagement in education and revised their overall foreign aid policies in response to the popular revolutions in the region and growing social demand. More emphasis has been put on democracy, civil society, partnerships with people, economic and social reforms, as the new EU Neighbourhood Policy (European Commission et al., 2011) shows. Since then, some donors’ policies started to shift from education to more employment and TVET-oriented matters. For example, a follow-up Education Sector Policy Support Programme to be funded by the EU was stopped in the design phase in 2011 and funds were re-allocated to the above areas. Other donors (e.g. Germany 2012/13) signalled they would place stronger conditions linked to democracy goals for access to further aid or slowed down development projects when political developments in Egypt were at times not in line with democratic principles.

In parallel, the strategic orientations of the new government appear to be increasingly moving towards Arab countries (for example receiving loans from Qatar, the Islamic Development Bank – compared with delayed negotiations with the IMF) as well as China in order to counter-balance the previous dependence on the West. This development may also reach the education sector soon.

At present, apart from the four big players involved in support to the education system in Egypt in the last decade, namely the European Union, World Bank, USAID and the Canadian International Development Agency (CIDA), numerous other donors, agencies and bilateral institutions (including UNESCO and the United Nations Development Programme, UNDP) are active in the sector, however, on a much smaller scale (see Annex B). Most support has been given to primary and basic education, whereas secondary education has been less of a “target” of donor attention. Recently some major donor interventions have come to an end, posing challenges to sustainability.

Donor co-ordination

There are four mechanisms development agencies use to co-operate in Egypt. First, the National Education Strategic Plan 2007-2012 proved to be a common platform as well as a “menu-card” for alignment and design of targeted interventions from different donors, which was less the case before. For example, USAID focused on fiscal decentralisation with pilots in education and on the teacher’s cadre, UNICEF and CIDA supported community-based education models, and the World Bank/CIDA the enhancement of early childhood education. Second, the establishment of an Education Sub-Group of the Development Partners Group fostered co-operation with development partners. Discussions were launched on the development of a common matrix of performance indicators and joint monitoring reviews. Third, the Ministry of International Co-operation has overall responsibility for the co-ordination of donor activities. Fourth, sector leadership is with the Ministry of Education which has established a separate unit dealing with international affairs and donor programmes in education (ETF, 2011).

Potential for strategic complementarity

In the context of recent political change in the country, these mechanisms have been weakened. This was partly due to successive transitional governments, and partly triggered by the expiry of the 2007-12 plan and the related absence of clear future education policy orientations. Structural capacity problems and the departure of former key officials in education administration added to the list of challenges. Moreover, the competitive re-positioning of donors' strategies exacerbated the traditional risk of duplication of donor interventions. Although in the past it was never entirely clear if the Ministry of Education had a genuine policy interest in donor co-ordination, policy makers in various ministries seem to be increasingly aware that a well-structured donor co-ordination in Egypt is needed as it will likely avoid overlap, ensure synergies between donors regarding the proposed programmes and bring more effective results. Recent policy rhetoric from the MOE and Ministry of Manpower and Migration (MOMM) seems to confirm this assumption and suggests changes are likely in the future. All funds from donors are planned to go to the MOE's Education Support Fund. A starting point to avoid the proliferation of fragmented initiatives may be to revive and improve the instrument mapping donor initiatives which was previously applied by the Donor Assistance Group, for certain thematic areas, such as career guidance (ETF, 2009). Currently, there is no system to update this, and studies are badly needed to identify impact and gaps as well as the potential of scaling up certain initiatives. As the team learned with the preparations for the new National Strategic Plan for Pre-University Education 2014-2030 (NSP), even in this critical phase of transition, donors are not fully aware of what others are doing and the MOE continues its practice of dialogue at individual donor level and of assigning similar projects and tasks to different donors.

While donor-funded interventions are often the only way to innovate or introduce major changes in the education system in a context of scarce resources in a lower middle-income country like Egypt, their implementation poses a number of challenges. Apart from the aforementioned issue of potential overlap and waste of resources, the sustainability of results is often questionable. Practice shows that local ownership, local capacities and embedding in wider national strategies are key success factors for the "survival" of interventions as well as a precondition for further systemic development. In general, donor-driven projects are less likely to be sustainable than home-grown initiatives. There are also problems of lack of local financial resources, lack of human resource capacities as well as insufficient structures to take over the agenda when donors leave. As a result, the TVET landscape is characterised by several "islands of excellence", some of them with an uncertain future, but others with a potential to survive or even grow. At the same time, the current large number of often-fragmented donor initiatives clearly leave room for synergy gains as well as potential for strategic complementarity.

Selected examples of donor-supported TVET interventions

Among the numerous, if not countless, past and ongoing donor initiatives in the area of TVET (ETF, 2011b) the following can be highlighted as innovations that proved to have an impact on part of the system or at least demonstrated a potential for mainstreaming and scaling up.

- The Mubarak-Kohl Initiative (MKI) from 1991 to 2009 introduced the dual system based on the German model in segments of industries all over Egypt and was the pioneer for private-sector involvement in TVET in Egypt. Although still

at a small scale (about 150 schools in 2012 and 25 000 students) this innovation began from zero and has become a recognised part of the technical secondary education system. Even though employment rates after graduation vary and a tendency to continue with higher education persists, up to 85% of graduates get a job immediately after graduation. Long before the Germans left, the Egyptian Investors' Union took over the management of programme. Further expansion of this model was planned by the Minister at the time of the site visit. Challenges are the quality of training and the readiness and capacity of SMEs to provide further training places.

- **The EU TVET Reform Programme from 2005 to 2013** piloted the French model of *alternance* education and training as a form of co-operative technical education in approximately 40 schools, claiming even higher employment rates than the MKI. Similar to the German model, it has a strong practical orientation but to a lesser extent. A number of curricula and training packages were developed with involvement of industry, but none according to a national standard. A large pool of teachers and trainers was trained. It also established a unique Egyptian model for linking business and education, the so-called Enterprise TVET Partnerships (ETPs). These are functioning sector ETPs in three sectors: eight in industry, and two each in construction and tourism, generating income and making agreements with donors and civil society. Local ETPs (14 in total) are more volatile and under-resourced. At the strategic level a blueprint for a “TVET Master Plan” was developed which served as a precursor of the new TVET Strategy. The project made remarkable achievements but the impact of its pilots on the system and its sustainability are questionable. A follow-up EU project aims, among other objectives, also to consolidate some of the issues (i.e. resourcing, legal and political recognition).
- **The World Bank’s Skills Development Project** from 2004 to 2010 was implemented as a loan in parallel with the EU programme and stimulated private-sector demand for skills development training by piloting demand-driven and competition-based financing mechanisms to provide technical training directly related to the production process for SMEs. It established three sector councils: the Industrial Training Council, the Building Skills Development Council and the National Council for HRD for the Tourism Sector. Even though a final results framework is not yet available, it can be considered a rare example of institutionalisation of donor assistance which is currently being integrated within the MOITS and its Productivity and Vocational Training Department (PVTD).
- **The USAID Egyptian Competitiveness Programme** contains a small component on TVET (USD 4 million from 2011 to 2014) working in three to four pilot schools in four governorates in the ready-made garment production and food processing sectors, complementing areas and sectors not covered by MKI or EU TVET programme (planning to use curricula from the latter). It sets up Employment Units in the pilot schools, introduces a module for students on entrepreneurial learning, enhances the capacity of training units in schools and undertakes the training of school boards. Another TVET activity is support provided to selected agricultural technical schools in Upper Egypt. USAID also launched a grant facility (Annual Programme Statements) for a total amount of USD 100 million, which provide grants for NGOs, including those working in the field of TVET.

- **The British Council National Skills Standard Project (NSSP)** from 2000 to 2005 worked in three industries (manufacturing, tourism and building/construction) catering for workers' certification and transferable credits (semi-skilled, skilled and supervisors – Levels 1-3). It developed over 100 standards and upgraded around 50 training centres but did not seem to be sustainable as it was put on hold for some time. However, with the establishment of the three training councils, the updating, completion and accreditation of these standards has re-started. Fourteen Vocational Training Centres of the PVTD are now implementing their programmes in 17 trades. There is definitely potential for expansion.
- **Italian Development Co-operation** is funding various projects mainly aiming at infrastructure and local development which include some initiatives with training and skills development components. The most recent are the Development of TVET at the Don Bosco Institute in Cairo project (ended 2010) which facilitated access to jobs or continuing education, and the Education and Training for Egyptian Youth in Fayoum Governorate project. The latter, in co-operation with the International Organization for Migration (IOM), also has also an agenda of reducing illegal migration. It included upgrading of the tourism school, partnership with schools in Italy, teacher training on applied techniques and methodologies and career guidance. There is potential to expand this model in other governorates as quality tourism schools are rare in Egypt. As part of larger debt swap between Italy and Egypt (around EUR 200 million over the last decade) which is being implemented through hundreds of projects some of which are targeted on TVET (e.g. literacy and vocational training for children, modernisation of vocational schools through the introduction of ICT, and technical education clusters for employment in the sector of mechanics). It is not yet known if these can be scaled up.

Future interventions

The partnerships between donors and Egypt have not only expanded but also evolved over time. USAID initially provided targeted, isolated support but then moved to working with Egypt at every level of the education system (USAID, 2012). The EU shifted its interventions from project-level to sector support and changed its funding modality to direct budget support in order to increase local ownership and higher return of funds to the country. However, this approach is being reconsidered in the light of its shortcomings.

In terms of target areas, the previous focus on basic education is likely to shift in the future, given the steady improvements that have been made in that area, to a more skills- and employment-oriented donor agenda. In addition to donors that have traditionally supported TVET, a number of new organisations and countries are entering the scene.

With regard to future interventions, information gained from donors (DPG, 2011-2013) and during the field visit reveals that:

- The **EU** completed its Education Sector Policy Support Programme and has indicated it will not continue in this area. A new programme aimed at improving the Accreditation and Quality Assurance Education System was launched in January 2013. New interventions have been prepared on employment (3-year regional project on governance for employment in the Mediterranean) as well as on TVET, the latter including two projects: TVET II as a continuation of the previous TVET project, but with a new focus on the tourism sector, and an

institutional project to support the PVTD within the MOITS. As regards to the informal education activities, the implementation of the Euromed Youth IV has been extended.

- **USAID** assistance programmes are currently being reviewed. USAID was planning to provide support to prepare the priority programmes of the new 10-year NSP and to focus on science/maths education in all 27 governorates. Its further priorities were early grade learning (primary), teacher development, community involvement (Board of Trustees, school governance) and technology in education. A cross-cutting issue was decentralisation, already a major topic of USAID work in the previous period. TVET was also supposed to feature more strongly on the USAID agenda in near future.
- **KfW** (Germany) continues with its Quality Education Support Programme (QESP) – the seventh phase of the Primary School Construction Programme. The programme comprises the construction, rehabilitation and extension of schools in ten districts in Upper Egypt, while assuming a holistic approach to prepare schools for quality accreditation and to strengthen decentralised management of educational infrastructure. A Simple Maintenance Award Fund (SMAF) has been established to promote cleanliness and maintenance at schools by rewarding schools that excel in this regard. In addition, it is supporting the MOE in developing more flexible designs for schools that are child friendly, lower in cost, produce efficiencies in terms of space, and foster active learning. For the first time, the MOE has partnered with local private architectural firms that benefit from training on new architectural and landscaping guidelines for educational buildings.
- **UNESCO** will continue with literacy programmes and is newly engaged in adult education, teacher development and strategic planning with a view to the preparation of the new NSP. Another new area will be technical education and links to post-secondary education. UNESCO has been considering also a new intervention dealing with the inclusion of civic education in school curricula and the mobilisation of youth in the educational process. It is not known if this intention is still valid.
- **CIDA** no longer supports basic education programming in Egypt as it is increasingly focusing on economic growth, skills and employability (youth and women) and SMEs. A USD 10 million project (2012-2016) aiming to enhance the capacities of SMEs and boost employability is being implemented through a grant to the International Labour Organization (ILO) to focus on the implementation of the National Action Plan for Youth, including elements to improve the capacities of training institutions for formal and non-formal learning, including apprenticeships.
- **ILO** plans to expand technical assistance for its ongoing school-to-work transition project and on career education and guidance to all 5-year technical schools and selected 3-year technical schools and technical colleges. It also plans to go into primary education with career guidance. Specific skills development support will focus on the construction, food and agriculture sector. The ILO also supports the MOMM in upgrading informal apprenticeships. The Italian tourism school project in the oasis of Fayoum will provide seasonal work experience and opportunities for students in Italy. Entrepreneurship education will continue to be

provided for university graduates and available through a new Know About Business website.

- **The United Nations Industrial Development Organization (UNIDO)** has ongoing interventions within projects implemented in the areas of economic development, clusters and value chains, energy, and the environment. Most of the interventions focus on the development of technical knowledge and vocational skills of target groups. Its technical interventions are of a further education nature and are a mix of classroom, practical and on-the-job modules complemented in some cases with online courses. Overall, attention is being paid to active involvement of the private sector.
- The Japanese Embassy is active in Egypt with grassroots grant projects for elementary education with local NGOs by providing school infrastructure and equipment. Japan has also recently focused on TVET, especially for youth.
- **Swiss Co-operation** is interested in mapping of ongoing TVET and employment interventions for possible future funding. It will provide continued support to the current Education for Employment (e4e initiative), which has a focus on matching skills, education and labour market needs and provides advocacy for public-private dialogue.

Lessons should be learned from the past in order to avoid duplication and proliferation of fragmented initiatives and to enhance the coherence and sustainability of interventions. The government and donors together need to play a more active role with a view of making best use of resources, for example by developing common methodologies and joint approaches, or by avoiding repetition of errors. More regular and systematic dialogue between the MOE and donors as well as among donors themselves is needed in the future. And with a view to the new NSP, all donors should be involved from the very beginning, not just a very few. A key statement in the previous National Education Strategic Plan is still valid but tends to be forgotten: "...the NSP is intended to be the sole means of implementing the Government's policy for Egypt's Pre-University Sector....it is therefore expected that all external partners will act within this framework and orient all of their support towards implementation of the NSP. This will require ever more effective co-ordination among the external partners, and between them and the Government" (MOE, 2007).

In Egypt's political-economic transition, continuing targeted and well-co-ordinated donor support to the education sector will be necessary to sustain achievements from previous interventions. Moreover, donor assistance may be essential for Egypt to make the necessary reforms in priority areas.

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Chapter 9.

Implementation management

Whereas the preceding chapter considered what change needs to happen, this chapter focuses on how fundamental change in education may be progressed most effectively. It considers lessons from the experience of reforms of education systems, with a focus on the planning and management of change, and performance-based, evidence-backed management improvement. It discusses matters of policy coherence and cross-portfolio integration, and the role of planning, monitoring and evaluation mechanisms.

Addressing Egypt’s particular challenges

In the view of the team, several of the key directions for reform identified in the National Education Strategic Plan 2007-2012 remain relevant to Egypt’s contemporary context and will be critical to Egypt’s ability to prosper in the years ahead. As noted in Chapter 8, the most important challenges relate to: 1) reducing curriculum clutter and concentration on content coverage in primary education and increasing concentration on active learning of cognitive skills; 2) the modernisation of secondary education (including TVET); 3) the reorientation of assessment; and 4) the professionalisation of teaching. Reform in these four areas is interdependent and far-reaching. Without them an active pedagogy will not emerge and students will not acquire the understanding and skills they will need in the future.

The transformation needed in Egyptian education involves improving its outcomes. That involves shifting the orientation of Egyptian schooling from the acquisition and repetition of knowledge to the development and demonstration of skills. The experiences of implementing the National Education Strategic Plan 2007-2012 have shown that a curriculum-based approach to reform, while necessary, is not sufficient for achieving the changes to teaching and learning required. Serious attention needs to be paid not only to what change is required but also to how that change can be implemented, followed through, and embedded in culture and practice in all classrooms, and in the arms of government administration responsible for steering and supporting education at all levels. Moving from a passive to an active pedagogy will require considerable and consistent effort. No less effort will be needed to meet the challenge of shifting from a top-down, unaccountable management style to one based on transparent information and reward-oriented decision making.

Chapter 3 considered the progress made as a result of the interventions of Egypt’s National Education Strategic Plan 2007-2012. Some progress was made in a range of areas addressed by the plan, but the least progress was made in the most important areas of secondary modernisation, active pedagogy, appropriate assessment, and teacher and teaching quality. Important frameworks were put in place to address these matters over time. The formation of the Professional Academy for Teachers (PAT), for instance, represents a major structural force for long-term improvement in teaching practice and the professionalisation of teaching. Specific initiatives, such as Activity Books for use by teachers in mathematics, science, social sciences and Arabic, have gained more traction by virtue of the broader commitment to teacher professionalisation. The team formed the view that slow progress in the important areas was not so much a failure of problem diagnosis, strategic vision and policy intent but rather of inadequate implementation, monitoring and feedback processes. With a view to promoting a wider dialogue within Egypt’s educational community, the following section explores lessons from experience in educational change in other countries. Although several of these countries have different economic and social conditions than Egypt they can be sources of useful and transferable ideas.

Drawing on recent efforts to change school systems elsewhere

Conceptual frameworks

Cuban (1988) has distinguished between “first order” and “second order” change. First order change affects existing structures to improve the efficiency of educational delivery (e.g. hiring new teachers, professional development, changing timetabling,

updating and changing course content), but does not change the underlying culture and structure. Second order change seeks to change fundamental structures and roles within schools (e.g. team teaching, open classrooms and student-centred learning). From this perspective, the lack of progress of educational reform can be seen as the result of successful first order changes reinforcing established culture and structure, and even deepening resistance against second order change. Thus for fundamental and lasting second order change to be effected it is necessary that external pressure is brought to bear on schools.

Applying this view to the recent Egyptian experience, it may be observed that the National Education Strategic Plan achieved some first order changes but, perhaps, strengthened rather than weakened resistance to the changes in pedagogy that are at the core of successful long term educational reform (see Box 9.1). However, it does not necessarily follow that any external mandating of change will be any more successful, at least not as the only approach to further reform.

McKinsey's study of 20 school systems (Mourshed et al., 2010) found that the choice of, or balance between, "mandating" change strategies and "persuading" change strategies distinguished countries' approaches to change:

"The most critical dimension differentiating the various implementation solutions the leaders of our sample systems used to address these aspects is in deciding whether to 'mandate' or to 'persuade', and in what combination. While mandating interventions delivers consistent quality across the system, persuasion enables stakeholders to feel ownership and autonomy. Managing this tension was a constant balancing act for the improving systems, the system's context being the fulcrum around which these decisions revolved." (Mourshed et al., 2010: 62)

Box 9.1 Resistance to efforts to transform the instructional core of a school system

"Teachers in general face a common problem of practice. Their professional success depends on their ability to motivate an involuntary group of students to learn what the teacher is teaching. In an effort to accomplish this, teachers invest heavily in developing a teaching persona that enables them to establish a relationship with students and to lure them to learn. Once they have worked out a personal approach for managing the instruction of students within the walls of their classroom, they are likely to resist vigorously any effort by reformers or administrators or any other intruders to transform their approach to teaching. Teacher resistance to fundamental instructional reform is grounded in a deep personal investment in the way they teach, a sense that tinkering with this approach could threaten their very ability to manage a class (much less teach a particular curriculum effectively), and a realisation that changing how they teach is akin to changing who they are."

Source: Labaree, D. (2007), "Limits on the impact of educational reform: The case of progressivism and U.S. schools, 1900-1950", Paper presented at conference on "The Century of the School: Continuity and Innovation During the First Half of the 20th Century", Monte Verità, Ascona, Switzerland, September 2007, p. 20.

Egypt's current circumstances of political and economic transition do not map neatly onto the conditions identified by the McKinsey study (see Box 9.2) for preferring either a mandated or persuasive approach to change. Hence, some deft combination of the two approaches appears to be necessary.

Box 9.2 Mandate-based and persuasion-based approaches to school system reform

“Mandating an intervention appears to be chosen as the dominant approach when at least one of the four following conditions occur in the system: 1) the desired change is considered “non-negotiable,” an anchor point of the reform around which system leaders allow little or no compromise in execution; 2) there are few or no losers as a result of that particular change; 3) the credibility and stability of the system leadership and national government, and the historical and political context; and/or, 4) the pace of change needs to be rapid (due to political time pressure). In contrast, leaders tend towards persuasion when the inverse of the above is true (e.g. stakeholder groups are sharply divided, with clear winners and losers as the result of a particular change; or the leader or government presently has a tenuous hold on power). Both these approaches have obvious benefits and drawbacks. Mandating enables fast action and fidelity of practice across the system, but risks stakeholder resistance. Persuasion allows stakeholders to gradually get used to the particular change and to feel real ownership over their decision, but risks complacency and the slowing of reform momentum. Our sample systems developed a set of tactics to mitigate the downsides of both approaches. When an intervention is mandated, the system leaders have gone to the front line to hear their views and to explain the change rationale. When persuasion is used, the system leaders work to build a critical mass to support for the change, while continuously reminding their stakeholders of the urgency of the desired change.”

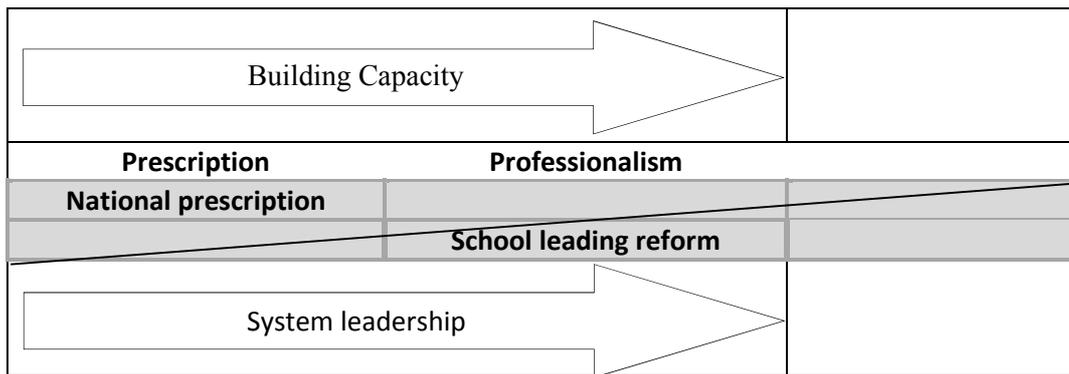
Source : Mourshed, M, C. Chijioke and M. Barber (2010), *How the World's Most Improved School Systems Keep Getting Better*, McKinsey & Company, London, p. 62.

There is considerable evidence to suggest that education reform efforts can only succeed with the support of teachers (McLaughlin, 1987). This is because lasting change can only come from changing teachers' core practice, which requires redefining the relationship between teachers, knowledge and students (Elmore, 1996). Top-down approaches to change may have little if any substantial consequence if teachers are not motivated to change. They may respond superficially, or even undermine the change agenda, by what they do in the classroom largely unnoticed by others. Bottom-up approaches to change may be effective at the individual school level. However, diversity of effort can lead to minimal impact on a national scale if those who are striving to change things are all heading in different directions.

Departing from the typically dichotomous view of top-down and bottom-up approaches to change, a mixed model involving bottom-up school-based, teacher-created and top-down views of educational change has been proposed (Fullan, 2000). Education reform can be guided and understood by looking at reform from three different points of view or three stories: the inside story; the inside-out story; and the outside-in story (Fullan, 2000). A more dynamic model of this balanced approach is suggested by Hopkins (2007), whereby the management of education reform requires strategically rebalancing top-down and bottom-up changes over time. Thus, when standards are too low and too varied, some form of direct government intervention is necessary initially for a short period. However, to sustain reform once the prescribed progress inevitably plateaus, and to continue to improve, it is necessary to facilitate a transition from prescription to professionalism (Hopkins, 2011). Subsequently, schools will themselves lead continuous improvement (see Figure 9.1).

Facilitating such a transition necessitates developing leadership capacity at the individual school and system levels (Barber, 2009). This is a major challenge for Egypt, as it takes capacity to build capacity, and if adequate capacity is lacking from the outset, it is folly to announce that a move to professionalism provides the basis of a new approach (Fullan, 2003). Hence, the importance of teacher education and school leadership development as discussed in Chapter 5.

Figure 9.1 Towards system-wide sustainable reform



Source: Hopkins, D. (2011), “Powerful learning: Taking educational reform to scale”, *Paper*, No. 20, Department of Education and Early Childhood Development, Melbourne.

This recent thinking about reform of education systems reflects the long-understood need for change strategies that are appropriate to context and approaches to change that are balanced in deployment of change strategy mode over time. In their seminal work on the planning of change, Bennis, Benne and Chin (1961) distinguished between “power-coercive”, “rational-empirical”, and “normative-reeducative” approaches.

The rational-empirical approach is based on the assumption that rational people, once presented with information that demonstrates that a particular change is in their self-interests, will accept the change as a means of achieving that interest. Sub-strategies to move change forward include research and the dissemination of knowledge, selection and promotion of personnel based on a consistent knowledge base, and the use of systems analysts as generators of information about organisational dynamics. A more recently documented strategy (Burdus and Miles, 2000) focuses on the use of technology (Internet and IT networks) as information generators and transmission strategies.

The normative-reeducative approach to change is based on the premise that individuals search for satisfaction and that change is largely values-based as opposed to rational in nature. Change is motivated, according to this approach, when the individuals identify some level of dissatisfaction with the *status quo* based on fundamental value clashes. The search is guided by active experimentation and the direct involvement of as many members of the system as possible.

The power-coercive strategy emphasises the use of political and economic sanctions as the principle strategy to bring about change, although the use of “moral” power also historically forms a key element of the strategy (Benne and Chin, 1985).

Twentieth century change-oriented practices in many countries have typically relied on a combination of power-coercive and rational-empirical strategies. This approach has been implemented through control of communication and information – the “consistent message” strategy – and through power vested in hierarchical structure. Throughout the 1980s and 1990s in OECD member countries, an “evidence-based” approach was applied to practical policy development, initially in medicine and subsequently in education. More recent change strategies, for example in Canada, have employed elements of the normative-reeducative approach (Miles et al., 2002) such as in areas of environmental conservation and management, and in education. This has involved efforts to widen participation in problem analysis and exploration of solutions, combining lay and expert inputs, across consumer, producer, supply chain and other interest groups. It can involve giving those who will have the direct responsibility to implement the reform, including classroom teachers, opportunities to vent their anxieties, in response to which the reform agenda may be modified and/or particular support measures put in place.

Strong hierarchical power relations persist in Egyptian education, from central control of the curriculum, central appointments and promotions of teachers, and tight lines of supervision. The post-Mubarak societal pressures for greater democratisation may well flow beyond electoral concerns to matters of policy development and decision making. The professionalisation of the teaching workforce will also give rise to greater expectations of teacher involvement in, and consent to, the formulation of change objectives and processes. Nevertheless, a degree of power-coercion, or a mandated approach to change, is likely to be an expected and accepted element of change implementation, at least for a while. An initially prescriptive approach, which gives ground gradually for a professionally-based model to evolve – along the lines of Figure 9.1 – could find traction if grounded in an evidence-based case for change that is persuasive to the professional educator community. The team is confident that there is a strong core of professional and dedicated teachers who would champion and support a serious effort to raise the quality of teaching and learning in Egyptian schools. Reform of the *thanawiya amma* exam, which the team considers to be the cornerstone of future progress in Egyptian schooling, however, will come about only through assertive action by the government. The question is whether government assertion, while necessary, will be sufficient.

The rational-empirical approach to educational reform appears to be less compelling in Egypt than elsewhere. Lack of reliable and comparable data is a major part of the problem of garnering evidence to identify a need and support an argument for change. Broader issues may also come into play, including societal reservations about the *bona fides* of government promulgations and “official” information. This report of the review itself represents a rational-empirical approach to change. It could be disregarded if it does not resonate with deep concerns within the Egyptian society about the futility of perpetuating the *status quo*.

Fundamental educational reform will involve largely overturning long-held and culturally embedded beliefs about what is valued in educational purposes and processes in Egypt. Achieving success will necessitate a genuine and open discussion about values. The essence of the current value proposition of Egyptian education is that not getting dropped out gets you in (eventually if not immediately) to employment and the security to form a family. Even though many do not jump the socio-economic barriers, education is regarded widely as the basic stepping stone to upward social mobility, perhaps the last resort of the most desperate. The team was confronted by the desperation of an articulate,

albeit illiterate, textile worker who was concerned that his child was not benefitting from the education that his hard work and austere savings had made possible.

Interestingly, while fundamental reform efforts in education may be resisted and stifled by some teachers and other education industry stakeholders, education reform, by its very nature, affects wide sections of society. The question arises as to whether that wider societal interest may be harnessed and how it can be made powerful.

Lessons from international experience

“Achieving and sustaining a school system’s progress is very hard work, and systems must keep expending energy in order to continue to move forward: without doing so, the system can fall back, and thereby threaten our children’s well-being.” (Mourshed et al., 2010: 112)

In recent years, interest in whole system reform of schooling systems has been sparked by improvements in comparative data and analyses of different countries against international benchmarks. Making a particular impact have been the OECD Programme for International Student Assessment (PISA) and the McKinsey analysis of how the most improved school systems keep on improving (Mourshed et al., 2010).

Galvanised by the so-called “PISA shock”, political parties, unions and parent groups have worked together in Germany over the last decade to agree on and implement significant reforms, such as expanding pre-school education, extending the school day, focusing greater attention on students from disadvantaged backgrounds and raising the quality of the teacher workforce. Prior to 1999, primary schooling in Poland lasted eight years, followed by tracking into vocational or academic programmes. Now, the primary cycle has been changed to six years, followed by three years of comprehensive lower secondary school for all students, before a vocational tracking decision is made. One of the key goals of the new configuration was to raise the quality and relevance of secondary education. In particular, by delaying the vocational stream choice by one year and shortening the maximum duration of this track by another year, Poland revamped its secondary education system to make it more suitable for the new competencies needed for a knowledge economy. Increased hours of instruction and delayed tracking of students into the vocational education stream were the most important factors in the improvement of PISA test scores (World Bank, 2010).

The main and most persistent thing known about major educational reform is that it is difficult to bring about and even harder to sustain. Various candidates have been identified as the culprits of education system change failure:

1. **Poor selection of the change agenda:** the decision to reform is ad hoc, opportunistic or faddish, too piecemeal or too comprehensive, not evidence-based, and relying on the “wrong driver” – a policy force that has little chance of achieving the desired result (Fullan, 2011).
2. **Unclear and inconsistent goal setting:** the purpose is vague and/or ambiguous, the goals are overly ambitious, targets or milestones are imprecise (Rumelt, 2011), and progress towards the goals cannot be measured or monitored reliably. Many proposals for change come unstuck because there is a mismatch between expectation and deliverable change. Working out what can be done is affected by the extent to which expectations about proposed changes can be handled and controlled. Too often the financial implications of reaching the

goals are not identified (Psacharopoulos, 1989). Nothing is more destructive of morale in any system than frequent, sudden reversals of strategy or policy, especially when people have worked hard to make previous policy successful (Levin, 2008).

3. **Poor planning:** needs and problems have not been anticipated, risks have not been assessed and risk mitigation measures have not been prepared. Comprehensive reform demands that some steps occur before others, that some problems take precedence, and that resources be deployed strategically. Failure to set priorities can result in minimal change. Setting the wrong priorities may leave the students worse off than before reform was undertaken.
4. **Poor implementation:** intended policy outcomes fall short of expectations mainly because of inadequate implementation (Psacharopoulos, 1989). Effective implementation requires segmenting the project into manageable pieces, prioritising its various processes, ensuring ownership consensus among stakeholders, and systematically measuring results (Maroun et al., 2008).
5. **Poor communication:** purposes, benefits, and processes of change have not been clearly made known to those immediately affected, and other influential stakeholders, and broader community members whose support could assist in promoting the reform.
6. **Inadequate resourcing:** inadequate funding to support the reform poses risks to quality and the signing-up of key participants. Lack of expertise in critical areas, and insufficient personnel for implementation administration and monitoring can also lead to breakdown.
7. **Powerful resistance:** inevitably, any change agenda of substance confronts resistance from those individuals or institutions who fear they will lose out, in terms of status, relative earnings, and security. Specific forms of resistance may arise from teachers and others in the schooling system who feel threatened or exposed by the requirements of the reform agenda, such as teachers without adequate personal knowledge and the skills foundations to be confident in a more interactive learning environment, or supervisors who are unfamiliar and uncomfortable with modern pedagogy, or who fear a loss of their current power. Resistance can arise also from ingrained patterns of belief and behaviour that are widely accepted as normal no matter how poorly they work (Levin, 2008).
8. **Lack of internal commitment:** the educator community which is expected to make an externally-driven agenda work on the ground lacks sufficient understanding or acceptance or capacity or incentive or willingness to make it work.
9. **Lack of external support:** the reform agenda is seen as a matter internal to the schooling system and does not engage the interest of external stakeholders.
10. **Poor change management:** planners fail to anticipate the need to attend to the emotional and attitudinal concerns of people affected by or anxious about the reform agenda, its processes and consequences. Ultimately, reform is more about people than it is about policies, institutions, and processes. Most people, including educators, tend to change slowly when it comes to attitudes, beliefs and ways of doing things. Sensible professionals do not replace their strongly

held views and behaviour patterns in response to *fiat* or the latest vogue; instead, they respond to developing sentiment among respected colleagues, to incentives that reward serious efforts to explore new possibilities, and to the positive feedback that may come from trying out new ideas from time to time – all of which can take years (American Academy for the Advancement of Science, 1990).

Lessons from Ontario in effecting large-scale and sustainable change in a school system

As noted in Chapter 8, policy coherence involves horizontal linking-up as well as vertical sequencing. A Canadian Council on Learning evaluation of Ontario's Student Success/ Learning to 18 strategy identified a number of interconnected factors, including links beyond the education domain, contributing to improved learning outcomes (see Box 9.3).

Box 9.3 Interconnected factors contributing to improved learning in Ontario

1. Systemic change depends on a range of governmental supports.
2. Change requires the concurrence and involvement of those responsible for implementing the changes.
3. The strategy focuses on according equal respect to all post-secondary destinations, including immediate employment, apprenticeship, college enrolment and university enrolment
4. Schools provide students with opportunities to explore the connections between what they learn in school and future employment or study.
5. Schools credit student accomplishments and build upon these accomplishments to help students overcome the barriers they have yet to master.
6. Schools work to eliminate or minimise the difficulties that students face in transitioning from one level of education to the next.
7. Schools work to accommodate the different ways in which students learn.
8. Schools attempt to actively engage students and enable them to persist in school despite the challenges they may face.

Source: Ungerleider, C. (2008), Evaluation of Ontario Ministry of Education's Student Success/Learning to 18 Strategy. Final Report, Canadian Council on Learning

In assessing what works in school systems reform, and based on his work in Ontario, Levin suggests the need to focus on the key elements of sustainable change:

- Focus on a few key student outcomes that matter most and are most understandable for the public and for educators.
- Put effort into building capacity (skill).
- Build motivation (will) by taking a positive approach.
- Work to increase public and political support for an effective, thoughtful and sustained programme of improvement (Levin, 2008: 234-225).

Educational reform of consequence necessarily takes a long time

The education reform experiences of Singapore and the Republic of Korea indicate that it takes several decades before the results of investments in education are realised. Even if education reform is successful, its economic impact will not be immediate, as new graduates will represent a very small proportion of the workforce needed to achieve demonstrable results. The full impact is expected to take an additional 35 years after the completion of a 10-year reform policy (Maroun et al., 2008).

Comprehensive structural reform of education systems poses special challenges. Since children in compulsory education are in school for about 12 years, their learning outcomes cannot be jeopardised. For instance, frequent curriculum changes can be disruptive to their learning as they may not be able to build on previous learning and teachers are teaching new material before being able to understand which learning plans work well. In addition, if major reforms disadvantage some cohorts and not others, the inequitable outcomes can influence lifetime opportunities for those affected. Learning must be progressive and related as students pass through the grades so that what they learn is relevant and meaningful while the reform is being implemented.

A systems approach is essential

Planned change distinguishes itself by its focus on the development of broad systemic plans to address the dynamics of the change initiative. Other forms of change tend to focus on individual elements of the system while ignoring the connection between those elements across the change system.

To be successful, a comprehensive reform strategy has to take a systemic approach. Reform of individual components, without taking account of their interdependencies and impacts on other parts of the system, results in lack of coherence and poor sequencing as reform moves at different speeds through the system and benefits from spin-off effects do not accrue. Additionally, because education reform affects and is affected by policies driven from other portfolios (e.g. finance and labour ministries) it is necessary to ensure policy coherence across the relevant portfolios. In Egypt, there will need to be joint efforts among *muddiriyas* (governorates), with the private sector and with donor entities. Wide engagement and consensus building in the development phases is crucial, with an agreement to “anchor” the reform in a clear and well-understood strategic plan.

“Whole system reform” requires policy and strategy levers that have the best chance of driving successful reform. Effective drivers generate a concerted and accelerating force for progress toward the goals of reform. An effective driver is one that achieves better measurable results with students. According to Fullan, the “wrong drivers” are: using test results and teacher appraisal to reward or punish teachers and schools, promoting individual solutions, investing in and assuming technology will be transformative, and adopting fragmented strategies. The right drivers – capacity building, group work, pedagogy and systemic solutions – are effective because they work directly on changing the culture of school systems (values, norms, skills, practices, relationships). By contrast the wrong drivers alter the structure, procedures and other formal attributes of the system without reaching the internal substance of reform – and that is why they fail (Fullan, 2011).

Based on a review of research on improved school districts in the United States, Shannon and Bylsma (2004) developed a conceptual framework of interconnections among the different elements of a systemic approach to school reform. The framework

suggests that quality classroom teaching and learning requires: 1) alignment of accountabilities, curriculum and assessment, and teacher professional development; 2) adequate resources allocated strategically on the basis of evidence of need and performance; 3) clear accountabilities and collaborative relationships across all levels of the system; and 4) effective leadership to sustain improvement efforts over time (Shannon and Bylsma, 2004, p. 56). Shannon and Bylsma provide concrete suggestions for improving school districts:

- **Hold staff accountable for high expectations.** Time and again, research has pointed to the positive impact of high expectations on student achievement. These expectations are encouraged through fostering shared beliefs and values, having clear goals, and leading with a shared vision of change. School districts can make high expectations part of the job by expecting excellence, monitoring performance and providing feedback as necessary.
- **Pay close attention to instruction.** Districts can provide guidance and oversight that improves teaching and learning by developing a common vision of good instruction and helping schools to realise that vision through monitoring curriculum, instruction and teaching practice.
- **Align standards, curriculum, assessments and policies.** The district should review and revise policies as needed in order to closely link programmes and practices to learning goals. The district also serves as the central venue for co-ordinating curriculum approaches and decisions. Ensuring alignment between standards, curriculum and assessments is the responsibility of the district.
- **Target professional development.** The district can take steps to ensure that professional development focuses on improved teaching and learning. Improved districts make use of school-based coaching and support.
- **Develop dynamic and distributed leadership.** Improved districts provide moral leadership that emphasises doing over talking. Their leadership teams encompass not only central office staff but also principals and teacher leaders. These leaders share a common purpose, spend time in schools, and show interest in teaching.
- **Sustain improvement efforts.** Sustaining requires looking at improvement as a process that requires a long-term commitment. Districts that improve research the solutions that are right for their context, make thoughtful decisions about what needs to change, and then stay the course. A long-term commitment to a particular change initiative helps staff internalise change and move improvement forward.
- **Allocate resources strategically.** Allocate or reallocate the resources necessary to support quality instruction. Because not all students learn at the same rate, additional resources might be needed to support low-performing students. Districts need to be flexible with schools when it comes to meeting the needs of students.
- **Delineate district roles and responsibilities clearly.** Districts that improve balance their authority with school autonomy. District staff set expectations and act as change agents but also support schools and mentor them.
- **Manage the external environment as much as possible.** Improved districts serve as a buffer between their schools and external distractions. They take

responsibility for responding to state and federal policy mandates. The district coordinates efforts to organise local businesses and community members in support of the schools. (Shannon and Bylsma, 2004)

Longer-term strategic planning and rolling shorter-term operational planning

Longer-term strategic directions are important in making it clear to all involved where the reform is headed and what the ultimate destination is. Monitoring of progress along the journey allows for changes in ways and means if, for instance, one road taken turns out not to be leading to the intended destination.

One of the problems with the National Education Strategic Plan 2007-2012 was the conflation of the strategic intent and the operational means. The clearest expression of this confusion was the reliance on key performance indicators that were input-related (e.g. number of training programmes offered) rather than output-related or outcome-oriented (e.g. measures of student learning improvement). The under-achievement of the main strategic goals of the plan reflected not only the overly ambitious nature of its multiple goals set but also a preoccupation with sequencing activities to hit fixed input targets alongside inadequate monitoring of progress against output measures.

A rolling operational plan is an alternative to a fixed set of annualised operational targets within a longer-term strategic plan. A rolling plan, aligned with the government's budget provisions and forward estimates of expenditure, provides a framework for annual monitoring of progress and revision of interventions as required. A rolling plan for capital works and teacher supply, for instance, say on a three-year forward planning basis, would allow the lead times necessary for planning, consulting and provisioning for implementation, and also permit variations as circumstances change or monitoring indicates the need for a modification of planned interventions.

A particular benefit of rolling operational planning and reporting is that regular reviews and updates communicated to stakeholder groups help to sustain momentum and support.

A gradual, risk-based approach is required

Another benefit of rolling operational planning is that it provides flexibility of approach, including the use of pilot initiatives to trial an intervention and assess its effectiveness. The ensuing budget commitment to the rolling operational plan, whether to cease or continue or expand the intervention, can be informed by the evaluation of the pilot.

Phased implementation planning is critical, with prioritisation and sequencing that bears in mind the urgency to address issues and the need to showcase quick wins to build momentum and rally support. The use of pilot programmes can help address risks and resistance, drawing key lessons that can increase the prospects of success of wider rollouts. Making use of pilots is one of several lessons drawn from efforts to reform tertiary education in OECD member countries (see Box 9.4).

Box 9.4 Some lessons from international experience in education reform

- Establish ad hoc independent committees to initiate education reforms and involve multiple stakeholders.
- Use pilots and policy experimentation to test proposals overcome blockages and foster consensus.
- Favour incremental reforms over comprehensive overhauls unless there is wide public support for change.
- Avoid reforms with concentrated costs and diffused benefits.
- Identify potential losers from reform and build in compensatory mechanisms.
- Create conditions for successful implementation of reforms.
- Communicate the benefits of reforms and the costs of inaction.

Source: Tremblay, K. (2008), “What next? The challenges of policy implementation”, in P. Santiago et al. (eds.), *Tertiary Education for the Knowledge Society*, Volume 2, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264046535-14-en>.

Assessing the risks of a revisited reform agenda

In pursuing education system reform, a number of risks may be identified. These include capacity risks, such as insufficiency of funding, inadequacy of personnel and shortage of expertise, and technical risks, such as inadequacies in data collection and analysis processes and ICT infrastructure.

In revisiting the modernisation of secondary education in Egypt a particular set of risks may be identified. First is the deeply embedded cultural role of the *thanawiya amma*. Efforts to replace, modify or augment it can be expected to encounter resistance on several fronts. Sections of the community are likely to be concerned about loss of transparency of the national exam as a basis for meritocratic access to university and the possibility of opening university admissions to corruption. University professors can be expected to resist what some of them will see as a reduction of their autonomy, power and influence. Opposition can be expected also from secondary teachers, whose income from private tutoring could be reduced, as pressure to cram for one high-stakes exam is eased. Second, a change from a passive to an active pedagogy is likely to encounter resistance from the older teacher cohort, including sections of the inspectorates at central, *muddiriya* and *idara* levels, whose knowledge and skills deficiencies erode their confidence to embrace the modernisation agenda. Support for the reform among younger and better-prepared teachers may be limited as the team noted signs of reform fatigue among teachers.

Hence it will be necessary for the government in pursuing the reform of secondary education to communicate well the need for and benefits of the reform, summon support from employers and parents, and work collaboratively with teachers and professors in designing and piloting new learning assessment measures.

Implementation management and monitoring

Particular attention needs to be given to implementation of the reform agenda. Rather than basing reform primarily on achieving school input targets, as in the National Educational Strategic Plan 2007-2012, there needs to be a sharp focus on improving learning outcomes. The previous plan did not make explicit the criteria for allocating resources, nor assign accountabilities to the different actors. What is needed is a transparent, accountability-based approach to implementation management, where it is clear what each actor is responsible for achieving.

Learning objectives need to be stated in terms of measurable learner behaviour – what the student should be able to know, understand and do. Starting points need to be identified, based on what current students know and can do. Milestones need to be set in terms of learning improvement steps, and progress towards them monitored, analysed and reported. The data needed for monitoring purposes need to be defined on a consistent basis. The data must be accurate, timely and comparable, as outlined in Chapter 6.

Egypt will need a much improved and professional approach to data collection and analysis in support of evidence-informed decision making. National data holdings are major investments. The team gained the impression that Egypt’s data collections are not sufficiently well co-ordinated to identify their gaps and overlaps. Ideally, data holdings should be centralised. Anonymised data should be made available through a single portal, with appropriate protection of privacy and practice of research ethics.

Particular efforts will be required to enhance capacity at all levels to use information to support decision making – at the system level centrally; in governorates for policy and programme design, implementation, and monitoring and evaluation; and at the school and classroom level for assessing where students are in their learning and modifying learning experiences based on evidence of learner needs and performance.

In order to benchmark Egypt’s educational performance internationally, consideration should be given to participating in PISA, where Egyptian students’ results can be compared to 79 other economies, including Dubai, Indonesia, Jordan, Qatar Tunisia and Turkey. Another option, and perhaps as a preliminary step towards full participation in PISA, is that Egypt could engage with a small number of schools in “PISA for schools”.¹

Knowledge management

As the reform process rolls out, a systematic approach to sharing knowledge will be vital. Consideration might be given to the appointment of “knowledge managers” at the Policy and Strategic Planning Units (PSPUs) at the national and governorate levels who could liaise to ensure consistency in data gathering and reporting, and disseminate good practices linked to learning improvements. Recognising achievements and showcasing success stories can help to sustain momentum and support. The ultimate goal is to turn the reform apparatus into a continuous learning system, so that common challenges and roadblocks can be identified and anticipated, and successes and exemplars of good practice can be shared swiftly among stakeholders.

Campaigns to sell the benefits to the public will also be required, as well as the achievement of quick gains through targeted initiatives that would build momentum for the reform. A comprehensive communication and engagement plan could help build momentum on reform efforts and further leverage the support from communities, parents and private-sector players. As well as communication actions, such a plan could include mechanisms for assessing stakeholder engagement levels throughout the reform process.

Change management

Change needs to be understood and managed in such a way that people can cope effectively with it. Ideally, it should be managed in a way that encourages support and ownership. People affected by planned changes should be given the opportunity to agree with, or at least understand, the need for them. They should have a chance to decide how the change will be managed, and to be involved in its implementation design.

A formal approach for managing change – beginning with the Ministry of Education and then engaging key stakeholders, *muddiriyas*, *idas* and school principals – should be developed early, and adapted often as change moves through the system. The change-management approach should be fully integrated into programme design and decision making, both informing and enabling strategic direction. It should be based on a realistic assessment of the system’s history, readiness and capacity to change (Jones, Aguirre and Calderone, 2004).

There is a compelling case for change in Egyptian education. It is that Egypt’s future depends on the skills and resilience of its young people, but that its current schooling is not producing people with the attributes that are needed. Egypt’s educational leadership has the responsibility to articulate a convincing need for change, making clear that the goals are essential, and demonstrating conviction that the goals are attainable.

Leaders should be explicit about the culture and underlying behaviour that will best support the education reform agenda, and find opportunities to model and reward that behaviour. This requires developing a baseline, defining a student-centred culture and devising detailed plans to make the transition. The leadership should also provide a road map of what change is envisaged, how it will be undertaken, when it will be rolled out, and what support will be available.

In particular, teachers – whose attitudes and behaviour at the instructional core are what matters most – should be accorded professional respect by being given the discretion to determine the ways and means by which learning objectives are achieved. That is, teachers should design the learning experiences for enabling their students to learn, and be held accountable for the results they achieve, aligned to the goals for improving student learning.

The best change programmes reinforce core messages through regular, timely advice that is both inspirational and practicable. Communications flow in from the bottom and out from the top, and are targeted to provide actors the right information at the right time and to solicit their input and feedback. Effectively managing change also requires continual reassessment of its impact and the system’s willingness and ability to adopt the next wave of transformation. Reported progress in improving student learning will be the most powerful force sustaining change.

“The goal of public schools should be real and meaningful learning, across a wide range of desirable student outcomes, with greater equity in those outcomes, in a way that builds and supports positive morale among all those involved in schools and also supports high levels of public confidence in public education.”
(Levin, 2008)

Notes

1. The PISA-based test for schools is a student assessment tool used by schools to support benchmarking and school improvement. See PISA-based test for schools, www.oecd.org/pisa/aboutpisa/pisa-based-test-for-schools.htm.

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Chapter 10.

Conclusions

Egypt confronts many complex challenges. It is undergoing difficult political, social and economic transitions. Its population is expanding rapidly. Human settlement pressures are running up against environmental and physical capacity limits. Household incomes are generally low, and poverty is deepening in some regions to dangerous levels. The economic base is in a dire condition, and several established industries are losing ground to global competition. Most of the working-age population do not have adequate skills for employment in a modern economy. Traditional sources of employment are not growing at anywhere near the rate required to absorb new entrants to the labour market. There is a severe scarcity of finance capital for investment in new enterprises and retooling of existing industries. Government spending will be severely constrained over the next decade.

While the team was producing this report, the circumstances in Egypt were constantly changing. Much of the data presented in the preceding chapters are, therefore, outdated. Nevertheless, this much remains perfectly clear: Egypt's future depends in large part on the skills and resilience of its young people. However, too many young people are not developing at school the attributes that are needed. The urgent priority for Egypt is to make education and training relevant to its economic prospects. It will need to do so in ways that develop rounded citizens who can work together to build a cohesive society.

Effective investment in human capital formation is, therefore, critical. Effective investment means raising the productive capacity of the workforce. It also means producing an open and enlightened citizenry. And it means enabling all individuals – regardless of their personal characteristics and social backgrounds – to achieve to the full potential of their talents. Effective education means that students learn what they need to know, understand and be able to do for work, life and further learning.

There is a large agenda of things to be done to improve education and training but there are limited financial resources for this great task. While there is a clear need for greater public investment in schooling, and some room could be made by reductions of unsustainable subsidies, the volatility of current circumstances requires an assumption of very limited immediate real growth in government spending for education. In this environment, it will be important to harness the support of donors and co-ordinate their efforts with those of the government. Additionally, it will be necessary to increase private investment in the provision of schooling, within a policy and regulatory framework that safeguards quality and equity.

Effective investment in human capital, however, does not mean merely spending more money on education, or merely producing more graduates with higher qualifications. Egypt has too little of the former and too many of the latter. Clear

priorities need to be set and followed. That means deliberately deciding not to do some things at all, and to do some other things more slowly, in order that the most important things get done well as soon as possible.

The National Education Strategic Plan 2007-2012 tried to do too many difficult things too quickly. Consequently, while it laid important foundations for future building, too many things were not done properly, and the most important reforms were not progressed as far as necessary. The transformation that is required in Egyptian education involves improving the learning experiences and outcomes of schooling so that educated youth can be productive and contributing citizens. That involves shifting the orientation of Egyptian schooling from the acquisition and repetition of knowledge to the development and demonstration of skills.

That means reforming schooling fundamentally. It means not only giving a high priority to increasing equity of access to schooling but also giving much greater priority to improving educational effectiveness. It means focusing on how, and how well, students learn core cognitive skills. It means, therefore, reducing the current emphasis on curriculum content coverage, changing classrooms from passive to interactive places of learning, and using assessment professionally to monitor student progress and inform educational interventions, rather than as a crude and unfair tool for social sorting – ruling out for some, and limiting for others, their lifetime opportunities.

It also means completely overhauling the underperforming, under-resourced and undervalued provision of technical and vocational education and training, by upgrading its capacity and status, reorienting its offerings to contemporary and emerging labour market requirements, and integrating it as a system at the centre of Egypt's economic transformation agenda.

The most pressing requirement is to improve the way young people develop the skills they need to participate in the labour market. That means re-committing to the 2007-2012 plans for secondary modernisation, including both general and vocational education. Continuing attention will also need to be paid to improving students' development of core cognitive skills in their early years of schooling.

The common factor undermining efforts to improve student learning at all levels is the invalid structure of assessment and its improper use. The most insidious and pervasive influence in Egyptian education is the *thanwiya amma* exam. Without its reconstruction, alongside the development of more valid and reliable assessment methods and a more flexible approach to university admissions, it is difficult to see real progress being made in educational practice and culture.

The team was impressed by the depth of understanding among Ministry of Education officials of the imperatives for schooling reform, and the directions that need to be pursued to make schooling more effective, and by their professional commitment, patience and persistence. In the view of the team, the major obstacles to substantive educational reform are embedded in aspects of Egyptian cultural norms that officials, notwithstanding their competence and commitment, cannot shift alone.

Fundamental educational reform will involve largely counter-balancing, if not overturning, long-held and culturally embedded beliefs about what is worthwhile in educational purposes and processes in Egypt. Achieving success in this endeavour will require a genuine and open discussion about values. Among other things, this will mean taking the education debate to the core of Egypt's economic development dialogue.

The core public policy responsibility of the government and its chief advisors is to set goals, allocate resources and assign accountabilities. The goals need to be clear and well understood. The resources need to be sufficient and fairly distributed. The accountabilities need to be based on the performance throughout the system of those who have stewardship of the resources to achieve results linked to the goals.

The review team was impressed by many of the teachers and school leaders it had the opportunity to meet. They have genuine interests in the development of the children and young people they serve. They deserve clarity about key educational goals and specific objectives for improving student learning. They deserve respect for their professional ability to design learning experiences that enable students to achieve those objectives.

The Ministry of Education has the responsibility to set the educational goals for Egypt's schooling system. The ministry needs to move away from input targets and to articulate goals for student learning outcomes. It has already embarked in this direction by articulating educational outcomes in terms of cognitive, personal and interpersonal skills, but these efforts are countered by a cluttered curriculum, teachers' preferences for teaching through recitation, and parental pressure for students to get high marks in the content-based exams.

The Ministry of Finance and the Ministry of Education have the responsibility to allocate resources transparently and equitably, and in ways that are linked to clear goal-based performance expectations. A student-based model for allocating resources needs to replace the current opaque and unfair arrangements for resource allocation.

School principals and classroom teachers should be given more discretion in the use of available resources and held accountable for the results they achieve. Teachers should have flexibility of ways and means to achieve improvements in student learning outcomes. The educational leadership at the *muddiriyas* and *idas* need to see their role as managing for results, rather than just inspecting to ensure that particular matters are covered or to constrain what principals and teachers can do. They need to focus on what students are learning to do, and provide the support that principals and teachers need, including by diffusing good innovations in teaching practice.

Teachers generally will need more focused support so that they can continue to improve their teaching, and the opportunity to share and learn with their professional colleagues. The formation of the Professional Academy for Teachers represents a major, long-term structural advance. Teacher education generally, especially pre-service teacher education, will need to be sharpened up and, in some areas, especially in TVET, reshaped.

A well-constructed and well-communicated change agenda, grounded in evidence about current deficiencies and looking ahead to future imperatives, bringing together progressive teachers and school leaders, should harness considerable educator support. Nevertheless, resistance to change is to be expected, including from both powerful and powerless quarters. It will be necessary, therefore, to call on the wider community of individuals, families and employers to champion the necessary changes and help make them possible. Employers, especially in private-sector enterprises, which will be the main source of Egypt's future economic base, should have a strong say in helping to reshape secondary education, as well as TVET more broadly, and thereby helping to shape Egypt's future labour supply.

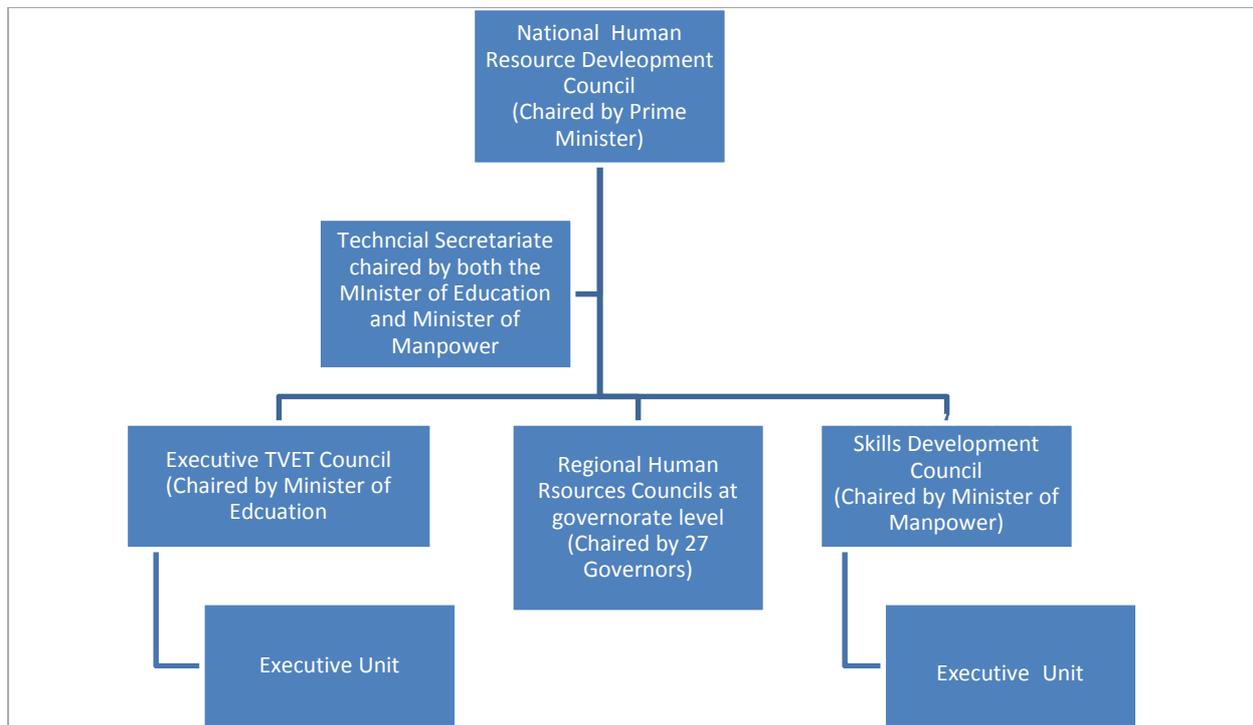
Serious attention needs to be paid not only to what change is required but also to how that change can be implemented, followed through and embedded in culture and practice

in all classrooms, and in the steering and supporting arms of government administration at all levels.

Considerable effort will need to be applied to making the necessary shift from an authoritarian and unaccountable management model to one based on transparent information that underpins accountability for performance at every level. As noted in preceding chapters, there are underlying issues of governance beyond the education sector that will need to be addressed for educational reforms to be effective. Broad public-sector reforms will be necessary complements to the education-specific and labour-market reforms identified in this review.

There is much in the contemporary Egyptian condition to give cause for despondency but much more to give hope in the potential of Egyptian youth to forge a new future. Egypt's basic challenge, its basis for recovery and its source of future strength, is to let its people learn to learn.

Annex A. New governance structure of TVET in Egypt



Source: ETF (2015), *Torino Process 2014: Egypt*, ETF (European Training Foundation), Turin, www.etf.europa.eu/web.nsf/pages/TRP_2014_Egypt.

Annex B. Major donor support to education and TVET in Egypt, 1997-2012

Year	Initiative (name of activity)	Description	Education sub-sector	Donor (funding)
2011-2014	Egyptian Competitiveness Programme (ECP)	Three/four schools in four governorates (ready-made garment and food processing sectors). Establishment of Employment Units in the pilot schools, module on entrepreneurial learning, enhances the capacity of training units in schools and training of school boards.	TVET as part of a wider programme on competitiveness)	USAID (USD 4 million)
2005-2013	TVET Reform Programme	Development of decentralised, demand-driven TVET institutions, national regulatory and support institutions, quality improvement of delivery, enterprise-TVET partnerships.	TVET	European Union (EUR 60 million)
2008-2012	Education Sector Policy Support Programme (ESPSP)	Direct budget support to 11 out of 12 policy priority areas of the National Education Strategic Plan 2007-2012 (NESP). Supporting open and equitable access for all children to all educational levels (focus on girls, vulnerable children), quality of educational services and learning outcomes, support to improving system efficiency and effective management of public spending in education	Pre-school, primary, preparatory, secondary (incl. TVET elements)	European Union (EUR 140 million)
2005-2012	Early Childhood Education Enhancement Project (ECEEP)	In 18 governorates – <i>muddiriyas</i> in the poorest 152 administrative units – <i>idasas</i> . To enlarge and strengthen quality in early childhood education.	Pre-school	CIDA (CAD 15 million) Different donors, including World Bank, World Food Programme
2000-2012	Secondary Education Enhancement Project (SEEP)	Currently in its third phase; goal of conversion of 315 commercial secondary schools to general secondary schools to increase enrolment in secondary general enrolment from 30-50%; revision of curriculum framework with a view to unifying the secondary education curriculum, better integrating the technical and general parts.	Secondary	USAID (USD 50 million)
1991-2011	Mubarak-Kohl Initiative (MKI)	Introducing the German dual system as innovation in TVET; private-sector co-operation with TVET; employability programme for unemployed youth with a local development dimension.	TVET	GIZ

2003-2010	Support to Egyptian Primary Schooling (STEPS I + II)	Support of UNICEF's Community Schools in Assiut, Sohag and Qena to facilitate a shift towards a child-centred and activity-based educational methodology; support to MOE in the implementation of national standards at primary level; training of teachers in active learning pedagogy; role of school leaders in supporting change.	Primary	CIDA (CAD 23 million)
2004-2010	Skills Development Project (SDP)	Stimulating private sector demand for skills development training by piloting a demand-driven and competition-based financing mechanism to provide training for SMEs.	TVET	World Bank (USD 12.5 million)
2004-2009	Education Reform Program (ERP)	300 schools in each of 7 governorates (Cairo, Alexandria, Fayoum, BeniSweif, Minia, Qena, Aswan). Encourages system-wide reforms by experimenting at lower levels of the educational system (schools, community, local government) to try out effective strategies for educational improvement. To capitalise on the readiness of the business community and families to support change in the quality of education. Mix of interventions (teacher training, administrator training, school capacity to facilitate transition to labour market, designing evaluation and assessment tools, improvement plans as a step towards accreditation).	All	USAID (USD 77 million)
2005-2009	School Team Excellence Awards Programme (STEAP)	In 16 000 schools awards are funded and distributed to top educators and teams, aspiring to motivate teachers to improve the quality of their teaching in light of the National Standards of Education. A guide for Egyptian schools was designed to help schools adopt standard-based quality reform; training for teachers and those involved in setting improvement plans.	Primary	USAID
2006-2008	Egyptian Environmental Education and Outreach Programme (EEOP)	Seeking to transform the way educators teach environmental education and the way it is approached by communities. Assessment of existing environmental education materials, developing new materials as needed and dissemination to schools and communities directly and via an environmental and outreach resource centre. Training of teachers to direct students in real-world environmental projects.		USAID
2002-2008	Smart Schools	4 000 schools in 13 governorates. Capacity building of teachers to integrate ICT into inquiry-based teaching and learning and to strengthen NGOs to assist schools and communities.	Preparatory, secondary	USAID

2003-2010	Mainstreaming Interactive Learning Project	In 90 schools in 3 governorates (Fayoum, Qena and Assiut). Regulatory framework to activate school self-management; instructional packages for implementing active learning designed; prepared Trainer of Trainers (TOT) courses on active learning.	Primary	UNICEF
2010-ongoing	Learning Improvement for Everyone (LIFE)	The LIFE project aims to enhance inclusion of children with disabilities in public schools.”	Primary	UNICEF
2004-2006	The Effective School Project (ESP)	4 000 schools in 9 governorates (Qena, Minia, Kafr El Sheikh, Ismailia, Shariya, Dagahliya, Sohag, Qalyubia, Gharbia). Realisation of the model of the effective school suggested by the National Standards of Education (including school vision, mission, social climate, methods of teaching, learning environment). To create clusters of adjacent schools whose pupils can communicate. Fostering teachers' and parents' participation in school administration.	Primary, preparatory	European Union World Bank
2001-2006	Alexandria Project in Decentralisation	30 schools with 30 000 students and 1 600 teachers. Promoting responsibility at the regional, district and school level to achieve greater initiative and accountability. Involvement of various key actors (Regional Education Advisory Committee, leaders in culture, media and business; District Education Committees, Boards of Trustees in each school, including community leaders and elected parents' representatives.	Primary, preparatory, secondary	USAID
1997-2006	Education Enhancement Programme (EEP)	In 15 governorates (distant and rural with significant gender disparity and low enrolment). Supporting quality inputs to basic education (school buildings, instructional materials, learning technologies, teacher in-service professional development). Longitudinal study to evaluate effectiveness of projects sponsored by EEP to improve education quality.	Primary, preparatory	World Bank European Union (110 million)
2000-2005	New Schools Project	100 schools in 4 governorates (Fayoum, Minia, BeniSuef, Alexandria). National education standards were transformed to rating scales to be incorporated into assessment of school quality; Encouraging schools to set development plans congruent with standards-based reform.	Primary	USAID

2000-2005	National Skills Standard Project (NSSP)	Developed over 100 standards and upgraded around 50 training centres for three industries (manufacturing, tourism and building/construction).	TVET	British Council
1999-2004	International Education and Resource Network (IEARN)	85 schools. Raising environmental awareness of students through collaborative educational projects and networking with schools in the USA.	Primary, preparatory	US Embassy

Schools for Skills – A New Learning Agenda for Egypt

The economic reforms which Egypt has initiated since 1991 have reduced public sector dominance and increased opportunities for the private sector. The challenge for the Ministry of Education has been to make education and training more relevant to the country's economic prospects. It was in this context that the ministry launched the comprehensive National Education Strategic Plan 2007-2012. Over this period progress was made in achieving higher participation and lower attrition rates at all levels in the education system, professionalisation of the teaching force, increased autonomy, and better data collection and reporting. A number of quality issues, however, remain a concern which need to be addressed.

This book provides a brief overview of the history of education in Egypt as background to an in-depth analysis at the national, regional and municipal levels of the compulsory education system including vocational and technical education with a special focus on improving quality, equity, and efficiency.

It concludes with a set of key recommendations concerning the structure of the system and its labour market relevance; the quality of teachers and teaching; access and equity; financing; governance and management; the strategic priorities and implementation management.

This report is part of the OECD's ongoing co-operation with non-member economies around the world.

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