Oman

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SULTANATE OF OMAN
MINISTRY OF EDUCATION

THE WORLD BANK

Education in Oman
The Drive for Quality

Jointly prepared by The Ministry of Education and The World Bank
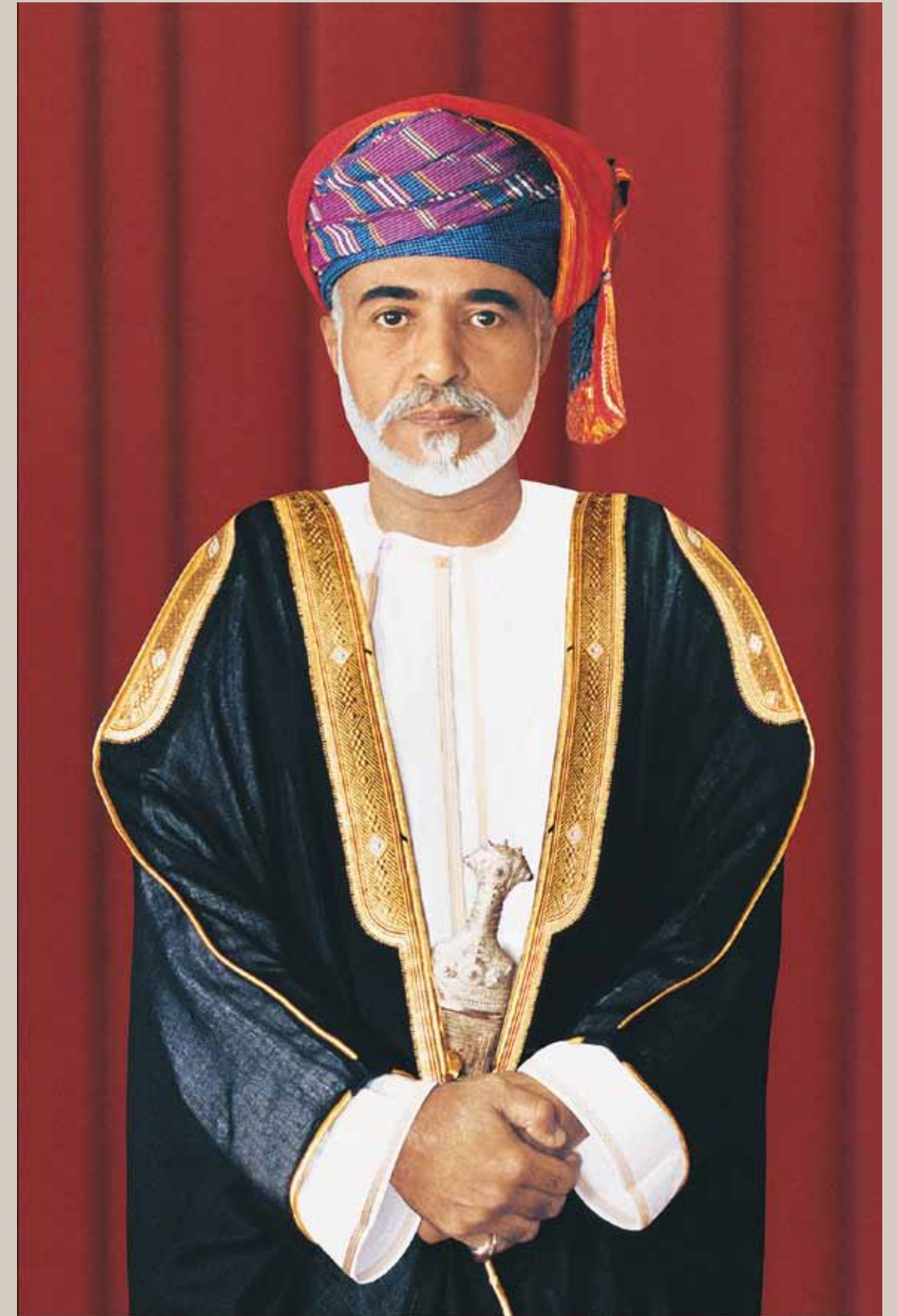
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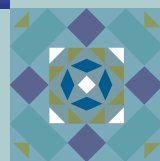The Ministry of Education and The World Bank

HIS MAJESTY
SULTAN QABOOS
BIN SAID

Foreword of
Her Excellency
the Minister of
Education

When His Majesty Sultan Qaboos ascended to the throne in 1970, one of the first commitments of his Government was to develop a public education system that would reach all parts of the country and would include all sections of society. At that time, there were only three schools in the whole of the Sultanate of Oman, all of them at the primary level and all for boys. To all intents and purposes, therefore, the country was starting with what was virtually a clean slate in terms of comprehensive educational provision.

With very low enrollment rates, the early focus of the Ministry of Education centered on issues related to access. The clear priorities of the country were to build the required educational infrastructure; to conduct a teacher recruitment program, mainly from abroad; and to develop a curriculum. The aims were to provide universal primary education, to expand provision to elementary and secondary education, and to promote gender equality.

Within a period of 40 years, the situation has been completely transformed. In 2008, there were nearly 1,300 schools in the country, providing education from grades 1 to 12 for over 600,000 students, 48 percent of whom were female. There were over 43,000 teachers, of which 89 percent were Omani. Education participation levels in Oman are now equal to or above those observed in other Middle East and North Africa (MENA) countries.
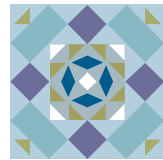
The last 40 years has been a period of unprecedented development in the Sultanate, not only in education, but also economically and socially. The country is pursuing a development plan that focuses on economic diversification as a way of reducing its dependency on the oil sector. In addition, globalization of the world economy has brought its own strains, challenges and opportunities.

These developments, coupled with the Government's policy to "Omanize" the workforce, have meant that the country's needs in terms of education have dramatically changed. To prosper in the global marketplace, the Sultanate requires an education system that can produce future employees who can engage in analytical thinking and problem solving and who are creative, adaptable and competitive.

In response to these demands, the attention of the Ministry of Education in recent years has shifted away from concerns about access (since 97 percent of basic school-age Omanis are enrolled in schooling) towards attempts to qualitatively improve and increase the relevance of the education system so as to prepare our students to meet the challenges of a knowledge-based economy. The Ministry of Education is presently engaged in a number of major reform initiatives across the whole system. A new basic education system designed to provide a unified program for grades 1 to 10 was introduced in 1998, and a new post-basic education system organized on a "core plus electives" model for grades 11 and 12 was introduced in 2007. The reforms emphasize changing teaching, learning and assessment methodologies, updating the curriculum, adding new resources, improving facilities, reducing class sizes and upgrading the qualifications and skills of teachers.

However, there are still persistent issues concerning the quality of student achievement that need to be addressed. The Government of Oman invited the World Bank to collaborate with the Ministry of Education to undertake a study of the school education sector to analyze the strengths and weaknesses of the present system and to provide recommendations for future improvement. On behalf of the Ministry of Education, I would like to thank the World Bank for its considerable efforts and expertise in producing such a comprehensive and valuable report. I would also like to express my appreciation to all those within the Ministry of Education whose assistance to the World Bank team helped to improve the relevance and quality of the report. I am confident that the report prove to be of considerable benefit to the Sultanate in helping it to improve its educational system in terms of access, equity, quality and efficiency. We are grateful for the continued fruitful collaboration and support offered by the World Bank and, as always, we are deeply appreciative of its contribution.
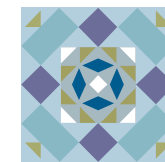
With the strong political will and commitment of His Majesty Sultan Qaboos and his Government to the country's educational development, we believe we can successfully prepare our citizens for the great challenges facing our nation through our mission to provide them all with an Education of Quality and Excellence. In light of this, the report will undoubtedly be instrumental in helping us to design future successful educational policies and strategies.

Madiha Ahmed Al-Shaibani

Minister of Education
Sultanate of Oman

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ACKNOWLEDGMENTS

ACRONYMS

BPM	Business Process Management
CA	Continuous assessment
CCG	Center for Career Guidance
CD	Compact disc
CDD	Curriculum Development Directorate
CED	Curriculum Evaluation Department
CRT	Criterion-referenced test
CV	Curriculum vitae
DG	Directorate General
DGEE	Directorate General for Educational Evaluation
ECCE	Early childhood care and education
ECE	Early childhood education
EFA	Education for All
EMIS	Education management information system
EU	European Union
FIEL	Finnish Institute of Educational Leadership
FTI	Fast Track Initiative
GCC	Gulf Cooperation Council
GCI	Global Competitiveness Index
GCSE	General Certificate of Secondary Education
GDP	Gross domestic product
GER	Gross enrollment ratio
GIR	Gross intake ratio
GNI	Gross national income
HEAC	Higher Education Admission Centre
HEI	Higher education institution
ICDL	International Computer Driving License
ICT	Information and communication technology
ILO	International Labour Organization
IT	Information technology
ITA	Information Technology Authority
KEI	Knowledge Economy Index
LFS	Labor Force Survey
MARA	Ministry of Awqaf and Religious Affairs
MENA	Middle East and North Africa
MLA	Monitoring Learning Achievement
MOE	Ministry of Education
MOF	Ministry of Finance
MOH	Ministry of Health

MOHE	Ministry of Higher Education
MOM	Ministry of Manpower
MONE	Ministry of National Economy
MOSD	Ministry of Social Development
MTBF	Medium-term budgetary framework
MTEF	Medium-term expenditure framework
NAEP	National Assessment of Educational Progress
NAPLAN	National Assessment Program for Literacy and Numeracy
NCE	National Council of Education
NCGC	National Career Guidance Center
NEC	National Education Commission
NFQ	National Framework of Qualifications
NQF	National qualifications framework
NRT	Norm-referenced test
OECD	Organisation for Economic Co-operation and Development
OQA	Omani Qualification Agency
OQF	Omani Qualification Framework
PETS	Public Expenditures Tracking Survey
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
RO	Omani Riyal
SBM	School-based Management
SCP	Stability and Convergence Programs
SME	Small and medium enterprises
SQU	Sultan Qaboos University
STR	Student-teacher ratio
TEAD	Tests and Examinations Administration Department
TEVT	Technical education and vocational training
TIMSS	Trends in International Mathematics and Science Study
TOSD	Technical Office for Studies and Development
UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
VTC	Vocational training center
WEI	World Education Indicators

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OVERVIEW

Since the 1970s, public education provision in Oman has flourished. Almost all Omani children of basic education age are now enrolled in schools, along with a high proportion (86 percent) of those of post-basic education age. The Government of Oman has turned its attention to ensuring that the achievements made to date are not only maintained but also further enhanced to achieve a high-quality, efficient and relevant education system. This report is the result of an education sector study undertaken collaboratively by the Government of Oman and the World Bank to analyze the strengths and weaknesses of the system and to provide recommendations to continue to improve education outcomes in Oman.

Drawing on evidence and information from a wide variety of sources, this report concentrates on pretertiary education and examines aspects of access to education, quality of learning, teachers and teaching methods, relevance of education to the labor market, and the financing and management of the education system. The report offers some policy recommendations on the way forward. A summary of the report's key findings follows.

KEY FINDINGS

Oman's recent successes in expanding education provision are impressive. School enrollments have grown from 900 in 1970 to over 600,000 in 2008/09, and repetition and dropout rates have decreased considerably. The result is that education participation levels in Oman are equal to or above other countries in the Middle East and North Africa (MENA). In particular, young women in Oman have high levels of tertiary education completion similar to levels in top performing countries, such as Singapore and South Korea. The Government has now moved its focus to the quality and relevance of teaching and learning. The results of the analysis from this education sector study confirm that the key challenge facing the education sector in Oman is to improve the quality of student learning outcomes and that enhancing quality should be the Government's main priority in education. Recent endeavors to improve quality include the introduction of revised systems of basic education (grades 1–10) and post-basic education (grades 11–12). While these initiatives are still new and their results will not be entirely apparent for several years, recent national and international assessments of learning achievement highlight the need for a concerted effort to improve quality.

There are many factors that influence the quality of educational outcomes. The Ministry of Education (MOE), in particular, has a central role to play in optimizing education system performance. There are two broad priorities suggested by this report: (1) creating a culture of high standards; and (2) developing the pedagogical capacity of the teaching force. These priorities, along with policy recommendations, are outlined as follows.

Establish a Culture of High Standards

Current Situation:

From young children's work in the classroom to teachers and administrators and beyond schools to the home environment, high standards of performance and learning should be expected. A disconnect was observed between the perception of learning achievement among students, teachers and parents and the students' actual learning achievement. National and international assessments of learning show that students are performing below the Government's expectations and below many countries in the world. In particular, the underachievement of boys is striking: of all 48 participating countries in the 2007 Trends in International Mathematics and Science Study (TIMSS), Oman had the largest gender difference with boys scoring significantly lower than girls in all content areas. The amount of actual time spent on learning activities in Oman's public schools is less than in many other countries. School graduates lack some critical skills, particularly in English, which necessitates a foundation year in higher education institutions. In addition, employers express concerns about the job readiness of graduates. For Oman's education system to continue to improve, standards need to be raised and measures put in place to ensure that these new standards are met.

Specific Areas to Address:

- To increase the time students spend on meaningful learning tasks, it will be important to meet the official target of 180 days in the school year, which is close to international norms. Currently days are lost due to examinations, special events and other closures. Reducing the grade 12 examinations to one session at the end of the year and keeping classes for grades 1–11 operating as usual during these examinations would help to meet the target. In addition, schools could be asked to extend the term to make up days lost for festivals or other reasons. Furthermore, teachers should be encouraged to prioritize the curriculum over other activities.

- Setting clear and realistic learning targets for each grade and publicizing these widely to teachers, students and parents can help to raise the quality of learning. Teachers should be encouraged to monitor learning regularly and give realistic feedback to students and parents. The development of higher-order thinking skills should be encouraged across the grades with increasing emphasis on higher-order thinking in the examinations. More use could be made of examination results to identify common areas of difficulties in each subject and to adapt in-service teacher training to improve teaching in these areas.

- The significant underachievement of boys should be examined and addressed systematically. As a first step, parents should be made more aware of the gender gap and encouraged to set higher expectations for boys. As key issues affecting boys' low performance are not well understood, a comprehensive empirical study should be conducted to identify factors and to inform an action plan to address them.

- There are several areas in which school curricula could be improved. In particular, given that a lack of English language proficiency is one of the main reasons students require a foundation year at most public and private universities, reviewing the English curriculum and teaching methods may be necessary. In addition, given the objective evidence suggesting that achievement levels in mathematics and science are low, a curricula review in these areas is warranted. Furthermore, "soft skills" development, such as team work, public speaking, problem solving, critical thinking and a strong work ethic, were seen as lacking by some employers. A reduction in the number of subjects that post-basic students are required to take may be necessary to ensure a deeper understanding of concepts. Since few staff at the MOE's Curriculum Development Directorate (CDD) have benefited from training in curriculum development or evaluation, a professional development program in these areas should be undertaken.

Develop Strong Pedagogical Skills

Current Situation:

Of all the factors affecting student learning that can potentially be influenced by public policy, teaching quality is the single most important one. An effective teaching force with strong pedagogical skills is the key to increasing education quality. Oman has a large teaching force with sufficient qualifications, but new teachers' skills are not developed adequately in preservice teacher training due to the lack of emphasis on pedagogical skills and the limited use of practical training. Currently teacher trainers do not have sufficient classroom experience or practical teaching skills. In-service training should be more practical and responsive to teachers' needs. In school, teachers' work needs to be refocused with more time devoted to teaching and less to reporting and administrative requirements.

Specific Areas to Address:

- Teacher education courses are not well matched to the curriculum that new teachers are expected to teach or to teaching realities in Omani classrooms. In addition, courses lack a suitable emphasis on practical training, and the teacher trainers tend to have limited practical classroom experience themselves. Regulating teacher education courses would help to ensure that pedagogical skills are prioritized suitably and that newly qualified teachers are prepared to teach the curriculum.

- Teachers need to be focused on the quality of teaching and student learning. Even though teaching loads are low in Oman compared to other countries, teachers cite an overload of administrative tasks, such as reporting and recording, which takes their focus away from classroom performance. Rebalancing teachers' work to prioritize teaching quality and to reduce paperwork may be necessary. In-service training should focus on teaching skills for quality learning and teacher-peer activities should be supported, such as the formation of regional teacher subject associations.

- Ensuring an adequate supply of Omani teachers by forecasting need and supporting domestic provision will be necessary in the long term. The current teacher oversupply, which has contributed to the closure of some teacher education courses, has left little domestic capacity to train teachers for the first cycle of basic education. This poses a risk for the future and may increase reliance on non-Omani teachers. There are currently imbalances across subject specializations with a teacher oversupply in some areas and an undersupply in others. This unsatisfactory situation can be addressed by requiring teacher education institutions to be guided by long-term national needs as they select students for each specialization.

- Retaining teachers in remote areas is a challenge in Oman. Remote areas have a greater proportion of non-Omani teachers and significantly more turn over than urban areas. Providing an appropriate additional allowance for teachers in carefully targeted remote areas, extending the duration of stay in a school before a transfer can be requested, and giving preference to students from remote areas for teacher training may be options to consider.

Other Challenges

In addition there are a number of specific areas in which access to education should be addressed in order to reach the Education for All (EFA) goals and contribute to education quality enhancement:

■   Expanding the provision of publicly financed early childhood education (ECE) should be a priority given the current low participation rate and the substantial evidence of ECE benefits, particularly for school readiness. Private preschools, which have become popular in Oman and grown in number, are only accessible to families who can afford to pay for them. Initially in public ECE expansion, areas of poor educational performance should be prioritized and encouragement of private provision of ECE continued.

■   Oman currently lacks adequate mechanisms for identifying and evaluating children with special needs, and it is likely that the true requirement for special needs education provision is greater than what is currently available. A national strategy for special needs education should be developed, involving all of the responsible ministries. Reliable data on the demand for educational facilities for children with special needs will be essential. Teachers who are responsible for integrating children with special needs into the classroom should receive appropriate training.

■   While adult literacy rates have improved significantly in Oman, there is a need to review the literacy program's curriculum and delivery methods and to conduct an assessment of the literacy education needs of potential learners, particularly males who are currently under-represented in the programs. The quality of the literacy program could be enhanced by providing more centers, improving the curriculum and supporting materials, and developing a policy to attract, train and retain suitable teachers.

These recommendations have management and financial implications. In particular, reaching the goal of improved education quality will require all relevant ministries to unite their efforts and to plan together, for example through the development of a national strategy for education. Guiding the planning of the education sector could be the responsibility of a high-level body established with representation from the relevant ministries, including the MOE, the Ministry of Higher Education (MOHE), the Ministry of Manpower (MOM), the Ministry of Social Development (MOSD), the Ministry of Health (MOH) and the Ministry of Finance (MOF), and other stakeholders including the private sector. Within the MOE, a management training program could be established to enhance the leadership and planning skills of senior officials.

Resources should be shifted toward quality-related inputs and to support teaching and learning initiatives. This resource shift could be achieved by reviewing the remuneration system for teaching and administrative staff. In particular, the review should focus on student-teacher and teacher-administrator ratios, which are currently low. Consideration could be given to the use of allowances to link remuneration to performance or acceptance of hardship posts rather than to seniority alone. Other management and finance initiatives aimed at improving quality include (1) granting more financial autonomy and management responsibility to the governorates, regions and schools to make decisions more relevant to local contexts; (2) conducting a tracking study of public finance for education to identify possible inefficiencies in resource allocation; and (3) ensuring that the data required to make sound informed policy decisions in education are produced in a timely manner and are valid and reliable.

This report acknowledges the tremendous achievements that Oman has made in education provision to date, and the capacity and political will that has facilitated the remarkable accomplishments. The challenge of improving education quality is not insurmountable for Oman, but it will require a shared vision, careful planning, focused use of resources and collaborative work involving all relevant stakeholders.

CHAPTER 1

DEMOGRAPHIC, ECONOMIC AND SOCIAL CONTEXT

Under the leadership of His Majesty Sultan Qaboos bin Said, Oman's development over the past 40 years has been striking. The economy has been fundamentally transformed through a series of development plans, including the current 8th Five-Year Development Plan 2011–2015. Maintaining the momentum of this remarkable economic growth and increasing Oman's competitiveness internationally will require further development of Oman's human capital. This development is a high national priority in which education plays a central role. Providing background to this study on the education sector, this chapter highlights key issues in Oman's demographic, economic, social and education context.

1.1   DEMOGRAPHIC CONTEXT

Oman has a large proportion of youth but is undergoing a demographic transition.

In mid-2009 the country's total population was 3.2 million, a significant change from 2.9 million in 2008 due to a 28 percent increase in the non-Omani population (table 1.1). Approximately 36 percent of the total population is non-Omani nationals. Oman has a high proportion of young people with approximately 27 percent of the total population under the age of 20 and 48 percent of Omani nationals under age 20. In the coming decades this is likely to change, however, because the crude birth rate per thousand for Omani nationals dropped from 44.7 in 1990 to 24.0 in 2004, although it increased to 29.5 in 2009 (table 1.2). The effect of this fall in birth rate can be seen in the shape of the population composition in figure 1.1 by the greater number of Omanis in the 15–19 age group than in the younger age groups of 0–4, 5–9 or 10–14 (MONE 2010).

Table 1.1
Population of Oman, 1998–2009

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Omani Population (000s)	1,685	1,729	1,778	1,826	1,870	1,782	1,803	1,843	1,884	1,923	1,967	2,018
Annual % increase		2.6	2.8	2.7	2.4	-4.7	1.2	2.2	2.2	2.1	2.3	2.6
Non-Omani Population (000s)	602	596	624	652	668	559	613	666	693	820	900	1,156
Annual % increase		-1.0	4.7	4.5	2.5	-16.3	9.7	8.6	4.1	18.3	9.8	28.4
Total Population (000s)	2,287	2,325	2,402	2,478	2,538	2,341	2,416	2,509	2,577	2,743	2,867	3,174
Annual % increase		1.7	3.3	3.2	2.4	-7.8	3.2	3.8	2.7	6.4	4.5	10.7

Source: MONE 2010.

Table 1.2
Crude Birth Rates, Omani Nationals, 1990–2008 *(per thousand)*

	1990	1995	2000	2003	2004	2005	2006	2007	2008	2009
Crude Birth Rate	44.7	34	32.6	24.4	24	24.8	24.2	25.0	27.3	29.5

Source: MONE 2010.

The demographic composition of Omani nationals is different from that of non-Omanis.

The non-Omani population is concentrated around the 25–39 age range and is mostly male (82 percent male in 2009), a reflection of the fact that the majority of non-Omanis are male workers who are single or have families outside of Oman (figure 1.1). The non-Omani population has a lower proportion of young people than the Omani population: only 8 percent of non-Omanis are under 20 years of age compared to 48 percent of Omanis (MONE 2010).

Figure 1.1

Composition of Oman's Population by Age Group, Gender and Nationality, 2009 *(thousands)*
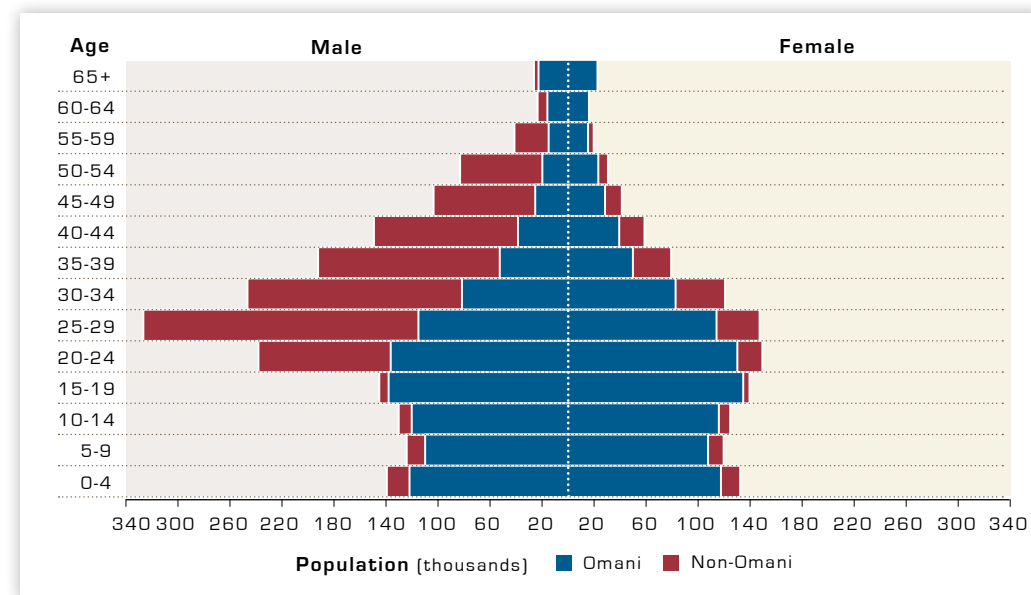
Source: MONE 2010.

1.2 MACROECONOMIC AND SOCIAL CONTEXT

Over the last 40 years, Oman has pursued a diversified industrial development policy.
Oman is classified by the World Bank as a high-income country with a gross national income (GNI) per capita of US$17,890 in 2008.[1] Between 2000 and 2009, the real gross domestic product (GDP) growth rate averaged 4.6 percent per year; the growth has been reflected in an increase in per capita GDP in real terms (appendix table A.1).[2] For many years, government revenue depended almost exclusively on oil receipts. At present Oman is actively pursuing a development plan that focuses on diversification, industrialization and privatization. The portion of petroleum and natural gas in GDP, however, is still high at 40.6 percent in 2009 (MONE 2010). The Government of Oman hopes to reduce the oil sector's contribution to GDP to 10 percent by 2020 (MONE 2007).

The government's education emphasis is reflected in the high proportion of civil ministries' resources allocated to the sector.
To keep pace with technological advancements and to attain international competitiveness, the development and upgrading of human resources is a high priority on the country's development agenda, and education is central to this national priority. The education sector received 37.2 percent of civil ministries' recurrent expenditure or 17.5 percent of total government recurrent expenditure (appendix table A.2 and table 7.1).[3]

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1 World Bank EdStats/DDP database. GNI measures the total domestic and foreign income claimed by the residents of the economy. It comprises GDP plus net factor income from abroad, which is the income residents receive from abroad for factor services (labor and capital) less similar payments made to nonresidents who contributed to the domestic production. GNI in U.S. dollars is calculated according to the World Bank Atlas method of conversion from national currency to U.S. dollar terms (http://go.worldbank.org/WG51XXDWB0).

2 Further details on economic indicators may be examined in appendix table A.1.

3 The education sector includes the Ministry of Education, the Ministry of Higher Education, the Sultan Qaboos University and the Ministry of Manpower (which is responsible for technical and vocational education and training).

Non-Omani nationals dominate Oman's private sector despite the Omanization effort.
Youth unemployment is an increasing concern. Among public sector employees in 2009, 86 percent were Omani nationals up from 69 percent in 1995 (MONE 2010). However, while the proportion of Omanis in the private sector increased from 4 percent in 1995 to 19 percent in 2005, it decreased to 15 percent in 2009. The overall size of the public and private sectors grew in recent years: the number of public sector employees increased by 44 percent between 2000 and 2008, and private sector employees increased by 88 percent.[4] Despite these increases, unemployment, particularly youth unemployment, is a growing concern. Oman faces difficulty in providing jobs for the more than 30,000 young Omanis entering the job market each year (Economist Intelligent Unit 2008).

Oman is performing relatively well on a number of key human development indicators.
Oman ranked 56th among 182 countries on the Human Development Index (UNDP 2009), a composite index measuring average achievement in three basic dimensions of human development.[5] The infant mortality rate in Oman is 10.6 per 1,000 live births, a figure that is lower than most other countries in the Middle East and North Africa (MENA) region but slightly higher than many OECD countries, as well as Singapore (2.4) and South Korea (4.4).

In the past few decades, Oman has also made remarkable progress in adult literacy.
In 1970, only 33 percent of Oman's adults were literate (MOE 2006). By 1990, the adult literacy rate had reached 55 percent, and the average between 2000 and 2007 was 84 percent (Economist Intelligent Unit 2008 and UNESCO 2010). Oman's adult literacy rate, however, is still lower than several other countries in the region.[6]

1.3 EDUCATION CONTEXT

Oman's education provision is governed by a legal framework based on directives and decrees of His Majesty Sultan Qaboos and basic laws of the state. The state endeavors to make education accessible to all and aims to use education "to raise and develop general cultural standards, promote scientific thought, kindle the spirit of research, build a generation that takes pride in its nation's heritage, and preserves its achievements" (MOE 2006, p.34). Free access to school is provided for all boys and girls, but education is not compulsory in Oman.

The Ministry of Education (MOE) has formal responsibility for education system administration in grades 1–12.
The MOE has more than 5,000 employees about two-thirds of whom work in regional directorates. At the central level, the minister is supported by three undersecretaries who manage (1) administration and financial affairs, (2) education and curricula, and (3) planning and human resources development. Further details of MOE's organizational structure are in appendix figure B.1. MOE responsibilities include policy development for state schools to grade 12, system management at the national level and in the 11 educational regions, curriculum development, textbook provision, assessment, and supervision of teachers, nonteaching staff and schools. Each region has a Directorate General whose responsibilities include implementation of MOE policies, preparing plans and budgets, allocation of teachers and supervisors, and monitoring teacher and administrative staff performance. The central MOE also has

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4 The number of public sector employees increased from 110,498 in 2000 to 159,538 in 2009 and the number of private sector employees increased from 550,671 in 2000 to 1,032,560 in 2008 (MONE 2010).

5 The Human Development Index includes the following measures: (1) a long healthy life (life expectancy at birth); (2) access to knowledge (adult literacy rate and gross enrollment ratio); and (3) a decent standard of living (GDP per capita).

6 Adult literacy rates (for 15+ year olds) were 87 percent in Oman (2008), 91 percent in Bahrain (2008), 92 percent in Jordan (2007), 94 percent in Kuwait (2007), 90 percent in Lebanon (2007), 93 percent in Qatar (2007), 90 percent in the United Arab Emirates (2005) and 94 percent in the West Bank and Gaza (2008) (World Bank, EdStats December 2010).

responsibility for overseeing education quality in private and international schools. Additional ministries have responsibility for other areas of education policy: Ministry of Manpower (MOM) for technical education and vocational training (TEVT) and Ministry of Social Development (MOSD) for early childhood education (ECE).

A new basic education model organized into cycle one (grades 1–4) and cycle two (grades 5–10) was introduced in 1998/99.

The basic education system is replacing the general education system (elementary, preparatory and the first grade of secondary education). It is designed to provide a unified grade 1–10 program for all school-age children to improve learning outcomes through the development of new curricula and textbooks. Currently the two systems are operating in parallel as the new basic education system is being implemented gradually. In the 1998/99 academic year, basic education was first introduced in 17 schools. By 2005/06, 507 schools were involved. By the end of 2010, all children in grades 1–4 will be studying under the new system. The first basic education graduates entered post-basic education in 2007/08. Figure 1.2 shows the education system structure from ECE to higher education, including TEVT, adult education and special education.

A new post-basic education system (grades 11 and 12) has been implemented since 2007/08.

The two-year post-basic education system has gradually replaced the two years of secondary education under the general education system. The post-basic education curriculum is organized on a "core plus electives" model, and students are given an element of choice. During these two years, students' school experience is expected to prepare them for life after school either for higher education or for entry into the labor market. To this end, all students are required to complete a graduation project.
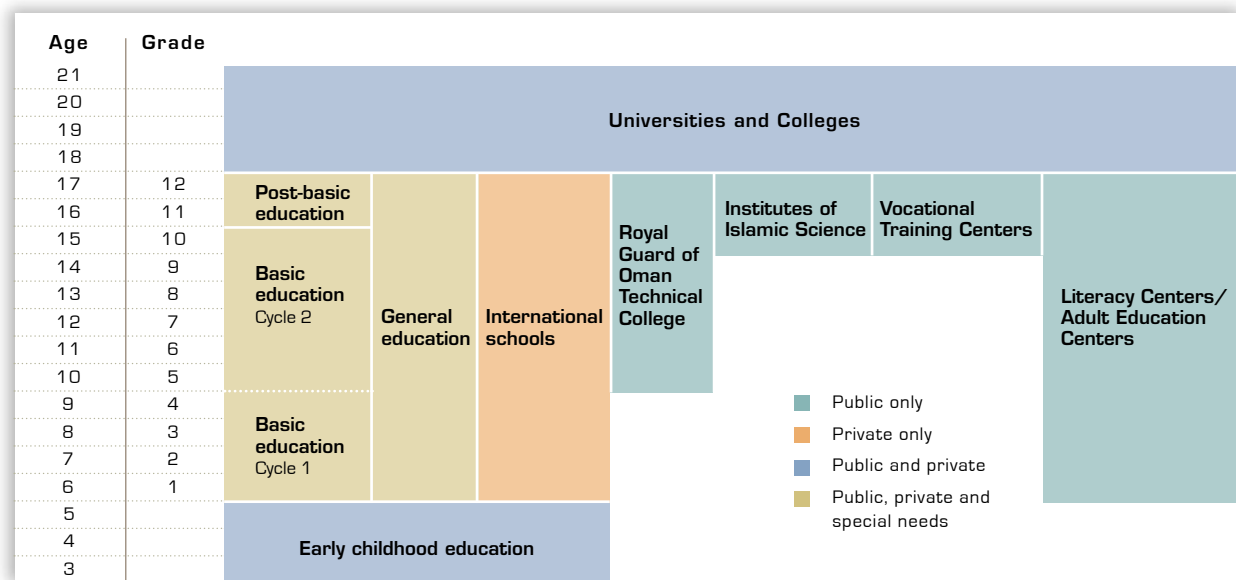
The education system has experienced many reform efforts in recent years.

Recent reforms have focused mainly on basic and post-basic schools. They have included such features as a student-centered approach to teaching and learning; introduction of information technology (IT) and life skills; emphasis on real-life applications in the curriculum; continuous assessment; and reduction of class size. Added resources have included learning resource centers in schools; computer labs in cycle two schools (grades 5–10); halls for curricular activities and for environment life skills; stores, canteens, and health rooms; and air conditioners for classrooms. The MOE has also raised initial teacher qualification standards. A school-based management process was introduced to give schools and their employees a greater role in planning, implementation and self management (MOE 2007a). A program to evaluate overall school performance has been in operation for some years.

The MOE recognized that the amount of school time was inadequate to prepare students for the globally competitive economy.

In response, it increased to 180 days the official number of "instruction days" per year for basic and general education schools, and it lengthened the school day from four to over six hours for basic and general education. In theory, this increase (68 percent) in instruction time would bring Omani students in line with standards in many developed countries.

Since the 1970s, Oman has made remarkable achievements in providing students with access to schools and to trained teachers.

From a total of three schools for just over 900 male students in 1970 to now, 40 years later, the country has 1,283 schools and over 600,000 students (figure 1.3). Universal basic education has been virtually achieved, and the secondary education gross enrollment ratio (GER) is high compared to many countries. The Government appreciates that, having achieved highly impressive school access results, its efforts must now turn to ensuring that students achieve satisfactory levels of learning — a necessary condition for economic and personal development.

Figure 1.2

Structure of the Oman Education System

Source: MOE Statistical Department.

Notes: The ages are approximate and do not necessarily correspond to grades. ECE institutions include private schools, classrooms in public schools, international schools, Ministry of Social Development Kindergarten, Royal Oman Police Kindergarten, Royal Armed Houses, and Qur'an Schools.

Figure 1.3

Number of Student Enrollments (Grades 1–12), 1970/71 to 2008/09
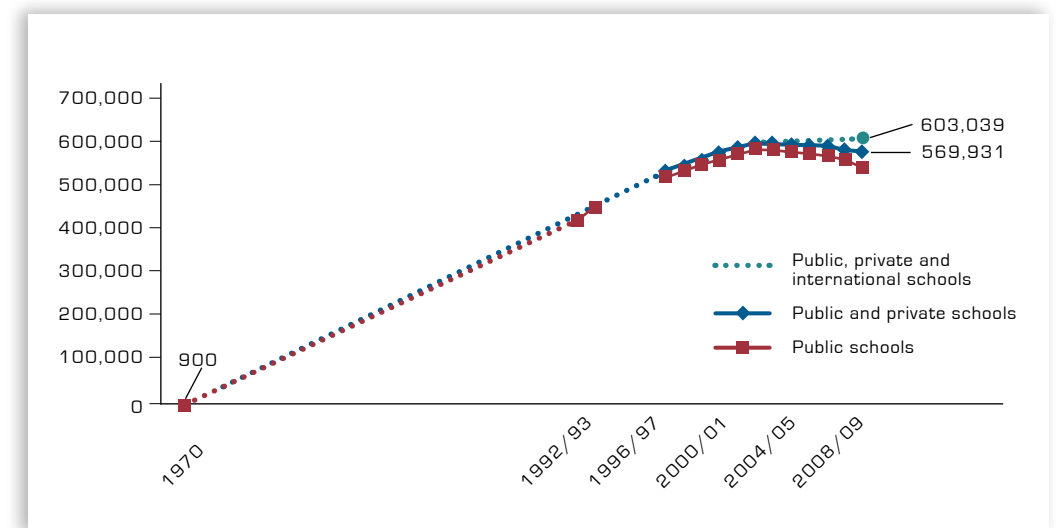
Source: MOE Statistical Department.

Notes: Data for international schools are only available for 2008/09.

CHAPTER 2

The following chapters of the report analyze the major achievements and key challenges of Oman's education sector. The report focuses mainly on pretertiary education and includes analyses of education access and student flow; student learning quality; teaching and nonteaching factors that may have a bearing on learning levels; education system relevance from an economic perspective; current system finance; and overall education system management. Recommendations, many of which are based on international experience, have been added to the chapters to guide further advancement of the education sector.

ACCESS AND EFFICIENCY
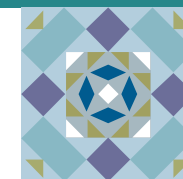
Oman has successfully made formal schooling available to its young population. This chapter analyzes the country's achievements in student enrollment, education coverage, student flow, and equal opportunities for education access. It examines whether the government's approach to education has been successful in achieving the Education for All (EFA) goals and highlights areas that need more focus, including early childhood education (ECE), students with special needs and adult literacy. Oman's EFA commitment includes six goals agreed upon at the World Education Forum in Dakar, Senegal, in April 2000, which are to be reached by 2015 (appendix C). The chapter analyzes Oman's achievements in the first five goals (the last goal is discussed in chapter 3), and discusses the steps that remain for Oman on the path to EFA.

2.1   ACHIEVEMENTS IN REACHING THE EFA GOALS

Student Enrollment

Education access in Oman has increased remarkably over the past four decades.
From 900 students in 1970, enrollments rose to over 600,000 in 2008/09 (table 2.1), representing a rapid expansion of education services. Regional access has been aided by the building of additional schools in rural areas. There has been a reduction in "double-shift" schools from 37 percent in 1995 to 10 percent in 2008/09. The rate of enrollment increase has gradually declined since 2002/03 (figure 2.1), which is consistent with national demographic changes (chapter 1).

Table 2.1

Number of Schools and Students by Type of School, 2008/09

	Type of school				
	Public	Private	Other*	International	Total
Number of Schools	1,047	200	3	33	1,283
Number of Students	540,332	28,999	600	33,108	603,039
Basic education 1st cycle (grades 1-4)	156,667	19,244	-	14,732	190,643
Basic education 2nd cycle (grades 5-10)	288,273	8,328	365	15,694	312,660
Post-basic education (grades 11-12)	95,392	1,427	235	2,682	99,736

Source: MOE 2009a; MOE Statistical Department.

Note: *Other schools include the Sultan Qaboos Institutes for Islamic Studies and the Royal Guard of Oman Technical College.

Figure 2.1

Number of Grade 1–12 Enrollments, 1997/98 to 2008/09
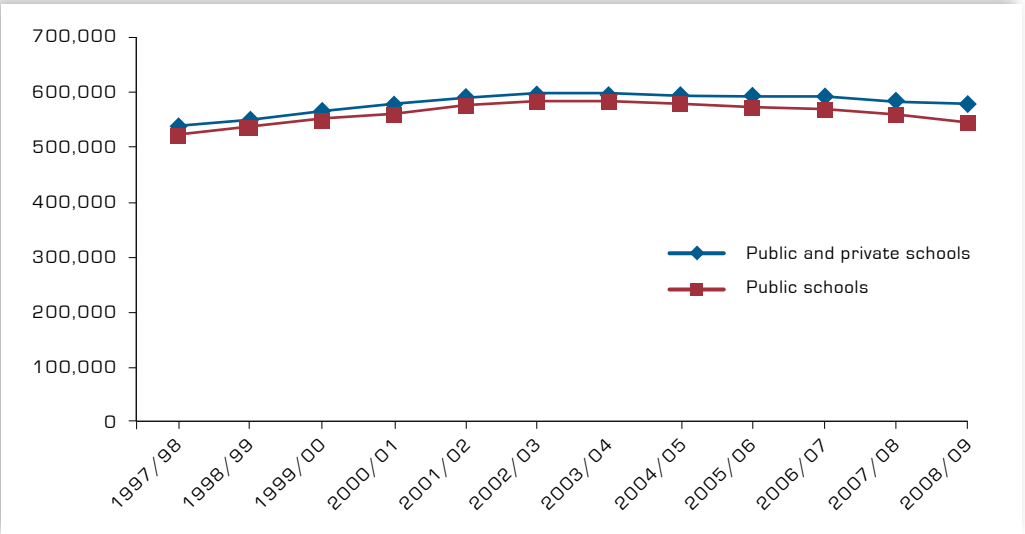
Source: MOE 2009a; MOE Statistical Department.

Note: For comparison purposes, this figure does not include international schools, which accounted for 5 percent of all grade 1-12 enrollments in 2008/09. Data for international schools are not available prior to 2008/09.

For Omani nationals, basic education coverage of the population is almost complete and post-basic education coverage is high and increasing.

Currently it is not possible to calculate education coverage indicators for the whole of Oman due to problems with non-Omani population estimates (discussed later in this chapter). Therefore, indicators presented here are for Omani nationals only. In 2008/09 the gross enrollment ratio (GER) for Omani nationals was 97 percent for the first cycle and 98 percent for the second cycle of basic education (table 2.2).[7] The GER for post-basic education increased from 82 percent in 2006/07 to 86 percent in 2008/09.

Table 2.2

Gross Enrollment Ratios (GER) for Omani Nationals by Level, 2006/07 to 2008/09 *(%)*

	2006/07	2007/08	2008/09
Basic education 1st cycle (grades 1-4)	94	95	97
Basic education 2nd cycle (grades 5-10)	98	98	98
Post-basic education (grades 11-12)	82	84	86

Source: Authors, based on data from the MOE Statistical Department.

GERs for Omani nationals are high compared to middle-income countries but still lag behind the leading high-income countries in upper secondary education.

For this comparison the international classification for education systems was used: students in grades 1–6 are classified as primary, in grades 7–9 as lower secondary and in grades 10–12 as upper secondary.[8] The upper secondary GER (grades 10–12 in Oman) was 90 percent for Omanis, well above the average of 54 percent for middle-income countries but below the average of 99 percent for high-income countries (appendix D). Compared with other Gulf Cooperation Council (GCC) countries, Oman's upper secondary GER is higher than that of Qatar, Kuwait and the United Arab Emirates and close to that of Saudi Arabia and Bahrain. It should be noted that these figures are not directly comparable because the GERs for other countries include all nationalities, while the GERs for Oman are limited to Omani nationals only.

Student Flow through the System

Entry to grade 1 is almost universal for Omani children, and retention from grade 1–12 has improved for both Omani and non-Omani students.

In 2008/09 the gross intake ratio (GIR) was 98 percent.[9] Retention rates throughout the school grades have increased substantially over the past decade. For Omani and non-Omani students together, survival to grade 12 was 86 percent in 2008/09, up from 64 percent in 1998/99 (figure 2.2).[10]

Figure 2.2

Survival Rates, 1997/98 to 2008/09 *(%)*
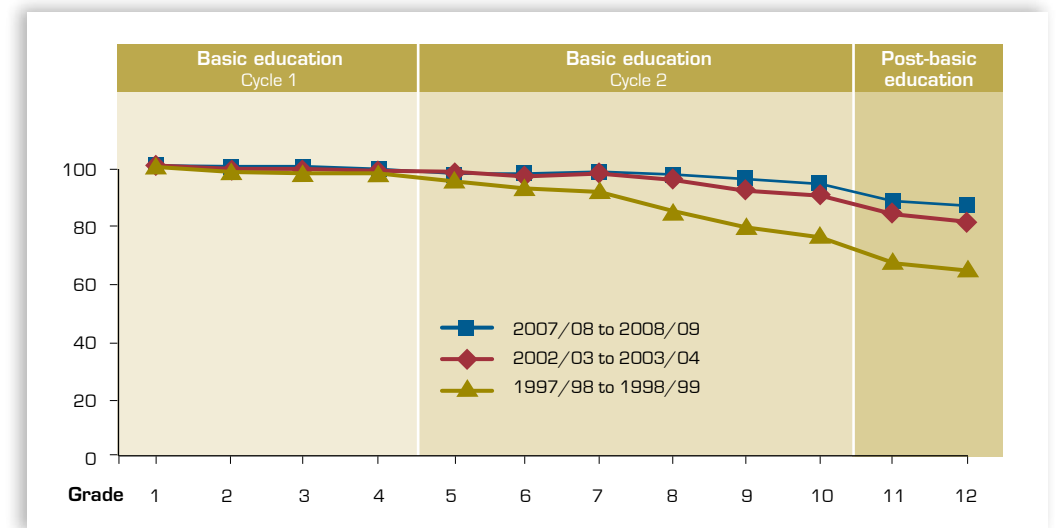
Source: Authors, based on data from MOE Statistical Department.

Note: Survival rates with repetition are shown, calculated using the UNESCO Institute for Statistics reconstructed cohort method. The data used to calculate the survival rates include Omanis and non-Omanis in public and private schools.

In recent years following concerted efforts by the Ministry of Education (MOE), repetition rates have decreased considerably and dropout rates are low.

High repetition rates indicate a lack of efficiency in the education system. The MOE initiated a number of policy changes to reduce repetition and dropout. New pass/fail regulations stipulate all grades 1–4 students should progress from one grade to the next. In grades 5–11, Attainment Follow-up Committees should identify and support students at risk of falling behind in their school work and, at the end of the year, should decide whether retention or progression is in the students' best interests. These initiatives have reduced grade repetition to zero for grades 1–4 (figure 2.3). For grades 5–12, repetition rates range from 1 to 6 percent with the highest rates in grades 5 and 10 (a repetition rate of 5–6 percent for males and females). Dropout rates are now low at 2 percent or less with the exception of grade 10, the final grade before the transition to post-basic education, where rates were 7 percent for males and 5 percent for females.[11]

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7   GERs for Omanis are calculated as the total number of Omani enrollments (in public, private and other schools) divided by the Omani population of the official age for the grades. Omanis are not permitted to enroll in international schools unless they have obtained special permission.

8   International Standard Classification of Education (ISCED) 1997 (UNESCO 2006a).

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9   GIRs for Omanis are calculated as the total number of new entrants to grade 1 (in public, private and other schools) as a percentage of the Omani population of official age for the grade.

10   Survival rates were derived using the UNESCO Institute for Statistics (UIS) reconstructed cohort method, which includes those who repeat grades. The reconstructed cohort method uses data from two consecutive years to estimate rates of progression, repetition and drop out.

11   Authors' calculations based on data from the MOE Statistical Department.

Figure 2.3

Repetition Rates by Grade in Public Schools, 1998/99 and 2008/09 *(%)*
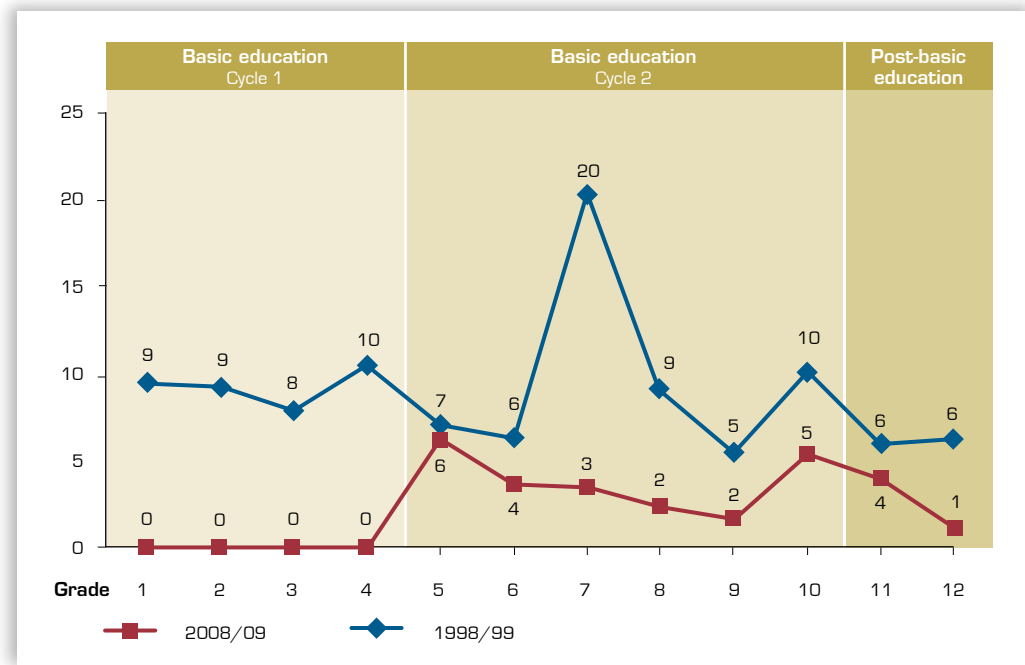
Source: Authors' calculations based on data from the MOE Statistical Department.

Note: Repetition rates are calculated as the number of repeaters in 2008/09 and 1998/99 as a percentage of the numbers enrolled in the previous grade in 2007/08 and 1997/98, respectively. In 1998/99, grade 7 was the first grade of the preparatory level, which was commonly repeated (repetition rate of 20 percent).

Transition rates between education levels have improved considerably, particularly for males.

Almost all grade 4 students in 2007/08 advanced to grade 5 (start of the second cycle of basic education) in 2008/09.[12] This is a considerably higher transition rate than ten years earlier (table 2.3). The transition rate from the end of basic education to post-basic education was 89 percent for both males and females in 2008/09. This represents a substantial increase for males over the 73 percent rate recorded for 1998/99.

Table 2.3

Transition Rates, 2008/09 *(%)*

	Males		Females		All	
	1998/99	2008/09	1998/99	2008/09	1998/99	2008/09
Basic education 1st to 2nd cycle (grades 4 to 5)	84	97	90	98	87	98
Basic education to post-basic education (grades 10 to 11)	73	89	87	89	80	89

Source: Authors' calculations based on data from the MOE Statistical Department.

Note: Includes Omanis and non-Omanis in public and private schools only (but not international or other schools). Transition rates are calculated as the number of new entrants to grade 5 (or 11) in 2008/09 as a percentage of the number of enrollments in grade 4 (or 10) in 2007/08.

12   Transition rates are calculated as the number of new entrants to a grade as a percentage of the total number of enrollments in the previous grade in the previous year.

After completing basic education (grade 10), the vast majority of students continue on to post-basic education; a small but increasing number enters technical education and vocational training (TEVT).

While 89 percent of grade 10 students in 2007/08 went on to grade 11 of post-basic education in 2008/09, 5 percent repeated grade 10, and the remaining 6 percent either joined vocational training centers (VTCs) or entered the labor force as employed or seeking employment (figure 2.4). The number of students enrolled in VTCs increased from 1,933 in 2005/06 to 2,929 in 2008/09, representing approximately 3 percent of the Omani population aged 16–17 (2 percent in 2005/06).

Figure 2.4

Student Flow from Grades 10 and 12, 2007/08 to 2008/09
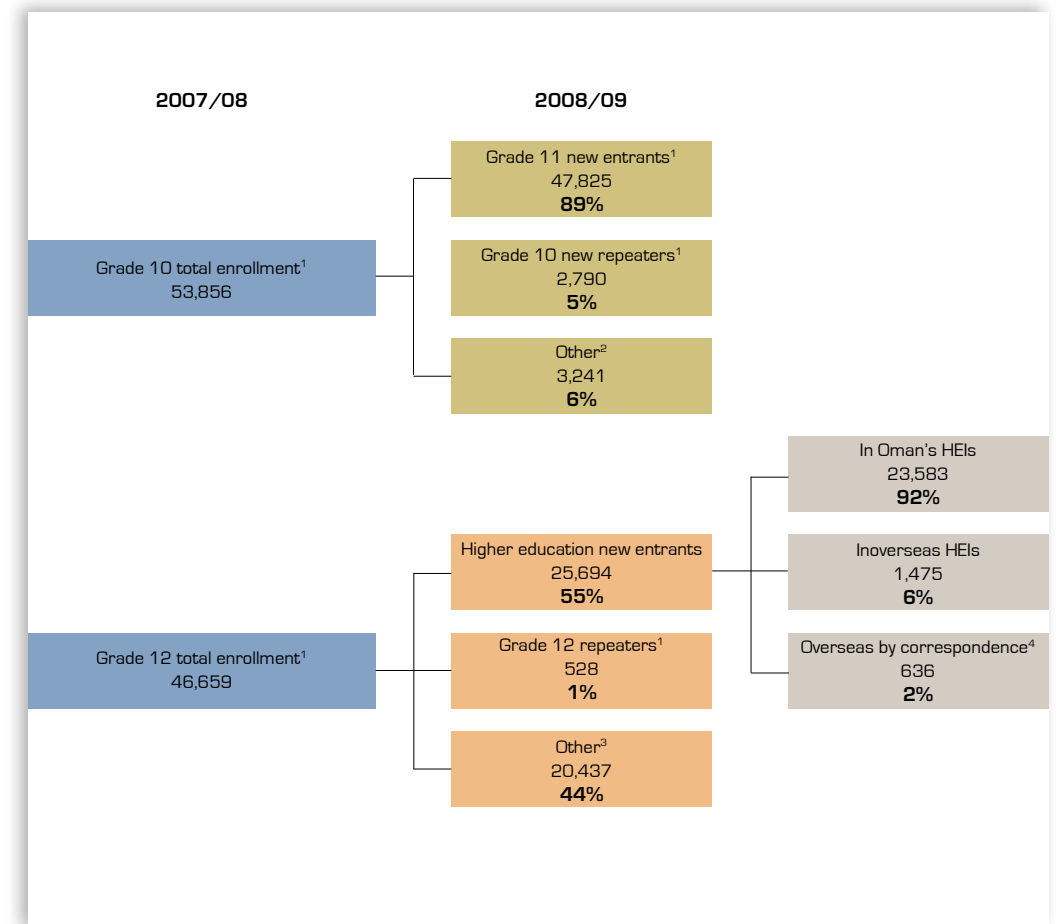
Source: Authors' calculations based on data from the MOE Statistical Department and MOHE 2009.

Notes:
1   Includes Omanis and non-Omanis in public and private schools but not in international or other schools.
2   Other includes labor force (employed and unemployed) and VTC enrollments (a small number).
3   Other includes labor force (employed and unemployed), military service and VTC enrollments (a small number).
4   The number of new entrants studying overseas by correspondence has been estimated due to lack of data. The estimate (636) was calculated by taking all enrollments studying overseas by correspondence and applying the percentage of new entrants in all enrollments in Oman's HEIs (28 percent). This assumes that the percentage of new entrants among all enrollments in Oman's HEIs is the same for overseas correspondence students.

More than half of grade 12 leavers (55 percent) joined institutions of higher education in 2008/09.

The higher education institutions (HEI) in Oman include the Sultan Qaboos University (SQU), colleges of applied sciences, colleges of technology, institutes of health, Institute of Shari'a Sciences, College of Banking and Financial Studies, and private universities and colleges. In addition, a number of students attend overseas universities or stay in Oman and study at overseas universities by correspondence. Figure 2.4 shows that 1 percent of grade 12 leavers in 2007/08 repeated grade 12 in 2008/09. The remaining 44 percent entered the labor force (either employed or seeking employment), joined VTCs (a small number) or the military service (also a small number). It is currently not possible to determine the number of grade 12 leavers who are employed or unemployed. A study of grade 12 leavers' destinations would allow a more detailed analysis of the pathways of students who do not enter higher education.

There has been a dramatic increase in the number of students enrolled in higher education institutions.

The student enrollment number in Oman's HEIs (81,810) increased tenfold between 2003/04 and 2008/09 (table 2.4). Adding the students studying abroad and those studying abroad by correspondence, the 2008/09 total was 94,217. This total enrollment, which is used to calculate the tertiary-level GER, represents 35 percent of the 18–22 year-old population.[13] With the increase in post-basic education (grade 12) graduates, demand for places in HEIs has intensified. The demand is being met by the Sultan Qaboos University (opened in 1986) and private universities (operating since 1994 and accounting for about one-third of enrollments), as well as other institutions (table 2.4). In 2008/09, females accounted for 51 percent of enrollments in Oman's HEIs, a more gender-balanced ratio than 60 percent five years earlier and a reflection of the introduction of gender quotas (table 2.4). Females accounted for 47 percent of students studying in HEIs abroad and for 22 percent of those studying abroad by correspondence (enrolled in overseas universities but living in Oman).

At 35 percent, Oman's tertiary GER is higher than many Middle East and North African countries.

Figure 2.5 shows that there is wide variation in tertiary GERs in the selected countries. Oman's tertiary GER is higher than the other GCC countries, including Bahrain and Saudi Arabia (both 30 percent), but far below the 70 percent average for OECD countries.

Table 2.4

Higher Education Enrollments, 2008/09

	Males		Females		All	
	2003/04	2008/09	2003/04	2008/09	2003/04	2008/09
Total Studying in Oman and Abroad	3,341	46,897	4,939	47,320	8,280	94,217
Total Studying in Oman Institutions	3,341	39,709	4,939	42,101	8,280	81,810
Private Universities and Colleges	548	14,192	528	19,329	1,076	33,521
Colleges of Technology	801	12,677	1,058	8,618	1,859	21,295
Sultan Qaboos University	1,001	7,925	1,319	7,351	2,320	15,276
Colleges of Applied Sciences	796	3,613	1,298	4,035	2,094	7,648
Health Institutes	115	637	717	1,655	832	2,292
Institute of Shari'a Sciences	67	391	0	520	67	911
College of Banking and Financial Studies	13	274	19	593	32	867
Studying Abroad*	.	5,424	.	4,726	.	10,150
of which: grants and own accounts	.	4,991	.	4,450	.	9,441
of which: MOHE funded	.	433	.	276	.	709
Studying Abroad by Correspondence*	.	1,764	.	493	.	2,257

Source: MOHE 2009.

Note: *Data not available for studying abroad in 2003/04.

Figure 2.5

Tertiary Gross Enrollment Ratios (GER) in Selected Countries, Most Recent Year Available *(%)*
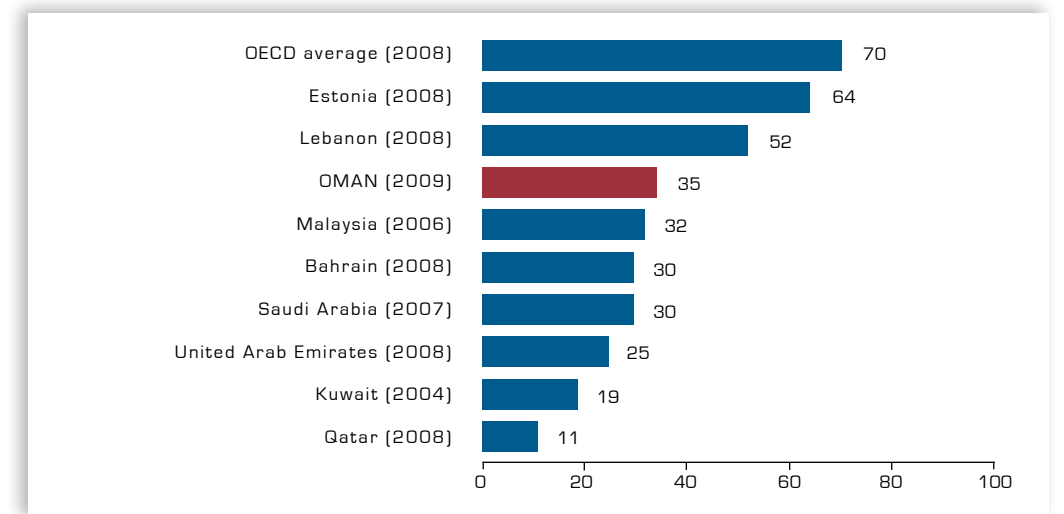
Source: EdStats (August 2010) and authors' calculations based on MOHE 2009.

Note: For Oman includes enrollments in public and private universities and colleges and those studying abroad as a percentage of the population of Omani 18–22 year olds. Non-Omani population data are not included in the tertiary GER calculation because they are not eligible to enroll at SQU (excluding 10 scholarships for GCC students each year and the children of non-Omani academic staff in SQU) and accounted for just 4 percent of enrollments in private institutions in 2008/09.

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[13] International tertiary GERs are calculated by the UNESCO Institute for Statistics (UIS) using a base population of 18–22 years of age. For Oman, the population of Omani-only 18–22 year olds is used because non-Omanis are not eligible to enroll at SQU (excluding 10 scholarships for GCC students each year) and accounted for just 4 percent of private institution enrollments in 2008/09. Note that this indicator is often used in Oman with a base population of 18–24 year olds. Using this definition (with a base of 18–24 year olds), the tertiary GER was 25 percent in 2008/09.

Equal Opportunities for Education Access

In line with EFA goals, the Omani Government is committed to providing education for all children by confirming every child's right to education and by providing free access to schooling for all children.

One of the first priorities of the new Government, which came to power in 1970, was to develop a public education system to reach all sections of society and all parts of the country. The Government also recognized the right of non-Omani communities to establish their own schools. This section analyzes the degree of equal opportunities for access to education for boys and girls.[14]

Boys and girls have high and similar enrollment ratios.

At cycle one and cycle two of basic education, Omani boys and girls have similar GERs of close to 100 percent (table 2.5). At the post-basic education level, however, boys have a higher GER (7 percentage points higher). Adequate data were not available to compute GERs for the non-Omani student population.

Similar student flow rates through the system have been reached for boys and girls in Oman.

Table 2.6 shows that entry rates to grade 1 and completion of grade 4 are now approximately the same for Omani boys and girls. Transition rates between the levels of education are also the same for boys and girls (including Omanis and non-Omanis). However, survival rates to grade 12 are 4 percentage points higher for males than females.

Table 2.5

Gender Parity Index (GPI) for Gross Enrollment Ratios (GERs),
Omanis only, 2006/07 to 2008/09 *(%)*

| | GER | | | | | | % Female | | | GPI | | |
| | Males | | | Females | | | | | | | | |
	2006 /07	2007 /08	2008 /09	2006 /07	2007 /08	2008 /09	2006 /07	2007 /08	2008 /09	2006 /07	2007 /08	2008 /09
Basic education 1st cycle (grades 1-4)	94	96	97	94	95	96	49	49	49	101	100	99
Basic education 2nd cycle (grades 5-10)	101	100	99	96	97	97	48	48	49	96	97	98
Post-basic education (grades 11-12)	84	86	89	80	82	82	48	48	47	95	95	92

Source: Authors' calculations based on data from the MOE Statistical Department.

Note: The GPI is the ratio of the GER for females to the GER for males. A GPI of 100 indicates parity between males and females. A GPI less than 100 indicates that the GER for females is lower than the GER for males.

Table 2.6

Student Flow Indicators by Gender, 2008/09 *(%)*

	Males	Females	Total
Omanis only			
Gross intake ratio to grade 1 (GIR)	99	98	98
Gross completion ratio (grade 4)	95	94	95
Omanis and Non-Omanis			
Transition rates 2007/08 to 2008/09			
Basic education 1st to 2nd cycle (grades 4 to 5)	97	98	98
Basic education to post-basic education (grades 10 to 11)	89	89	89
Survival rate to grade 12	88	84	86

Source: Authors' calculations based on data from the MOE Statistical Department.

Note: Includes public, private and other schools.

[14]   Note that education access rates cannot be examined by region because of the lack of reliable population estimates by region and single year of age (to calculate GERs). Access to education for children with special needs is discussed later in this chapter.

2.2   REMAINING STEPS ON THE ROAD TO EFA

The analysis of education access in the preceding section demonstrates the remarkable achievements made in Oman on the road to EFA, however, a few areas remain in which attention is necessary to fully achieve the EFA goals.

These areas include early childhood education, special needs education, adult literacy and data quality issues. This section outlines the current situation for each of these four areas and discusses the steps that could be taken to advance Oman's education system further.

Early Childhood Education (ECE)

Research studies have consistently identified the significant role that ECE plays in improving young children's cognitive, affective and psychomotor skills, and hence in contributing to school readiness and better learning achievement.

Expanding and improving ECE is one of the internationally agreed EFA goals. ECE contributes to a child's school readiness (UNESCO 2006b). School readiness includes physical development and well being, social and emotional growth, language and cognitive development, and general knowledge. ECE participation is shown to improve primary school attendance and performance (UNESCO 2006b). It is associated with on-time entrance to primary school and a reduction in dropout and repetition rates in primary and secondary education. Given its link with future productivity and reduced costs of health and other public services, ECE is a recognized factor in economic growth (Young 2009). Early educational intervention costs are shown to be relatively low and returns high compared to other options at later stages (Carneiro and Heckman 2003). Most importantly ECE has the potential to promote equal opportunity because of its recognized benefits for young children from poorer or less educated backgrounds.

While there has been some ECE provision expansion in Oman, overall it is still lacking and mostly available only to families who can afford it, since most ECE provision is from the private sector.

The task of providing ECE services has fallen to the private sector and to some government and voluntary institutions. A list of ministries and organizations that provide preschool education together with enrollment data is in appendix table E.1. In 2008/09, approximately 41,000 children enrolled in preschools, 35 percent were in private Qur'anic schools, 29 percent in private kindergartens, 17 percent in Child Growth Houses or Child Corners, 13 percent in international schools, 3 percent in MOE's new preparation classes and the remaining 3 percent in institutions for the Royal Oman Police, the Royal Armed Forces or public Qur'anic schools. The total ECE enrollment for Omani and non-Omani children represents approximately 39 percent of the population of 4–5 year olds. This percentage is low compared to ECE enrollment rates in countries such as the United Arab Emirates (87 percent in 2007), Kuwait (76 percent in 2008), Lebanon (72 percent in 2008), Bahrain (54 percent in 2008), and Qatar (51 percent in 2008) (EdStats August 2010). The majority of ECE enrollments are in urban areas.

The Government launched a national ECE awareness campaign.

In November 2008, the MOE (in collaboration with UNICEF and the private sector) launched a one-year national campaign to raise awareness of ECE's importance, aiming to increase ECE participation. The campaign included national and local media, Internet, mobile telephones and outreach by a national team to remote families and communities. In collaboration with the Ministry of Labour, Ministry of Social Development (MOSD) and UNICEF, it also supported production of a guide to advise parents on how to support their children's learning; held seminars and workshops for parents; and prepared a training package for ECE teachers. The MOE considered the campaign to be a success.

To date, however, the Government has not taken decisive steps to support a broad ECE program.

The government's support for the public awareness campaign has not been followed by clear policies and adequate financial resources to develop a national ECE program. In particular although there is high ECE demand, the Government at present has not taken responsibility to support the provision of ECE places for all young children or for children whose families cannot afford private school fees.

Recently the MOE introduced a pilot program establishing ECE "preparation classes" in public basic education schools in some remote areas.

This program, however, is not able to address the demand for ECE opportunities in all rural and remote areas. In 2005/06 the MOE launched a pilot program in 14 schools for 277 children, which introduced classes to prepare children for a successful transition to basic education. In 2008/09, preparation classes were extended to 58 schools and 1,173 children. The MOE provides training and supervision for preparation class teachers, most of whom are volunteers. The MOE has requested rural schools to open preparation classes where private ECE is not available. Its financial support, however, is limited to providing funds for classroom furniture. The teachers are mainly volunteers from local communities who graduated from grade 12 but could not enter higher education or find paid employment. Retaining these teachers is difficult because they do not have regular salaries, receive only small financial incentives from the MOE, and hence, can easily leave for another job. In addition because they are volunteers, preparation class teachers do not have the same status as other teachers. At present, there also are no plans to expand this small program. Without a policy change, it is clear that the majority of young children in Oman will not have access to free ECE in the near future even though the financial implications for a large-scale ECE program are substantial.

The private sector is active but unlikely to be able to offer a national, affordable and sustainable ECE program.

Promoting additional private sector provision of kindergartens is one approach to expand ECE. Indeed, the number of private kindergartens is increasing at a fast pace. In 2010/11, 216 new private kindergartens are scheduled to open across Oman, including several in rural areas. Private schools, however, are fee based and, therefore, are not an option for poor families. Furthermore, the private sector could not expand provision rapidly enough to cope with demand. A 2005 UNESCO study on "Early Childhood Care and Education Policy in Oman" (Hassan 2005) concluded that it would be unreasonable to expect the private sector alone to expand ECE provision rapidly while still maintaining quality. Government leadership and involvement will be necessary if the goal of making ECE available on a large scale and including children from poor families is to be achieved.

The lack of equal opportunity in ECE provision may contribute to widening educational disparities between urban and rural areas and between rich and poor families.

Private kindergartens, which are mostly in urban areas, are well equipped with facilities and resources; many of their teachers hold formal qualifications to teach in preschools and have taken MOE training programs. Opportunities are lacking in some rural areas and existing urban-rural disparities in education quality and opportunity will likely increase. Without free or low-cost ECE provision, children whose parents cannot afford or find a place in private preschool will start their basic education without this important step for school readiness.
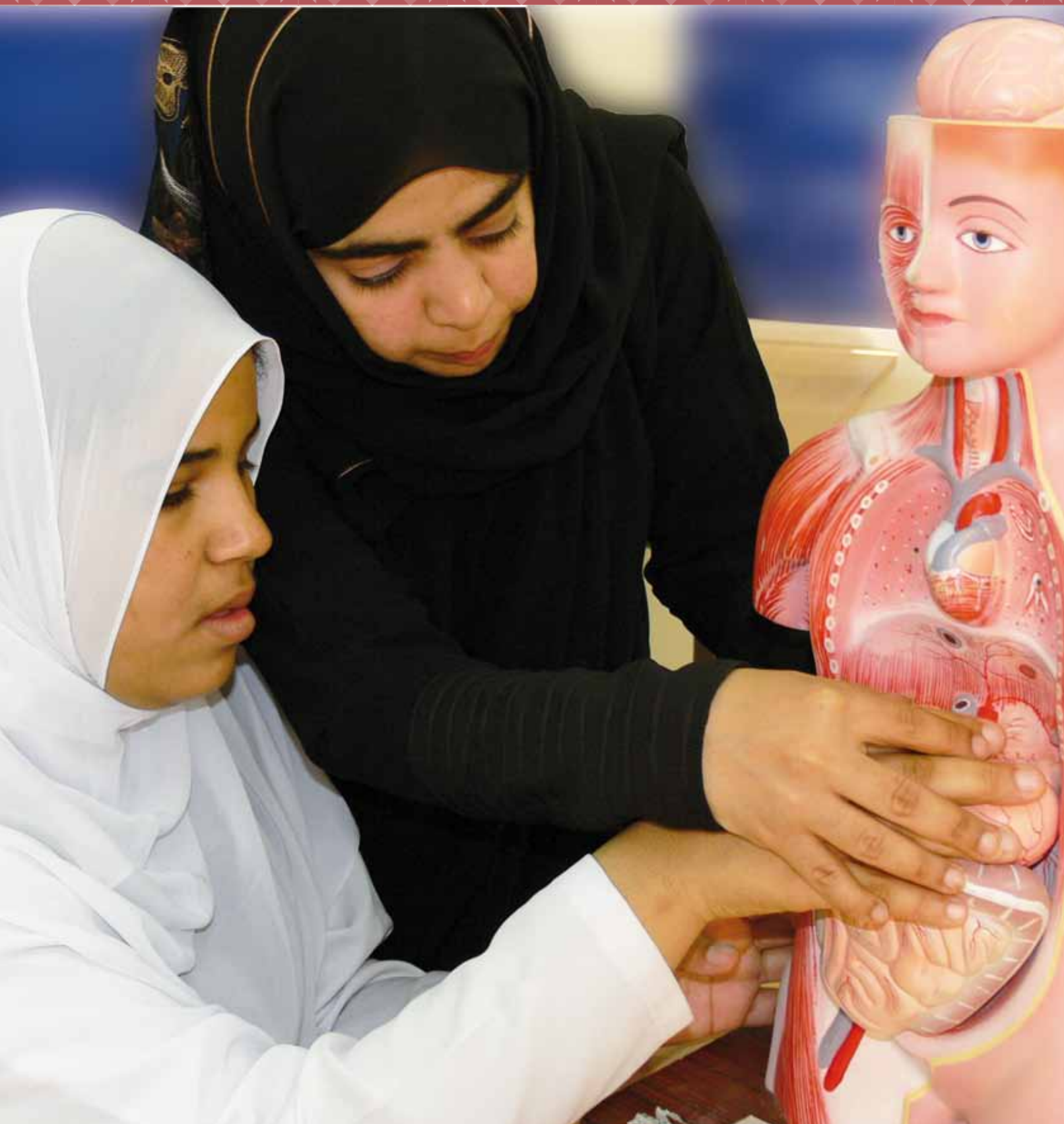
Special Needs Education

The term "special needs" is problematic, as definitions and eligibility criteria vary from country to country.

OECD, for instance, has reported a range of 1 percent to 35 percent of the primary and lower secondary population receiving special needs support in various forms in 20 developed countries (OECD 2004a). In many countries, provision of special needs education requires specialized teachers, equipment and, in some instances, specially designed schools and classrooms. The Framework for Action at the World Conference on Special Needs Education in 1994 proposed the concept of "inclusive education," meaning "schools should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations, children from linguistic, ethnic or cultural minorities and children from other disadvantaged or marginalized areas or groups" (UNESCO 1994, p.6).

The MOE and MOSD have made some progress in providing for children with special needs.

There are currently three educational programs for special needs students.[15] These are (1) special education schools; (2) the Program for Integrating Special Needs Students in Basic/General Schools; and (3) the Learning Difficulties Remediation Program in Basic/General Schools. The MOSD runs the Center for the Care of Disabled Persons, which in 2008/09 had 125 enrollments aged 14–25 with auditory and mobility disabilities. The MOSD also oversees voluntary social centers across the country, which in 2008/09 supported 2,174 children aged 3–14 with various disabilities. In addition outside of the public education system, some families send their special needs children to private schools, and a number of voluntary organizations provide education for children with special needs.[16]

Special education schools serve a small number of students.

Three schools, all of which are in Muscat, offer specialized education: (1) Al-Amal School for students with hearing impairments, (2) Al-Fikryah School for students with intellectual impairments, and (3) Omar bin Khataab Institute for those with visual impairments. In 2008/09 the combined enrollment in these three schools was 673 students; most students were male in grades 1–9 (MOE 2009a).

The Program for Integrating Special Needs Students in Basic/General Schools is at an early stage of development.

Initiated by the MOE in 2005/06, the program offers special separate classes to students with hearing and mental disabilities in basic/general schools. Starting in two basic education schools in the regions of Al-Batinah (North) and Al-Dakhliyah, the program was extended to four regions in 2006/07 and to 10 regions by 2008/09, at which stage there were 477 student participants in 56 schools in all regions (except Al-Wusta). In 2008/09 Al-Buraimi had the greatest proportion (15 percent) of public schools offering the special needs program while Al-Batinah (North) had the largest number of participants at 119 students (MOE 2009a). Plans are currently underway to accept students with visual disabilities into the program.

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[15] In addition, other ministries (including MOSD) provide some special needs services.

[16] The number of children receiving special needs education in private schools is not known.

The third and largest of the MOE special needs programs, the Learning Difficulties Remediation Program in Basic/General Schools, helps teachers identify students who require assistance in literacy and numeracy.

Teachers are expected to work with students with learning difficulties either in regular classroom settings or in "pull-out" programs. This pilot project began with 15 students in two basic education schools in 2002/03. By 2008/09 it was being implemented in around 400 schools and involved over 4,500 students in all education regions (MOE 2009a).

There is considerable room for improvement in the identification and education of children with special needs.

Data on the total number of special needs children who are in schools or kept at home are not available. At present, the total number of students in the MOE programs for special needs represents approximately 1 percent of the basic-school-age population.[17] This percentage is considerably lower than the finding of one international study, which estimated that at least one in 10 persons in the majority of countries have disabilities (World Bank 2003). Even if the international estimate is on the high side, the large difference suggests that the current level of government support for children with special needs is inadequate. This observation is supported by some MOE personnel (interviewed for this study) who have carried out informal surveys throughout the Sultanate to identify children with disabilities: they have noted that there is a very big demand for special education, particularly in rural areas. The MOSD is planning to establish a national commission for services for disabled persons, which will develop a database of people with special needs.

The current system of support for children with special needs requires leadership, coordination and training for special education teachers.

The MOE, MOSD and Ministry of Health (MOH) each provide limited services for families with special needs children. The MOE's responsibilities do not include children with severe special needs. There is limited sharing of information and expertise among ministries regarding special needs children, however, it is hoped this will improve with the establishment of the national commission for services to disabled persons headed by the MOSD and including members from relevant ministries. The present system could be enhanced by an agreed definition of the term "special needs," better interministry cooperation on procedures for identifying and supporting special needs children, and assignment of responsibility for delivery of specific services. Training for the specific challenges of teaching special needs students is required at both the pre- and in-service levels. In an attempt to address the shortage of qualified Omani special needs teachers, the MOE, through the Sultan Qaboos University, introduced a special education (for learning difficulties) diploma course in 2006. At the in-service level the MOE, supported by UNICEF, has organized workshops for teachers of students with learning disabilities.

Adult Literacy

Literacy facilitates personal development and enables individuals to contribute to the well being of their families, communities and nation.

From a national economic perspective, a literate population is associated with better health, lower unemployment and higher productivity rates. The UNESCO Institute for Statistics estimated that Oman in 2007 had an adult literacy rate of 84 percent, which is the same as the international average. This rate is 4 percentage points higher than the rate for developing countries and 13 points higher than the rate for Arab states (UNESCO 2010).

Adult literacy rates in Oman, particularly those for females, have increased dramatically in recent decades.

Census data revealed that the adult literacy rate for Omani nationals (15+ year olds) increased from 34 percent in 1970 to 78 percent in 2003 (the most recent census). In 1970, the difference in literacy rates between male and female Omanis was 44 percentage points; by 2003 it had been reduced to 14 percentage points (figure 2.6). The census also revealed that the rate of illiteracy among non-Omanis (11 percent) was half the rate reported for Omanis. The highest illiteracy rates for Omanis were found in Al-Wusta, Musandam and Al-Sharkiyah (table 2.7)

The MOE aims to reduce adult illiteracy by half between 2003 and 2015, a target which corresponds to the EFA's fourth goal.

To this end, the MOE has established a series of formal and nonformal literacy programs, aiming to eradicate illiteracy particularly in rural and hard-to-reach areas.

Literacy programs are offered in all regions, including remote rural areas, and are open to Omanis and non-Omanis alike.

The programs teach reading, writing and basic skills over three years and consist of classes generally based in schools.[18] The literacy program curriculum covers Arabic language, Islamic studies, mathematics, culture (including social studies, science and domestic studies on childcare and nutrition), and English.[19] The programs aim to educate students to a grade 6 level of achievement. Successful graduates may join grade 7 classes in adult education centers. The vast majority of participants are female whose numbers have been increasing (figure 2.7).

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[17] This includes students in one of the three MOE programs for special needs only and does not include the small number of special needs students in private schools. It is unlikely, however, that the inclusion of these other programs would increase the proportion of the basic-school-age population beyond 1 percent.

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[18] The literacy programs started as two-year programs, but the period was extended to three years in 2005/06.

[19] English language has recently been introduced into the second year of the three-year program and in 2010/11 will be introduced into the program's third year.

Figure 2.6

Adult Literacy Rates, Omani Nationals (15+ year olds), 1970, 2000 and 2003 *(%)*
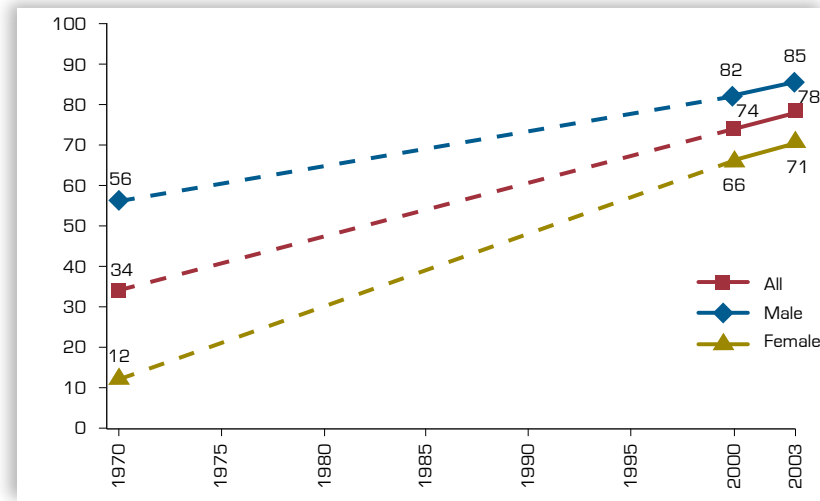
Source: MOE 2008a.

Table 2.7

Percentage of Illiterate Adults (15+ years of age) by Governorate/Region and Nationality, 2003 *(%)*

	All	Omani	Non-Omani
Al-Wusta	36	52	9
Musandam	27	32	18
Al-Sharkiyah	25	29	11
Al-Batinah	23	24	17
Al-Dakhliyah	22	25	12
Al-Dhahirah	19	20	17
Dhofar	15	18	11
Muscat	11	14	8
Total	19	22	11

Source: MOE 2004.

Figure 2.7

Number of Students in Literacy Programs, 2001/02 to 2005/06
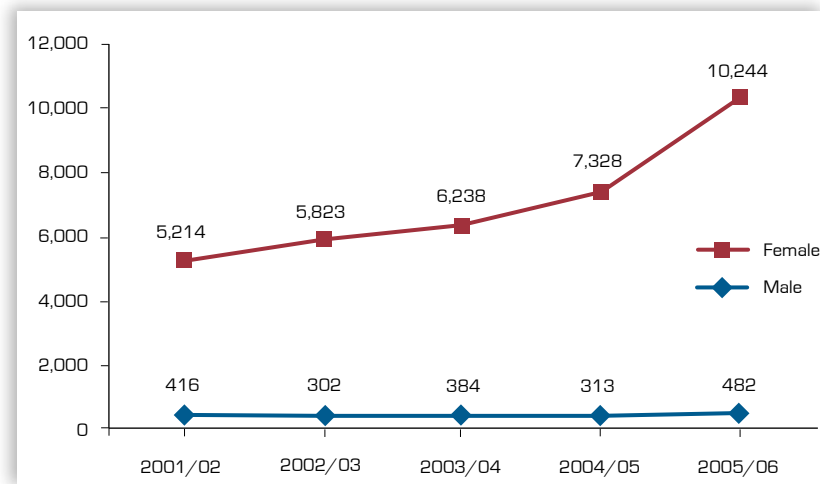
Source: MOE 2008a.

The Cooperative Schools Project aims to coordinate schools to manage and improve their literacy programs and attract more students.

The project, which began as a pilot in 2003/04, has been expanded and now includes 89 schools across all regions. From each cooperating schools group, one school takes the lead in supervising the literacy programs. Teachers are asked to work as volunteers to supervise and train school graduates to teach in literacy classes.

The Learning Villages Project, initiated in 2004, is a community-based approach to eradicate illiteracy while addressing peoples' needs in remote and underserved areas.

The initial project involved one village; in a short period of time, over 250 people began attending classes in reading, writing, basic mathematics and life skills. In addition to tackling illiteracy, the project aims to raise awareness of social issues, such as the environment, nutrition and childcare, through courses and lectures offered by organizations, including the Ministry of Awqaf and Religious Affairs (MARA), the MOH, the MOSD and the Royal Omani Police. In 2008/09 the project expanded to include 17 villages across 10 regions.

For those who have completed the three-year literacy program or dropped out of formal education and are literate, the MOE offers grades 7 to 12 in adult education centers or through self-study materials.

Learners choosing to study at home must register every year and, for a relatively small fee (RO 20 for all books), are given the required books for study. These students follow the same curriculum as basic and secondary schools (grades 7 to 12). Table 2.8 shows that most adult education students (86 percent) are studying informally on their own. This is particularly true for males — 96 percent of adult male students are enrolled in informal study at home. Three-quarters of the students in adult education centers are women. Women tend to be studying at lower grades than men: one-third of females enrolled in adult education centers were in grade 7, while over a quarter of males were in grade 12.

Table 2.8

Number of Learners in Adult Education Centers and Studying Informally, 2008/09

		Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	Total
Attending formal classes	Males	123	115	106	130	39	183	696
	Females	678	335	285	230	167	334	2,029
Studying informally on their own	Males	517	664	586	2,614	2,177	9,059	15,617
	Females	275	231	164	464	370	2,972	4,476
Total		1,593	1,345	1,141	3,438	2,753	12,548	22,818

Source: MOE.

The literacy programs have experienced a number of issues.

First, the vast majority of participants are female (table 2.8). Males do not attend literacy programs for a variety of reasons, including belief that there is no need to improve their literacy skills. A number of international cases have shown that most adult literacy instructors are women and courses often target women, making it difficult for adult male learners to participate (Rogers 2005). Second, after completing the three-year literacy program, as few as 5 percent of students progress to grade 7. In many instances, students do not continue their literacy studies if their villages do not have an adult education center. Third, a variety of curricula have been used in the literacy programs. Evaluation of literacy program curricula and learners' needs is necessary, so changes can make programs more

relevant and effective and can enable program graduates to master the skills needed to join grade 7 in adult education centers. Fourth, because literacy program teachers' salaries are low (RO 1.5 per class and RO 70 per month), attracting and retaining qualified and experienced teachers has been a problem. In some instances, grade 12 graduates have been recruited for this task. Current plans to improve teaching quality by hiring university graduates and using teachers from regular schools may not solve the problem unless the financial issue is addressed. Finally, some remote areas lack buildings to use as literacy centers.

2.3   POLICY IMPLICATIONS

This chapter has analyzed education access and highlighted Oman's substantial achievements in its quest to achieve the goals of Education for All. It has also indicated a number of areas for emphasis to fully achieve the EFA goals. These areas include early childhood education, special needs education and adult literacy. The following recommendations are based on these analytical findings and on relevant international experience.

Increasing Access to Early Childhood Education (ECE)

The Government of Oman is increasingly aware of ECE's importance; it is seeking ways to expand children's access to ECE programs and to improve program quality. While continuing to encourage the private sector's contribution to quality ECE expansion through appropriate policies and regulations, the Government also has to increase its efforts in this critical education subsector to achieve greater ECE access and to gain from ECE potential. A few specific recommendations follow:

The Government of Oman could develop a comprehensive and implementable ECE strategy that links with an overall education vision.
Since several ministries are currently involved in ECE, a unified national education strategy could guide ECE development. The strategy document could cover (1) diagnosis of the present situation; (2) a long-term vision; (3) a short- to medium-term strategic plan, including estimated financial resources needed; and (4) an implementation arrangement.

To increase overall ECE provision and improve equal opportunities for ECE access, increased public investment will be required.
Given the demand for increasing ECE provision from its current low levels, it is clear that the pace of expansion is beyond the scope of the private sector alone. In addition, without increased public sector provision or public financing of places in private preschools as in Ireland (box 2.1), children from poor and remote areas will not have ECE access, leading to increased disparities in the future.

The MOE could plan to expand the preparation classes at basic education schools, particularly in rural areas and initially for the year prior to grade 1.
To ensure sustainability and high quality of ECE programs, these classes should be staffed by teachers with the same qualifications and employment status as basic school teachers. This requires a substantial political and financial commitment from the Government. Preparation class expansion should be included in the short- and medium-term plan of the national ECE strategy.

To expand ECE provision, the Government could study other countries' experiences with established preschool programs.
Experiences from other countries prove it is possible to expand ECE rapidly with strong government commitment. For example in Kuwait, the MOE offers two years of free kindergarten in public schools. Approximately 65 percent of Kuwaiti kindergartens are public (Kuwait Ministry of Education 2007). Jordan offers an example of rapid expansion of public ECE. The Jordanian Government committed strongly to ECE development and launched an education reform program that included ECE program expansion and quality enhancement; the results of the reform are encouraging (box 2.2). Ireland's Early Childhood Care and Education Scheme (box 2.1) is another model of government commitment and partnership with the private sector to promote ECE expansion.

Box 2.1
Ireland's Early Childhood Care and Education (ECCE) Scheme

Ireland's Early Childhood Care and Education (ECCE) Scheme commenced in January 2010. The scheme provides one free year of ECE for children between the ages of 3 years 2 months and 4 years 7 months, beginning in September of the relevant year. Where a child has been assessed with a significant disability, they may under certain circumstances participate in a second free preschool year. The Government pays a fixed rate per child (capitation fee) for all children to participating private providers (including preschool and daycare services). In return, these providers must offer a preschool service free of charge to all children for a set number of hours and weeks. The rate depends on the type of service provided. For half-day sessions, (such as preschool, Montessori, or parent and toddler group) it is usually free preschool for 3 hours a day, 5 days a week for 38 weeks. Any time over that is charged to the family. For full-time or part-time daycare services, it is usually free preschool for 2 hours and 15 minutes per day over 50 weeks with additional hours paid for by the family.

The childcare providers who take part in the ECCE scheme must provide an appropriate preschool program, which follows the national framework for early years care and education. The capitation fee for daycare services providers is €48.50 per week (approximately US$60) over 50 weeks and for providers of sessional services it is €64.50 per week (approximately US$80) over 38 weeks. Preschools that have more highly qualified staff are given a capitation fee of €75 per week (approximately US$92) over 38 weeks.

When the scheme started in January 2010, 3,800 preschool services participated (85 percent of all such services). From September 2010, this figure was expected to increase to over 4,300 services (or 96 percent of all preschool services). Of the target group of children, 83 percent (or 53,000 children) used the free preschool year. A further 4,000 children used free preschool under other schemes targeted at the disadvantaged, bringing the total number of children benefitting from a preschool year to 89 percent. This number is expected to rise in September 2010. The private sector has been responsive to the scheme. Most importantly the scheme is socially progressive as it provides free ECE for all children, including poorer children who were least likely to attend preschools. The increased rate paid to ECCE providers with highly qualified staff is an incentive for providers to improve staff quality and is likely to lead to quality improvements in early childhood learning in the future.

Source: Ireland Office of the Minister for Children and Youth Affairs (www.omc.gov.ie).

Box 2.2
Expansion of Early Childhood Education: The Case of Jordan

Enrollment in kindergarten (comprising KG1 for 4 year olds and KG2 for 5 year olds) was low and uneven across Jordan. Provision was mostly from the private sector; kindergarten attendance was not compulsory; and there were few formal curriculum requirements. The Jordanian Government recognized the importance of ECE for educational and social development, particularly for vulnerable populations, and for improving school readiness, which ultimately reduces education system inefficiencies. In 2003 the Government designed a reform program to revamp the education sector starting from early childhood in the framework of lifelong learning to increase the country's competitiveness in the knowledge economy. The program emphasized the expansion of quality kindergarten education to enhance children's readiness for primary education. The action areas included (1) establishing a kindergarten curriculum, license standards and an assessment instrument for learning readiness; (2) developing training and occupational standards for kindergarten administrators and teachers; (3) expanding access for poor children by creating public kindergartens; and (4) providing education to increase parents' understanding of the importance of quality early childhood experiences and awareness of their role as their children's first educators.

The reform program took a phased approach, starting with the establishment of kindergartens to accommodate 5 year olds (KG2, one year prior to grade 1) at public schools in poor and remote areas to prepare students to succeed in school. This included the creation of a new ECE environment with an interactive curriculum based on selected and well-defined national standards, in addition to suitable infrastructure, staffing and training. The program will be extended gradually to KG1 (age 4) at a later stage. Results of the reform program included

(1)   GER for KG2 increased from 41 percent in 2002/03 to 52 percent in 2008/09;

(2)   Percentage of qualified kindergarten teachers with bachelor degrees and certification at public schools increased by 37 percent;

(3)   Percentage of fully equipped public kindergartens increased by 46 percent; and

(4)   Basic education learning quality was enhanced as more children's school readiness improved.

Sources: World Bank 2009 and Kaga 2007.

Improving Special Needs Education Provision

The MOE is making an effort to provide more and better education opportunities for children with special needs who are often the last group to reach the EFA goals. It is indeed a challenging area that requires substantive financial commitment and technical capacity. The following are a few recommendations from analytical results:

The Government of Oman could consider the development of a national special needs education strategy to articulate a long-term vision and a short- to medium-term plan.
Special needs education is still a relatively young subsector, and the financial and technical resources needed to develop this subsector are tremendous. A subsector strategy will help identify and prioritize the most urgent work needed. The strategy should represent close collaboration of all relevant parties, including the MOE, MOH and MOSD.

Improve mechanisms for identifying and evaluating children with special educational needs.
Identifying children who require special education is a first crucial step. Currently public campaigns encourage parents to come forward and identify their children requiring special education. Developing expertise in evaluating children with special education needs should be a national priority. Proper identification will ensure that children with special needs are placed in the most appropriate education environment to reach their learning potential. The MOE, MOH and MOSD should collaborate on this priority. The ministries could also establish a reliable and up-to-date database for special needs children.

Teacher training for integrating special needs children within the classroom could be expanded.
As an international trend and a more appropriate educational approach, children with special needs are increasingly integrated within regular classrooms. Oman is still at an early stage in this approach and needs to build human resources. Well-designed preservice and in-service training should be developed and introduced to all teachers who are or will be involved in initiatives to mainstream special needs children.

Continue Reducing Illiteracy

Oman's efforts to reduce adult illiteracy have made much headway, but there are steps that can be taken to reduce illiteracy even further and to ensure the country benefits fully from a literate society.

Improve literacy program quality and availability to increase its value and to attract students, particularly males.
The MOE may need to consider options to improve literacy program quality and to ensure quality outcomes for all learners. The Cooperative Schools Project and the Learning Villages Project are steps in the right direction. But further investment will be needed to ensure that those most in need of literacy education receive it. Ensuring that these classes are offered at a time suitable for working males and in an environment in which they can feel comfortable (with other male students and male teachers) is a challenge that other countries are currently tackling. Improving facilities will also be necessary.

Develop a policy to attract, retain and train suitable teachers for adult literacy.
The development of quality literacy programs will require investing in staff. Specifically, attracting qualified teachers will require pay at a rate that will ensure recruitment and retention.

Improving Data Quality and Monitoring

For sound decision making, education policy makers need access to timely, valid and reliable data on important aspects of the education system.
Currently, the MOE produces timely and comprehensive education statistics yearbooks. However, there is room for improving the quality of data needed by policy makers. Some policy issues related to education access and efficiency cannot, at this time, be monitored adequately due to lack of data, some of which would come from government departments other than the MOE. To resolve this situation, the technical staff of the MOE should work closely with the producers of statistics in these other departments. The main data issues include, but are not limited to, the following points:

- The single-year-of-age population data for non-Omanis is not reliable. As such, the Ministry of National Economy (MONE) population data cannot be used to calculate education indicators that require the total population of Oman as a denominator nor can it be used to determine indicators for non-Omanis. As a result, Oman cannot report on the percentage of its population that complete primary education (an EFA goal).

- Enrollment data from international schools is incomplete. For example, information on repeaters has not been obtained from international schools.

- Information has not been collected in all schools on the number of repeaters at each grade by nationality, limiting the ability to produce separate student flow information for Omanis and non-Omanis.

- Special needs students in private schools or who remain at home and do not attend school have not been identified.

- Progress in eradicating illiteracy cannot be evaluated because objective measures of literacy achievement have not been developed. Census data provide an inadequate measure of literacy rates. Sample-based approaches that use literacy achievement levels would provide more valid measures of literacy achievement.

- The destination of school leavers is unknown. A survey of the destination of school leavers would provide valuable information on their transition to further studies, work after post-basic education or unemployment.

CHAPTER 3

QUALITY OF STUDENT LEARNING

Over the last 40 years, Oman has achieved impressive results in developing its education system, particularly in providing education opportunities and in enhancing service delivery. Like many countries in the world, Oman is now shifting priorities from school enrollment to a greater emphasis on education quality as measured by student learning outcomes. This shift is driven primarily by the need to enhance Oman's human resources in the context of the modern globally competitive labor market. While the Ministry of Education (MOE) is shifting its focus from educational inputs to educational outcomes, there are two key outcome questions to be addressed: "How well are students learning?" and "Are current levels of student learning adequate?" In this chapter, the analysis focuses on Oman's performance in national and international studies of educational achievement levels. Through participation in a series of national studies and in an international study, the MOE now has access to objective data, which can provide an indication of students' learning achievement levels.

3.1 EVIDENCE FROM NATIONAL-LEVEL ASSESSMENTS

Between 1993 and 2001, Oman participated in four UNESCO/UNICEF-sponsored Monitoring Learning Achievement (MLA) studies, one each for grade 4 (1994), grade 6 (1998), grade 9 (1999) and grade 10 (2001). These studies were carried out before the new basic education system was fully introduced, and therefore, the results may relate more to learning achievement from the previous general education system. Achievement levels were tested in Arabic, mathematics, science and life skills in grades 4, 6 and 9 and in Arabic, mathematics, chemistry, physics and biology in grade 10.

The findings indicated, in general, that student learning achievement in Oman did not meet expected levels across all grades and subjects, particularly in grade 6 mathematics.
Explanations for the poor findings included (1) inclusion of test items that tested higher-level cognitive skills in a system that emphasized mastery of factual knowledge; (2) inclusion of material that was not in students' textbooks; (3) lack of student familiarity with multiple-choice tests; and (4) lack of students' effort to do well because they understood the test did not contribute toward grade promotion. The MOE considered the results disappointing, and they became one of the reasons for undertaking major education reforms (MOE 2006). The studies did not identify specific areas of students' weakness within the subjects.

Students performed less well than an international comparator group in the Canedcom study. As part of an extensive evaluation of the first cycle of the new basic education system in Oman, Canedcom International conducted surveys of grade 4 students in 51 schools in each of 11 regions and in 12 private schools in mathematics, Arabic, English and science (Drader et al. 2004). Each test had between 34 and 40 items. Average performance scores, based on the percentage of items answered correctly, were below 50 percent in three of the four subjects. Subsets of items from the Trends in International Mathematics and Science Study (TIMSS 2007) were included in the assessment (16 items for mathematics and 6 items for science). Students in Oman scored lower than their international counterparts on both subsets. Results should be interpreted with some caution due to sampling, administrative and other design issues. The study concluded that students in grade 4 were one year behind international standards.[20]

The MOE carried out sample-based national assessments of grades 4, 7 and 10.
The assessments enabled the MOE to develop necessary experience in item writing and in conducting large-scale surveys. Details and results are as follows:

Grade 4: The 2008/09 national assessment covered (1) Arabic and social studies; (2) mathematics and science; and (3) English (reading, writing and speaking). A national sample of 6,817 students included each of the 11 regions, as well as a small number (173) from private schools. The tests were relatively short, ranging from 12 items in the case of Arabic language to 27 items for mathematics. Performance levels were lower than expected; the average scores for all subjects were less than 50 percent with the exception of English (reading and writing). Girls outperformed boys on average in each subject area in all 11 regions.[21] The highest scoring regions were Musandam and Al-Batinah (North), followed by Muscat, Al-Dhahirah, Al-Batinah (South) and Al-Buraimi. Private school students tended to score higher than those in public schools.

[20] This assertion was based on the numbers of students who were struggling with the basics of reading and writing in grade 4 in Oman and in grade 3 in Canada and on differences recorded in the TIMSS 2007 comparison.

[21] Reported comparisons are based on the average percentage of items answered correctly.

Grade 7: The 2006/07 assessment tested student achievement in Arabic, English, mathematics and science. Each test had 50 items (MOE 2008b). The results revealed that the tests were quite difficult (the mathematics average was 22 out of a total of 100 marks); generally students did not reach the MOE's expected standard or performance level. Students who attended basic education schools scored higher in Arabic than students in general education. Girls as a group scored higher than boys.

Grade 10: The 2007/08 national assessment tested achievement levels in Arabic, English, mathematics and science (MOE 2009b). Again, the items proved to be difficult for the majority of students, especially in science, and girls on average outscored boys in all subjects.

In each of the three national assessments, average achievement levels by region differed from assessment to assessment and by subject tested. This may be due to real differences among the regions, or it may be due to sampling and validity problems associated with the survey methodology and with the tests.

3.2   EVIDENCE FROM INTERNATIONAL ASSESSMENT

The Trends in International Mathematics and Science Study (TIMSS 2007) provides the most comprehensive report on learning achievement standards in Oman.
The technical quality of TIMSS in terms of sampling, data cleaning, sample weighting and analysis was superior to that of the earlier reported national-level studies, making the results more reliable. The tests consisted of both multiple-choice and constructed-response items (Martin et al. 2008 and Mullis et al. 2008). A total of 49 education systems participated in the TIMSS grade 8 assessments. The international average was set at 500 points. Data published in the international reports and from additional analyses undertaken by the authors using the TIMSS dataset for Oman are presented here to illustrate how Oman's results compared with those of participating Gulf Cooperation Council (GCC) countries, with other Arabic-speaking countries and with high-scoring countries.

Oman's educators considered the items in (TIMSS 2007) mathematics and science tests fair.
As part of the background research for this report, the MOE established separate mathematics and science teams to study the content of the TIMSS tests for grade 8 in mathematics and science. The teams considered that 80 percent of the mathematics and 65 percent of the science items were fair in terms of content and format for students in Oman. An additional 18 percent of mathematics items and 25 percent of science items were considered by the teams to have covered appropriate content but contained unfamiliar question formats. A relatively small percentage of items (2 percent for mathematics and 10 percent for science) were considered to have tested material not in the Omani curriculum. Teachers of students who took the TIMSS tests indicated that the vast majority of students were familiar with the multiple-choice and constructed-response type of questions used in the study. Eighty-four percent of Oman's teachers considered themselves very well prepared to teach all 18 specific mathematics topics covered in the TIMSS test.[22]

A number of factors that might account for low student performance in (TIMSS 2007) were examined.
Students in Oman did not tend to skip questions. The percentage of missing answers for open-ended questions was lower than the international average. For the multiple-choice questions, the percentage of missing answers was almost the same as the international average. It is also worth noting that, in comparison with international averages, students' questionnaire responses in Oman showed that they tended to have more positive attitudes towards mathematics and science, placed a higher value on mathematics and science as subjects, and were more self confident about learning mathematics and science.

Mathematics

Students' TIMSS mathematics assessment performance levels in Oman compared favorably with students in other participating GCC countries. The TIMSS 2007 test for grade 8 mathematics covered four domains: number, algebra, geometry, and data and chance. For each of the participating GCC countries, four separate scores (known as percentiles) are calculated corresponding to different points in the distribution of scores within each country:

- **Very good** – a score that was as good as or better than the score achieved by 90 percent of students in the country (492 in the case of Oman);

- **Average** – a score that was as good as or better than the score achieved by 50 percent of students in the country (378 in the case of Oman);

- **Below average** – a score that was as good as or better than the score achieved by 25 percent of the students in the country (309 in the case of Oman); and

- **Poor** – a score that was as good as or better than the score achieved by 10 percent of students in the country (245 in the case of Oman).

These percentiles and corresponding scores for each country are shown in figure 3.1. It shows that students in Oman, at each of the four points of the mathematics score distribution (percentiles), tended to score slightly higher than their counterparts in the other GCC countries with the exception of Bahrain. For example, the "very good" student in Oman (on the 90th percentile) scored almost as high as the "very good" student in Bahrain and higher than the "very good" students in the other listed GCC countries.

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[22] For science, 71 percent of teachers in Oman reported feeling very well prepared to teach all 23 science topics in TIMSS 2007.

Figure 3.1

TIMSS Grade 8 Mathematics Scores, GCC Countries, 2007

Source: Mullis et al. 2008.

Table 3.1

Average TIMSS Grade 8 Mathematics Scores and Rank, Selected Countries, 2007

	Average score	Rank
Selected countries scoring significantly higher than Oman:		
Chinese Taipei	598	1
Korea Rep. of	597	2
Singapore	593	3
Hong Kong SAR	572	4
Lebanon	449	28
Jordan	427	31
Tunisia	420	32
Bahrain	398	35
Syria	395	37
Egypt	391	38
Algeria	387	39
OMAN	372	41
Selected countries scoring significantly lower than Oman:		
Kuwait	354	44
Saudi Arabia	329	46
Qatar	307	48

Source: Mullis et al. 2008..

In Oman the average score in TIMSS 2007 mathematics was significantly higher than that of students in GCC countries and lower than that of other Arabic-speaking countries and of the high-scoring countries.

Oman's students recorded an average score of 372; this ranked Oman 41st among 48 countries.[23] Oman's average TIMSS mathematics score was higher than three GCC countries but significantly lower than a number of other Arabic-speaking countries (table 3.1). The highest performing countries in mathematics were Chinese Taipei (598), Republic of Korea (597), Singapore (593) and Hong Kong SAR (572).

Few students in Oman achieved high-level scores in mathematics.

An international panel, using a sophisticated statistical approach, selected international benchmarks (or cut-off points) to categorize all students who participated in TIMSS into one of four different performance levels: "advanced" (>625), "high" (550–624), "intermediate" (477–554) and "low" (400–474). The international averages in figure 3.2 shows that 2 percent of all participating students in TIMSS were ranked "advanced," 13 percent ranked "high," 31 percent ranked "intermediate" and 29 percent ranked "low." The remaining 25 percent were considered "below low." These benchmarks can be used to compare the mathematics performance of Oman's students with the TIMSS international averages. The comparison shows that no student in the Oman sample was rated "advanced," 2 percent were in the "high" category, 12 percent in the "intermediate" category and 27 percent in the "low" category. More than half of Oman's students (59 percent) were ranked "below low."

Figure 3.2

International Benchmarks in TIMSS Grade 8 Mathematics, 2007
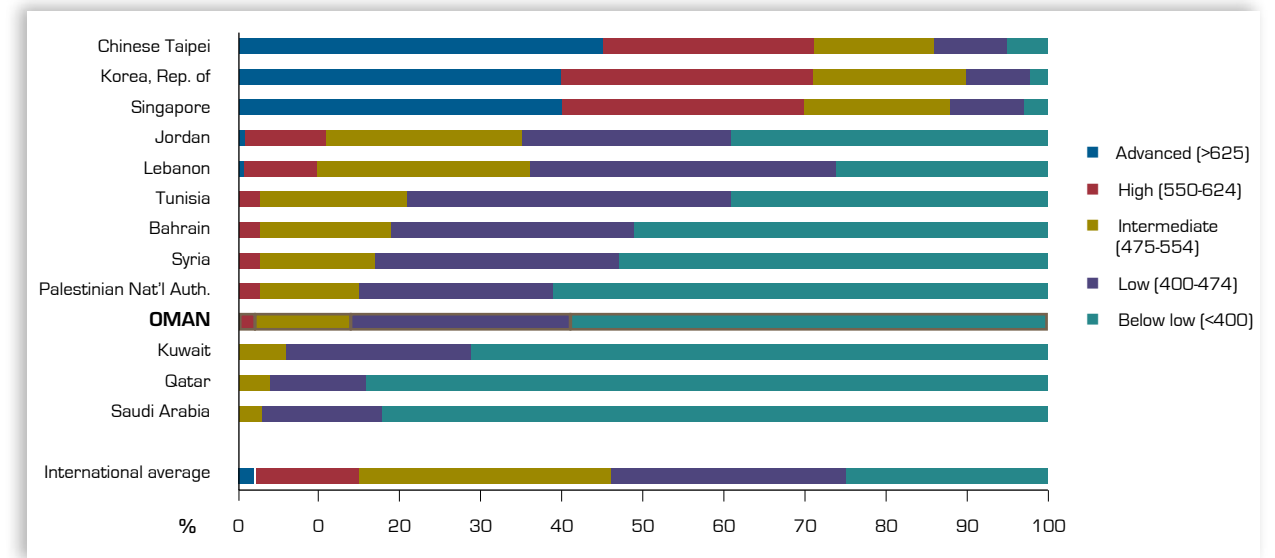
Source: Mullis et al. 2008.

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[23] Morocco also participated in the TIMSS 2007 grade 8 test (making a total of 49 countries); however, it did not satisfy the guidelines for sample participation rates and so their results are not included in the ranking.

Mathematics Low Benchmark Item:

Items in the grade 8 "low" category assessed students' "knowledge of whole numbers and decimals, operations and basic graphs" (Mullis et al. 2008, p. 112). Box 3.1 presents an example of a low-level item used in the assessment. This item was answered correctly by 64 percent of Oman's students. The international average was 79 percent. Almost all Korean students (97 percent) answered this item correctly.

Box 3.1

Sample Item from TIMSS 2007 Low International Benchmark of Mathematics Achievement (Grade 8)

On a school trip there was 1 teacher for every 12 students.
If 108 students went on the trip, how many teachers were on the trip?

☐   7

☐   8

☐   9

☐   10

Source: Mullis et al. 2008.

The difference in achievement standards between the students in Singapore, one of the top scoring countries, and Oman was substantial.

Following discussions with Omani members of the study team, Singapore (the third highest performing country in TIMSS 2007) was selected for comparative purposes. The team selected a high-performing or "very good" student in Oman, to be named Abdullah, who scored 492 on the mathematics test. This score corresponded to the 90th percentile of the Omani sample (figure 3.3), meaning that he scored equal to or higher than the scores of 90 percent of Oman's students. In Singapore, a student, to be named Lee, also scored 492 on the same TIMSS 2007 mathematics test. This score, however, was considered quite poor by Singapore standards. Lee's score of 492 put him on the 15th percentile in Singapore, which meant that he was as good as or better than 15 percent of the Singaporean students who took the test. In this instance, a very good student in Oman would be considered close to being a poor student in Singapore in mathematics.

Comparison of a High-performing Student in Oman (90th Percentile) With Scores of Students from Singapore, Grade 8 Mathematics, 2007
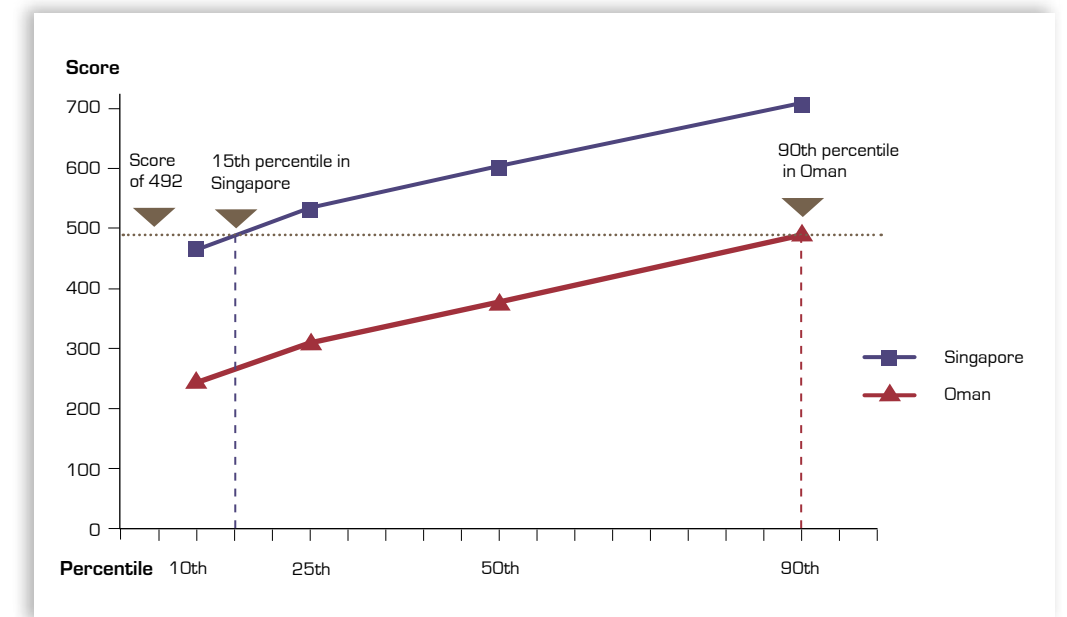
Source: Authors.

Science

The performance of Oman's students in TIMSS 2007 science compared favorably with that of students in other participating GCC countries. The TIMSS science test covered biology, chemistry, physics and earth science. The performance of Oman's students at the four selected levels was lower than that of students from Bahrain and very similar to that of students from Kuwait (figure 3.4). The "very good" (90th percentile) and "average" (50th percentile) students in Oman scored higher than similarly rated students from Saudi Arabia and Qatar. Students from Oman, Kuwait and Saudi Arabia on the 25th and 10th percentiles received very similar scores, while students from Qatar scored much lower.

The average performance of Oman's students in science placed them in the middle range of Arabic-speaking countries and below the high-scoring countries.

With an average science score of 423, Oman was ranked 36th out of 48 countries, seven places higher than its ranking for mathematics (table 3.2). Oman's rank placed it above five and below four other Arabic-speaking countries. Kuwait and Lebanon are not listed in table 3.2 because the average score differences between Oman and these two countries were not statistically significant. The highest performing countries in science were Singapore (567), Chinese Taipei (561), Japan (554) and Republic of Korea (553).

Figure 3.4

TIMSS Grade 8 Science Scores, GCC Countries, 2007
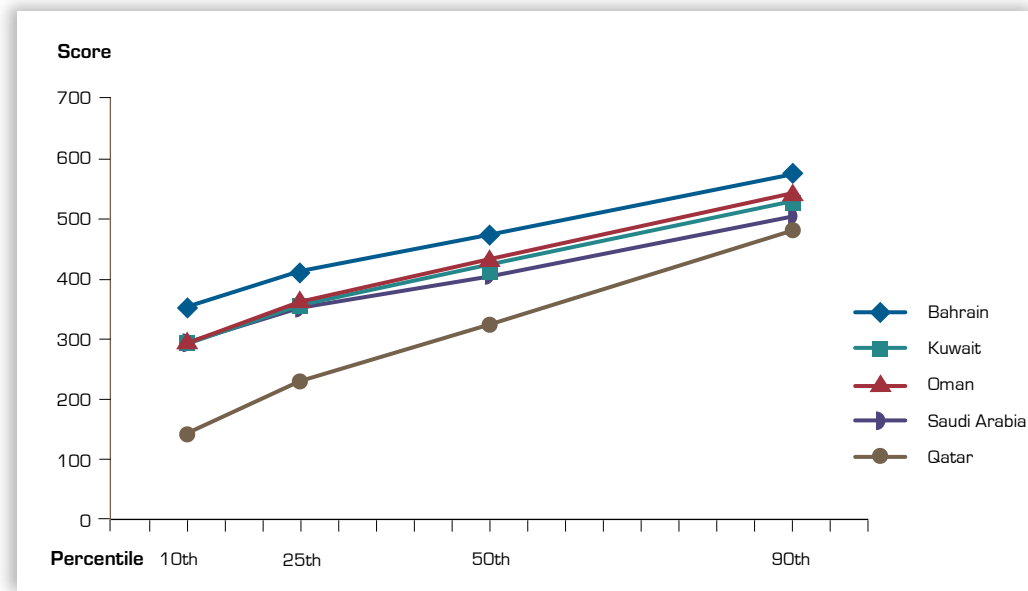
Source: Martin et al. 2008.

Table 3.2

Average TIMSS Grade 8 Science Scores and Rank, Selected Countries, 2007

	Average score	Rank
Selected countries scoring significantly higher than Oman:		
Singapore	567	1
Chinese Taipei	561	2
Japan	554	3
Korea, Rep. of	553	4
Jordan	482	20
Bahrain	467	26
Syria	452	32
Tunisia	445	34
OMAN	**423**	**36**
Selected countries scoring significantly lower than Oman:		
Egypt	408	41
Algeria	408	42
Palestinian Nat'l Auth.	404	43
Saudi Arabia	403	44
Qatar	319	47

Source: Martin et al. 2008.

Eight percent of Oman students were rated "high" or "advanced" on the international benchmarks for science, compared to 17 percent internationally.
"Advanced" level students accounted for 3 percent of all the students in the TIMSS study who took the science test. A further 14 percent were rated "high," 32 percent "intermediate," 29 percent "low" and 22 percent "below low." The comparable figures for Oman were 1 percent "advanced," 7 percent "high," 24 percent "intermediate" and 29 percent "low." In addition, 39 percent were categorized "below low" (figure 3.5).

Figure 3.5

International Benchmarks in TIMSS Science, 2007
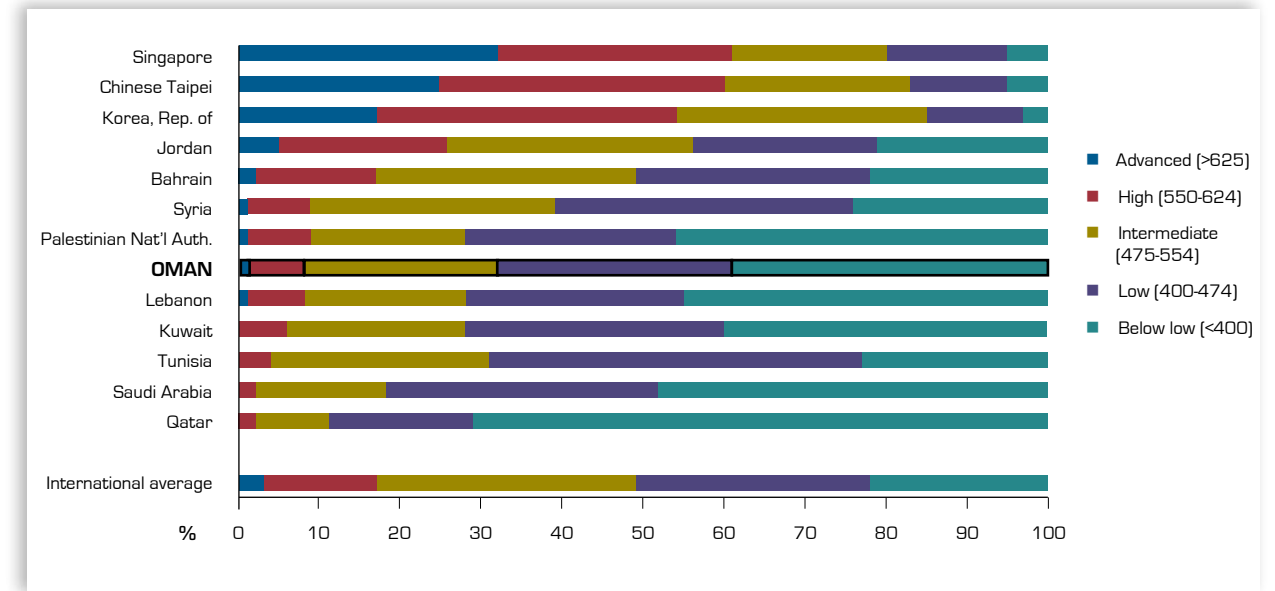
Source: Martin et al. 2008.

Science Low Benchmark Item:
Skills associated with the "low level" included recognizing some basic facts about life and physical sciences; having some knowledge of the human body; demonstrating some familiarity with everyday physical phenomena; interpreting pictorial diagrams; and applying knowledge of simple physical concepts to practical situations. Box 3.2 presents an example of a "low level" item. This item was answered correctly by 64 percent of Oman's students, by 75 percent of all students who took the (TIMSS 2007) grade 8 science test, and by 97 percent of students in Chinese Taipei.

The difference in science achievement standards between the students in Singapore and Oman, while substantial, was not as big as that recorded for mathematics.
For comparative purposes (figure 3.6), we selected a high performing Omani student again, Abdullah, who scored 541 on the science test (a score as good as or better than that of 90 percent of Oman's students on this test). In Singapore, Abdullah would have ranked below a student on the 50th percentile. In fact his score would have placed him on the 36th percentile. In this instance, a very good student in Oman would have been ranked well below average in grade 8 science in Singapore.

Figure 3.6

Comparison of a High-performing Student in Oman (90th Percentile) With Scores of Students from Singapore, Grade 8 Science, (TIMSS 2007)
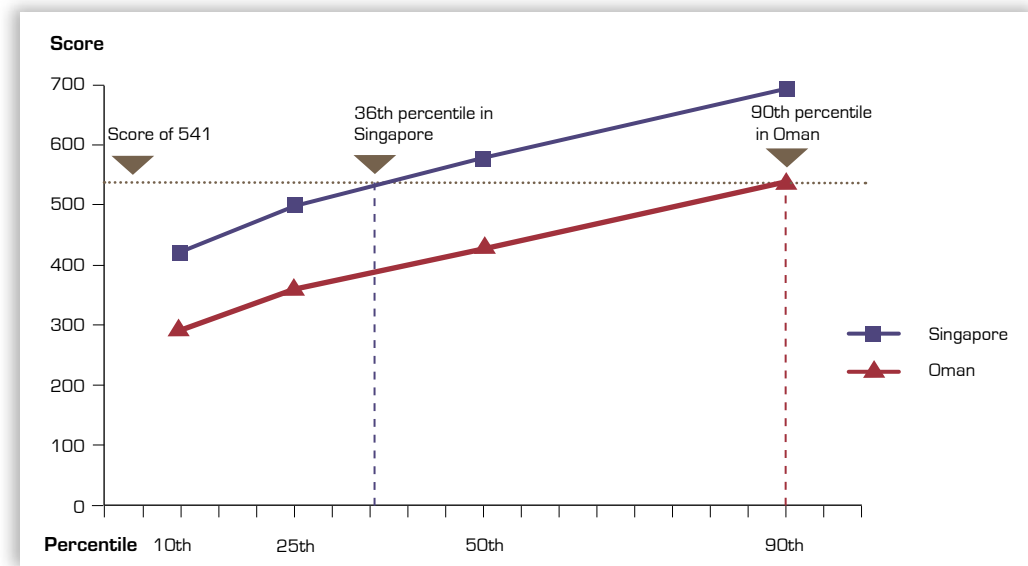
Source: Authors.

Factors Associated with Learning Achievement

(TIMSS 2007) data indicates that a number of home-related factors were associated with better test performance.[24]
The data revealed a number of correlations between home factors and test performance in Oman. Students who did homework for an hour or more each day scored higher on the mathematics and science tests. Students in homes with more books performed better on the tests, and students in a home with a computer also performed better. These correlations must be treated with caution, as the presence of books and a home computer may also be linked to other factors, such as more wealthy families or better-educated parents. Nevertheless, these provide some indication of the importance of home factors in learning outcomes.

Despite the poor results, students and teachers had relatively high levels of self confidence about learning and teaching science.
Students in Oman scored higher than the overall TIMSS averages in measures of valuing mathematics and science and self confidence in learning mathematics and science. The TIMSS results suggest that teachers of grade 8 students felt confident that they were familiar with the science concepts covered in the assessment. The test score data suggest that this confidence level may be unjustified.

24 The results presented here are from an analysis by the authors using TIMSS 2007 data for Oman.
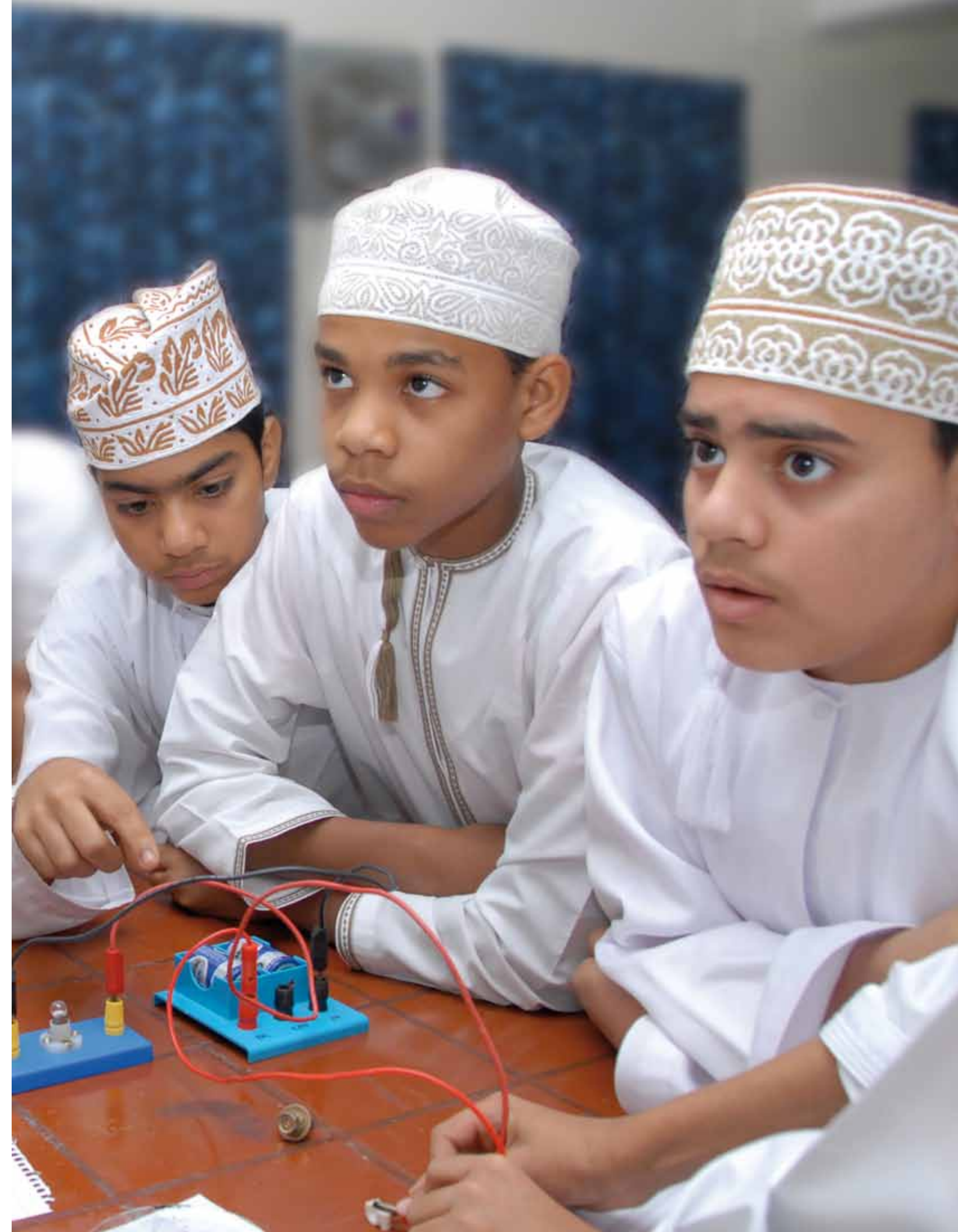
3.3   GENDER DIFFERENCES

As part of their EFA strategies, many countries are striving to ensure equal opportunities for girls and boys both in school participation and learning outcomes. For most of these countries, the challenge is to improve the status of girls in the education system. The situation in Oman is the opposite of the general international trend but is similar to a number of GCC countries.

Girls, on average, consistently outscore boys on all measures of student achievement in Oman.
Over the last thirty years Oman has made very significant strides to promote equal educational opportunities for girls and boys. From a position where girls were underrepresented in the education system, Oman has achieved gender balance in student enrollment; women are now a majority of the teaching force; and they have attained many senior positions in supervision and administration, as well as in curriculum and textbook development (Rassekh 2004).[25] While girls and boys attend separate schools from grade 5, the curriculum content for virtually all courses is the same. Among schools, while much has been achieved in terms of equal levels of inputs, the resulting outputs are not the same. The most striking finding to emerge from this report is the consistent superiority of girls over boys in learning achievement. The size of the average difference is substantial by almost all comparisons.

Public Examinations

Girls tend to perform better than boys on public examinations.
On the all-important grade 12 General Education Diploma examinations (also addressed in chapter 4), the results for public school candidates show that the pass rate for Omani females was 9 percentage points higher than for males (table 3.3). In sharp contrast, males had a marginally higher pass rate than females among the relatively small population of non-Omani students in public schools.

Table 3.3

Oman Grade 12 Examination Results by Gender and Nationality, 2009

	Omani		Non-Omani	
	Females	**Males**	**Females**	**Males**
Number of entries	21,174	22,451	381	368
Number of passes	19,386	18,648	369	359
Pass rate (%)	92	83	97	98

Source: MOE 2009a.

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[25]   According to a report on trends in education statistics, in 1970, 1980, 1990 and 2000 the percentage of girls among all students was 16, 33, 47 and 49 respectively (MOE 2002).

National Assessments

Girls, on average, outscored boys on objective tests used in national assessments.

On each of the grade 7 national assessment subjects, girls outperformed boys in most instances by very substantial margins. The MLA studies at grades 4, 6, 9 and 10 reported that girls outperformed boys in Arabic, mathematics, science and life skills. Similarly, the Canedcom (2004) study reported that girls in grade 4 outperformed boys in all regions.

International Assessments

Girls tended to outscore boys by substantial margins in international assessments of mathematics and science.

The (TIMSS 2007) study provides a rich data source on gender differences in achievement at grade 8. Girls outperformed boys in Oman by substantial margins in each of the four content areas tested in mathematics and also in each of the four content areas in science (figure 3.7). Girls outperformed boys in mathematics by 54 points, the largest difference between genders among the 48 participating countries in the (TIMSS 2007) study (the next highest was Qatar which had a 38 point difference). In science, girls outperformed boys by 61 points, making Oman the country with the third largest score difference between boys and girls after Qatar and Bahrain.

Oman's TIMSS Results by Gender and Content Domain, Grade 8, 2007 *(scaled scores)*
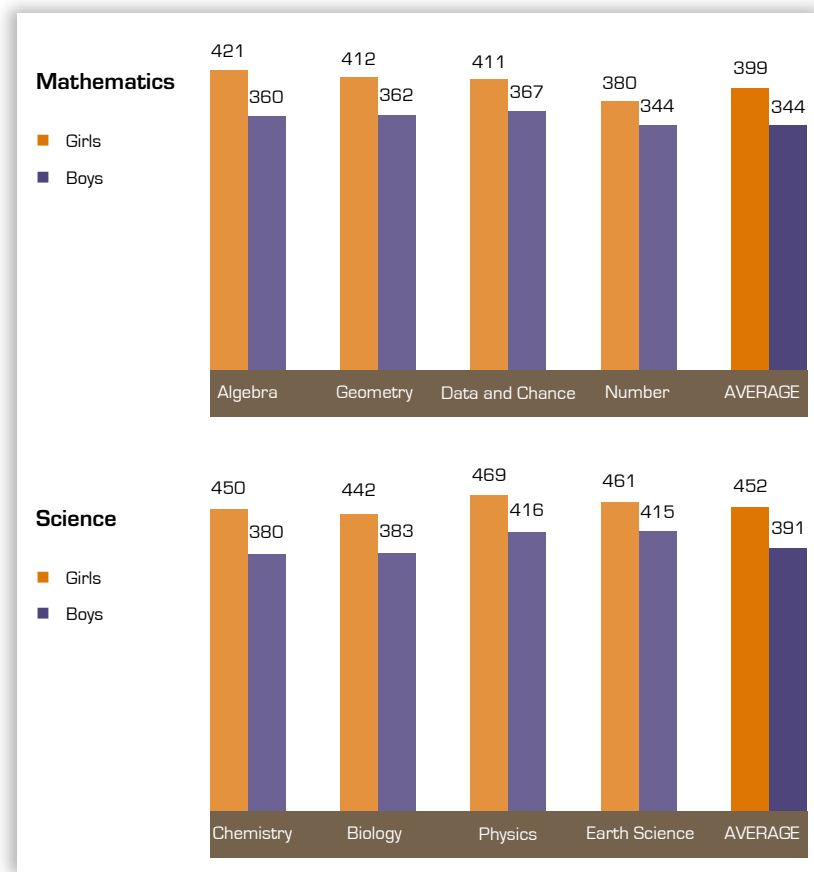
Source: Martin, et al. 2008 and Mullis, et al. 2008.

The extent of superiority of girls over boys in TIMSS 2007 mathematics and science in GCC countries was not as apparent in other regions.

Among all participating countries, girls scored slightly higher than boys both in mathematics (by 5 points) and science (by 6 points). In GCC countries, the average scores for girls were substantially higher than for boys: the average gender difference ranged from 22 points for mathematics in Kuwait to 70 points for science in Qatar (table 3.4). For countries outside of the GCC in the Middle East and North Africa (MENA), the pattern is inconsistent. Girls outscored boys in both subjects in Egypt, Jordan, and the Palestinian National Authority. Gender differences were not significant in either subject in Iran and in science in Algeria and Lebanon. Boys outscored girls in both subjects in Syria and in mathematics in Algeria and Lebanon. In three of the high performing countries, gender differences were not significant with the exceptions of Singapore where girls scored higher in mathematics and Korea where boys outscored girls in science.

Gender Differences in TIMSS, Selected Countries, Grade 8, 2007
(girls-boys, average score difference)

	Mathematics	Science
International average	**5**	**6**
GCC countries		
OMAN	**54**	**61**
Qatar	38	70
Bahrain	32	62
Saudi Arabia	23	43
Kuwait	22	49
Middle East and North Africa (non-GCC)		
Palestinian National Authority	36	36
Jordan	20	34
Syria	-16	-9
Egypt	13	17
Lebanon	-13	(-7)
Iran	(7)	(12)
Algeria	-5	(1)
High performing countries		
Japan	(-4)	(-4)
Korea, Rep. of	(-4)	-8
Singapore	15	(8)

Source: Martin, et al. 2008 and Mullis, et al. 2008.

Note: All average differences were statistically significant except those marked in parentheses ( ).

Teacher Ratings

Basic education cycle two teachers tend to award girls higher ratings.

Teacher ratings are another source of evidence on student learning achievement in Oman. Data containing teacher ratings for each subject showed that girls tend to be awarded higher teacher ratings than boys. In grade 8 mathematics and science, for example, in 2008/09 the percentage of girls getting A or B ratings was far greater than boys —14 percentage points higher for both subjects (table 3.5). A similar comparison at grade 9 across all subjects showed girls were almost four times as likely as boys to get an A or a B teacher rating.

Cycle one teachers tend to award girls higher ratings.

Gender differences in achievement, which are so evident at more senior levels, may have been apparent before boys and girls were segregated into separate schools at the end of grade 4. The MOE did not have objective test data for students in grades 1–3 and until late in 2010 for grade 4 students to test this hypothesis.[26] It did, however, have teacher ratings for all grade 1–4 students for the 2008/09 school year. Female teachers who taught both boys and girls in the same classes compiled these ratings. Data from grade 1 was selected for analysis. This was the grade where the effects of teachers and schools on achievement would be weakest due to the relatively short student enrollment time. Teachers' ratings were examined for the following grade 1 subjects: Islamic studies, mathematics, Arabic language, life skills, music, information and communication technology (ICT), English, art and sport. The percentage of students awarded A, B, C, D or E was recorded for each region. The percentage of students who had received an A for Islamic studies, mathematics, Arabic language, and life skills can be examined in appendix F. The results are consistent: girls received higher ratings than boys in each of the four subjects in each of eight regions (with just one exception). In most instances, the difference between girls and boys receiving an A grade was over 10 percentage points. The results for music, ICT, English and art were similar. Sport was the only subject in which grade 1 teachers awarded boys higher ratings in five of eight regions.

The results of the higher education institution (HEI) selection system underline the extent to which girls outscore boys on the grade 12 examination.

Girls, as noted earlier, outperform boys on the all-important grade 12 public examinations. To help avoid having a disproportionate number of girls in tertiary-level institutions, the Higher Education Admission Center (HEAC) operates a quota selection system. Each year, the MOE announces details of the quota, which vary across disciplines. This system, like any quota system, favors one group (boys in this instance) while discriminating against another group (girls). It favors boys by applying a lower selection cut-off point to their grade 12 examination results. HEAC provided December 2009 data on the number of boys and girls offered places in higher education institutes based on their grade 12 examination results.[27] In engineering for example, 3,624 boys and 887 girls applied and were offered places, making a total of 4,491 successful applicants. Based on the grade 12 examination results, the top engineering applicants (before applying the different cut off points for boys and girls) consisted of 2,911 boys and 1,599 girls.[28] Following the selection system using different cut-off points for boys and girls, it emerged that 732 girls who had applied and would have qualified for engineering were denied places. Viewed from another perspective, had the selection system for engineering been based on the highest marks irrespective of gender, 732 boys who were offered places would not have qualified for engineering based on their grade 12 examination results. Table 3.6 presents data on quota system effects in other major disciplines.

Table 3.5

Gender Comparison of Teacher Ratings, Grade 8 Mathematics and Science, 2008/09

	Girls		Boys		Percentage point difference (girls - boys)
	Number of students	Percentage A or B	Number of students	Percentage A or B	
Mathematics (basic + general education)	16,260	34	16,966	20	14
Basic education	8,824	38	9,176	21	16
General education	7,436	30	7,790	19	11
Science (basic + general education)	16,260	38	16,966	24	14
Basic education	8,824	39	9,176	26	13
General education	7,436	38	7,790	23	15

Source: Authors' calculations based on data from the MOE General Directorate of Educational Evaluation.

Table 3.6

Number of Females with Adequate Marks Not Offered Places in Major Groups Due to the Selection System

Major group	Number
Engineering	732
Science	578
Foundation year	451
Social studies / Art	210
Education	208
Information technology	186
Medicine and Health	140
Business administration	133
Sharia and Law	60
Agriculture and Marine	22

Source: Authors' calculations based on data provided by HEAC, December 2009.

[26] As noted earlier, objective test data for grade 4 students showed that girls outscored boys in almost every comparison of student achievement in each of the 11 regions.

[27] These include SQU, 23 private HEIs, as well as institutes associated with the MOH, MOHE, MOM, MARA, and the Central Bank.

[28] The small difference between 4,510 and 4,491 is due to the number of students at the cutoff point in the separate analysis.

Factors Associated with Gender Differences

A variety of factors, both at home and in school, contribute to the marked differences in achievement between boys and girls.

Teachers in grade 1, where most classes are mixed, consistently rated girls' performance as higher than boys in all main academic school subjects, except sports. A gender gap in teacher ratings of students as early as grade 1 suggests that at least some of the gap arises from the early experiences of children in the home.

Girls tend to use their time outside of school more constructively than boys.

Grade 8 students' responses to the (TIMSS 2007) questionnaire provided some useful insight into out-of-school time use by boys and girls. Compared to boys, grade 8 girls tended to spend less time watching television or videos or playing computer games, and more time reading books for enjoyment or doing homework. For example, 69 percent of girls indicated that they spent at least an hour on homework each night, compared with only 48 percent of boys.

Despite their poor results in (TIMSS 2007), boys do not lack self confidence in their abilities to learn.

The substantial lead that Oman's girls have over boys in learning achievement was not reflected in their scores on the TIMSS measures of self confidence. Boys were just as self confident as girls about their abilities to learn mathematics and science.

3.4 POLICY IMPLICATIONS

Oman's student learning outcomes fall short of those in the leading countries.

The success achieved in expanding education access has not been matched by student learning quality. Student performance falls short of standards set by the curriculum, as demonstrated by the poor results on national assessments. On international tests like the (TIMSS 2007), young Omanis are performing at a level well below the leading countries in crucial subjects, such as mathematics and science. The size of the performance gap is considerable. Data from (TIMSS 2007) mathematics tests indicate that a student on the 90th percentile in Oman (better than 90 percent of students) would be on the 15th percentile in Singapore (a relatively low performance level only better than the lowest 15 percent of students in Singapore).

Improving the quality of student learning should become the central focus of education policy.

Levels of student learning achievement, while similar to those of some neighboring countries, are unlikely to be sufficient to support the aim of developing a vibrant economy independent of extractive industries. Building on the previous successes in expansion, the time is right to focus on improving quality. A quality improvement strategy will involve a series of concerted actions from all parts of the education sector and will require strong sector leadership.

In striving to improve standards, the MOE will require timely and good quality data on key aspects of student learning.

This will require the development of high quality assessment instruments, including the development of a rigorous national assessment system. The technical skills — such as test development, sampling, analysis and report writing — required to design and undertake educational program monitoring and evaluation will need to be enhanced. In addition, it is important for the MOE to make the best use of the information collected to influence policy. The TIMSS 2007 study is a good example of a wealth of information that can be carefully examined and used to support reform.

The gender performance gap is very large both by international and regional standards.

The TIMSS 2007 tests revealed that Oman had the largest gap of any country tested, including GCC countries. Oman's gender gap in mathematics was 54 points, more than double the gap in Kuwait or Saudi Arabia. Other assessment measures show that girls outperform boys in virtually all grades, subjects and regions, irrespective of whether achievement is measured by teacher ratings, national assessments, international assessments or public examinations. Understanding and addressing the reasons behind this difference will help to improve Oman's overall achievement levels. In this regard, well-designed research to identify the nature and sources of the gender gap in achievement standards should be conducted both in Oman and in the GCC.

The gender quotas for higher education access may further reduce the incentive for boys to perform.

Entry to higher education uses a quota system, which ensures a greater number of boys enter university than would otherwise be the case. This quota is intended to ensure a gender balance in entry to universities, but it has the effect of setting lower entry standards for boys. Setting lower standards is undesirable and may exacerbate the gender gap. Consideration should be given to phasing out this quota in the medium term and ensuring that boys and girls work to similar standards.

Both teachers and students appear to have unrealistic assessments of their performance, suggesting that expectations set within the education system are not conducive to raising standards.

In the TIMSS attitude survey, students, including boys, were confident of their ability in mathematics. Teachers also felt they were "very well prepared" to teach the topics covered in the mathematics and science tests. The evidence from TIMSS and the other assessments suggests that this confidence level was misplaced. These unrealistically optimistic self assessments may encourage a culture of complacency, which is inconsistent with the aim of raising standards.

Mobilizing parents to motivate and support their children in learning is likely to be part of the response to the quality challenge.

It may be necessary to launch a high-profile professional public awareness campaign to provide guidance to parents and students on steps to raise learning levels, particularly for boys. These steps might include highlighting effective ways for parents to interact with children outside of school; emphasizing the importance of books and learning resources in the home; increasing time spent on reading and active pursuits; and decreasing time spent watching television or playing computer games.

Improving quality will require rigorous assessments and realistic feedback to teachers and students.

Students and teachers both need to have realistic information about the standards achieved. The development of a rigorous assessment system that provides students and their parents with realistic feedback from the early grades would help to set and maintain high standards.

CHAPTER 4

ASSESSMENT, CURRICULA AND SCHOOL YEAR

The previous chapter presented evidence on the quality of student learning using national and international assessment instruments, as well as teacher ratings. This chapter continues the focus on learning quality by analyzing the grade 12 examination, the major "high stakes" test taken by Omani students, and its impact on the length of the actual school year. It reviews continuous assessment, the subject of much Ministry of Education (MOE) effort in recent years, and describes the official curriculum and supporting textbooks and their influence on examination and continuous assessment. The section includes a discussion of standard setting based on national criteria of student performance levels and comments on current efforts to evaluate overall school effectiveness. The chapter concludes with comments on the education system's technical capacity to conduct research and evaluation studies to promote sound policy making.

4.1   PUBLIC EXAMINATIONS

Public examinations can have positive and negative impacts on teaching and learning.

A public examination system can have a strong impact on what is taught and how it is taught and more importantly on what is learned and how it is learned. A system can have negative educational consequences when teachers "teach to the test," when too much emphasis is on rote memorization or when previous examination content dictates teaching and learning. Box 4.1 presents characteristics of good quality examinations.

Box 4.1
Characteristics of Good Quality Public Examinations

Good quality public examinations should meet a number of conditions. The examinations should be valid and the questions relevant and representative of course content, knowledge, and skills. They should also be reliable. While there are a number of aspects of reliability, for the MOE a key question is "Would the same set of students be selected, for instance, for the next level of education, if the examination papers were to be corrected by other examiners?" They should neither be too easy nor too difficult, as such examinations fail to discriminate among students, an essential criterion for a selection test. "Easy" examinations are likely to appeal to students, teachers and parents but are of limited effectiveness in selecting for a course of study because many students receive similar marks. Examinations should specify clear goals and standards, employ a variety of assessment methods, contain items that measure higher-order thinking skills, and assess students' abilities to apply their knowledge and skills to real life situations, as well as to academic situations.

Source: Kellaghan & Greaney 2004.

The Tests and Examinations Administration Department (TEAD) has responsibility for public examinations in Oman.

TEAD administers the grade 10 selection examination and the high-stakes grade 12 examination, which is the principal formal instrument in the education system for (1) certifying that students have satisfactorily completed post-basic education; and (2) selecting students for jobs or for admission to a tertiary-level institution. The examination is administered in two parts at the end of the first and the second semesters. In 2004/05 a new continuous assessment system was introduced, which is part of the examination process. It aims to reduce overreliance on paper and pencil tests and to reduce the amount of memorization. The TEAD supplies the Higher Education Admission Centre (HEAC) with timely examination data used to select entrants to tertiary institutions.

TEAD staff and internal administrative procedures are regarded as objective and fair.

Positive features of the present system include an appropriate technical approach to examination development, a correction system that stresses reliable scoring, careful preparation of scoring guides and an appeal process. Test validity is addressed by use of a specifications table to reflect curriculum content and expected cognitive levels and to assign relative weights of importance to different aspects

of each subject. There have been considerable improvements in recent years. For example, marking system security and credibility have been enhanced by bar coding examination papers and by sending papers to other regions for correction.

The current high-stakes grade 12 examination has some limitations.

These include lack of adequate preparation time; less than rigorous moderation system; narrowing effect on the curriculum taught in schools; and inadequate emphasis on testing higher-order thinking skills. By international standards, the number of courses taken by grade 12 students is high (appendix G). At the moment, the MOE is considering steps to address some of these issues (appendix H). While incidences of improper behavior at examination centers are reportedly few, nevertheless the MOE should remain vigilant and ensure that the public examination system continues to be viewed as credible (appendix I).

High grades were common in some subjects but not in others.

High marks, which were a feature of past grade 12 examinations (Ganson 1998), do not seem to have been a major issue in 2009 except for a few subjects. Fewer than 5 percent of candidates were awarded an A grade in applied mathematics, pure mathematics, English A basic, English B general, science/environment and Arabic. At the other extreme, at least 30 percent of students were awarded A grades in Islamic culture, sport, drawing, life skills and elective subjects.[29]

4.2   CONTINUOUS ASSESSMENT

Continuous assessment (CA) was introduced to help ensure that students are awarded credit for their work throughout the school year. Under CA, teachers are expected "...to assess their students' performance in accordance with the criteria specified in the relevant Student Assessment Document" (MOE 2010, p.31).[30] It should be stressed that CA has considerable potential for improving pedagogy. Other expected advantages of CA include increasing the range of assessment approaches, helping teachers to know their pupils better, lowering students' anxiety levels, increasing their motivational levels, making the assessment more authentic, helping teachers to diagnose student and teaching weaknesses and to indicate how these might be addressed, and enhancing the overall validity of the assessment process.

Formal continuous assessment is difficult.

CA includes many sources of measurement error, including variation in the types of assessment tasks used; differences in the interpretation and application of performance criteria or marking schemes; and effects of irrelevant contextual information in awarding marks.[31] CA increases the teacher workload. Some have questioned whether all teachers have the assessment skills required for CA and have noted that it has led to some administrative problems, such as dealing with student absences and transfers (Harlen 1994, Kellaghan & Greaney 1992, Pennycuick 1990). Moderation is an essential component of effective CA. Moderation brings individual teacher judgment into line with general standards and helps to adjust teacher-assessed scores among schools. Its primary purpose is to help ensure consistency of assessment standards applied by teachers (Griffith 2004).

Some aims of the CA approach are being achieved but many others remain a challenge.

Training in CA using the cascade model approach commenced in 1998. In 2005/06 some of the training approach was revised in response to teacher comments on the inconsistency and complexity of the original documentation. To determine the CA program's effectiveness, the report's study team carried out a national survey of randomly selected teachers (751 participants) across all districts.[32] The survey results suggest that teachers strongly support the concept of CA. A majority (70 percent), however, claimed that CA imposes great demands on their teaching time. Two out of three teachers had recorded CA marks within the previous week. While CA is intended to provide teachers with formative-type information, the findings suggest that this objective is not being achieved. A majority (86 percent) agreed with the statement that "Most teachers do not think about what they are filling in" and about 90 percent agreed with the statement "I seldom look back at what I have written in the report card." Approximately half the teachers claimed that they had not received any training in CA. Most of the remainder indicated that they had received up to two hours training (MOE 2009c).

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29 The importance of marks in individual subjects varies from student to student, depending on the course of third-level studies being considered. The MOE should carefully monitor the impact of marking standards across subjects to ensure that some subjects do not have an undue influence in determining HEAC marks. In this regard the average mark or difficulty level of a subject is not the critical factor; rather it is the subject with the largest variation in marks that tends to contribute most to a student's final rank order in the competition for specific courses of study.

30 CA is the norm in basic education cycle one. In cycle two, formal examinations are expected to account for approximately 30 percent of the total mark in most subjects. For post-basic students, 60 percent of the marks in key subjects are awarded for the written examination and 40 percent for CA in grade 11; in grade 12 the corresponding percentages are 70 and 30 percent, respectively.

31 This is not a measurement mistake; it refers to the difference between the student's actual score or mark and the score he or she would have received on an unlimited number of perfectly parallel forms of the same test (that is, the student's "true" score).

32 The average number of respondents per district was 68 (with a standard deviation of 25). The sample included male teachers (40 percent) and female teachers (60 percent) and a minimum of 63 teachers in each of the key subject areas: Islamic studies, Arabic, English, mathematics, science, and social studies, as well as 115 teachers who taught "other" subjects.

Other sources have revealed some additional problems in using the CA approach.
Follow-up discussions, which were held with panels of teachers, revealed that there was a lack of clarity on what and how to rate students. They also confirmed that CA imposed a considerable workload on teachers, and CA use for formative assessment was very infrequent. Some teachers appeared to be recording student marks but were not using the material for formative assessment. A number of teachers expressed confusion with the separate assessment directions for the profile charts in the teachers' books and the directions issued by the Directorate General of Educational Evaluation (DGEE). Participating teachers remarked that some supervisors and senior teachers were unsure as to what was required in implementing CA. There was general agreement that the intended message got diluted when training was delivered using the cascade model approach and that designers of training materials should participate in the training process. Most teachers in the focus groups indicated they did not study the CA records of students in incoming classes. They considered the amount of CA information on incoming students excessive and difficult to summarize. Instead of using this information, they tended to develop their own tests to gain insights into students' strengths and weaknesses. A separate study (Creative Associates 2005) revealed that some parents thought CA was subjective; it led to grade inflation; and factors unrelated to student performance could affect the final CA grade.

DGEE's challenge is to ensure that teachers and other key stakeholders readily understand the CA support materials and accompanying training content.
CA and moderation of marking systems used in formal public examinations are complex and require training (box 4.2).

Box 4.2
Continuous Assessment and Moderation: Some International Experience

Experience in other countries and states that have used CA as part of high-stakes assessments (such as some Australian states, New Zealand, South Africa, Sweden and the United Kingdom) serves to underline the complexity of the moderation process. Considerable effort has been made to calibrate CA marks statistically after the assessment against other measures, such as aptitude tests, items drawn from an item bank or an external examination of the same subject area. More recently the aim has been to assist teachers to conduct marking during the year rather than to adjust their marks at the end. There is general agreement that effective moderation requires teachers to follow clearly defined and agreed procedures and to acquire considerable training. This training should involve teachers in identifying assessment criteria, in developing ownership of these criteria and in understanding the language used. In Western Australia, for example, the Curriculum Council offers teachers a package that includes a school moderation visit, consensus moderation, assessment tasks teachers can use for practice purposes, and district seminars where teachers can compare notes. In addition, education officials designated as "accreditation and moderation officers" are available to teachers. It is only when teachers use as much of this support as they wish that statistical moderation is implemented.

Source: Harlen 2004; Wilmut and Tuson 2005.

4.3   CURRICULUM

National curricula serve national educational priorities and are important government responsibilities.
As in most countries, curriculum development in Oman is assigned to the MOE, specifically to the Curriculum Development Directorate (CDD). The curriculum is expected to reflect the needs of Omani society (including understanding and coexisting with others, emphasizing individual rights, and maintaining the values and positive traditions of Omani society) and link education outcomes with labor market demands (International Bureau of Education 2006). A national curriculum should include precise details about the content, educational processes and courses of study.

The CDD has an extensive work program.
It has developed frameworks for each subject, describing concepts, skills and values that students are expected to acquire. The CDD, whose origins extend as far back as 1973, has a large staff of 221 grouped into six departments. CDD personnel indicated that they placed considerable emphasis on developing objectives and materials that promote learning higher-order thinking skills. The CDD also develops educational support materials, drafts content for textbooks and prepares videos. It supports a pilot project for grades 1–4 that promotes learning through using one class teacher, a single book, an integrated approach to literacy in Arabic and English and a focus on the child's cognitive, physical, emotional, social and language development. Recent curricular reforms have focused on (1) introducing new subjects, such as information technology, science and the environment, and life skills; (2) limiting the amount of theoretical content; (3) making learning more meaningful by relating content to the students' practical world; (4) reducing the emphasis on memorization; and (5) reducing dependence on textbooks as an informational source.

The CDD actively promotes respect for peace and diversity.
There is justifiable concern that curriculum and textbook materials in some countries do little to encourage peace and social cohesion (Greaney 2006). The CDD asserts that peace, respect, diversity, democracy and multiculturalism have been incorporated in new school frameworks and learning resources and that teachers' guides for all subjects reflect these goals or aspirations. Four committees (writing, revision, steering and education policy) that oversee curriculum design and implementation are expected to confirm the new materials are consistent with these goals and that stereotypes or incorrect versions of history are omitted.

The CDD requires technical skills in curriculum development.
The large CDD staff has been recruited for the most part from the teaching profession. While this background sensitizes staff to classroom realities, it has not provided CDD with a core staff formally trained in and familiar with curriculum development and evaluation.

Curriculum development should be a participatory process.
The CDD should continue to work closely with other MOE departments and other educational stakeholders, including teachers and supervisors. Discussions with focus groups and with senior MOE personnel suggest that there should be greater input from other stakeholders, especially those with extensive teaching experience.

The current language curriculum places undue emphasis on grammar and does not give adequate emphasis to reading for knowledge and enjoyment.
A considerable body of research evidence underlines the importance of reading for knowledge and enjoyment not only for vocabulary development and comprehension skills but also for developing the habit of reading (Brozo et al. 2007, Guthrie and Greaney 1991). The current English textbooks

place a heavy emphasis on skills development and contain relatively little literary, humorous or adventurous material — important in promoting reading for knowledge and enjoyment. There is a relatively heavy emphasis, both in the English and Arabic language textbooks, on definitions and grammar, some of which are rarely used (such as "the third conditional" and "modals of possibility" in the grade 10 skills book).

The production quality of books reviewed during a visit to the textbook unit and of English books subsequently reviewed was impressive.
Books prepared for basic education are considered much better than those published for general education. Books were well illustrated in four colors. The "English for Me" series impressed reviewers for the substance of the texts and supporting artwork; its scope, sequence and spiraling; coverage of topics related to Omani culture and environment; treatment of special needs (wheelchairs were featured); relevance (sections in grade 12 were related to the work world); and range of topics covered. More attention might be given to including long passages of continuous text and reducing the activities in some English books. More than one reviewer of content and artwork should check galley and page proofs to ensure that new books do not contain errors.

In general, the delivery of textbook and educational materials is satisfactory but a number of issues remain.
The textbook section should continue to ensure that textbooks are delivered in time for the beginning of the school year. In recent years, delays occurred at the level of the independent tendering board and in printing and distribution. Presentation of material on CDs (a responsibility of the IT Department) is expected to develop students' listening skills—a priority of the curriculum. Some schools, however, do not have CD players and some have not collected the CDs from stores.

The Curriculum Evaluation Department (CED) has an overly ambitious work program and needs to be strengthened.
The CDD established a small Evaluation Department in 2005. CED has a mandate to conduct evaluation studies of the implemented curricula; suggest curriculum modifications; and model its approaches on recent international trends in curriculum evaluation. It has been heavily involved in developing the General Framework for Curriculum and coordinating the curriculum updates and the scope and sequence charts for various subjects. Working in collaboration with other departments, it is expected to contribute to future curricular plans and strategies, implementation and studies of student learning achievement levels. CED has organized conferences and workshops related to curriculum development and evaluation.

CED's current work program responds to the expressed needs of the other CDD departments.
It includes evaluations of the curricula for English language (grade 3), science (grade 8), Islamic studies (grade 11), Arabic language (grade 3), music (grade 3), life skills (grade 6), fine arts (grade 3) and physical education (grade 1). The CED has expressed a need to strengthen its personnel and upgrade skills in curriculum evaluation in part through focused training and attendance at international conferences.

4.4 OFFICIAL AND ACTUAL SCHOOL YEAR

Oman is comparable to other countries in the number of days schools are officially open for instruction.
Effective learning depends on a number of factors, including teaching quality, home background, opportunity to learn, student effort and time spent on the task of learning. In 1998 as part of its reform program, the Government, aware the school year was short and trying to improve student learning quality, increased the number of instructional days in basic and general education from 160 to 180 days and the school day length from four to over six hours.

There is a substantial difference between the number of days schools are officially open for instruction and the number of days students attend school.
Documentary evidence, as well as discussions with senior MOE personnel, suggests that the goal of 180 instructional days has not been achieved (MOE 2006). The 180-day figure includes days when schools are closed for national holidays, religious events, public examinations and some adverse or unusual circumstances. The unusual unofficial practice of allowing grade 12 students to be absent from schools for lengthy periods prior to examinations greatly reduces the actual number of days these students attend school. An unpublished (2006/07) MOE study noted that students lost 28 teaching days in the first semester and a further 17 days in the second semester due to a combination of days devoted to taking examinations and studying at home prior to sitting examinations. Despite repeated efforts, the study team was unable to quantify the precise number of days students actually spend at school, including grade 12 absences for examination preparation. In addition, it is likely that this number of days differs by school. Focus group meetings held by the study team with students and teachers indicated that during their final grade 12 examination boys stay home for up to 40 days and girls for 24 days. For grade 12 students, the cumulative effect of these absences plus the days assigned for formal examinations results in the amount of formal school instruction as low as 110 days for boys and 126 for girls.

The effects of public examinations on school absenteeism are not confined to grade 12.
In addition to time lost by grade 12 students, student-learning opportunities in lower grades are seriously affected because they do not have lessons during examination periods. Basic education cycle one teachers tend to be used as examination enumerators and cycle two teachers as examination markers.

By international standards, Omani students appear to have less school instructional time.
Data on instructional hours in Oman and in other countries are difficult to obtain. Assuming that, for the purpose of comparison, students in Oman's public schools receive formal classroom instruction for 130 days each year and each day consists of eight periods of 40 minutes. This amounts to approximately 690 hours of instructional time per year. In sharp contrast, most countries allocate between 700 and 800 yearly hours of instructional time for pupils in grades 1 to 4 and between 800 and 900 yearly hours in grades 5 to 8 (Benavot 2004). The study team also used data from the OECD Programme for International Student Assessment (PISA) study of 15–16 year olds to estimate the average amount of instructional hours (excluding the small amount of time given to remedial and enrichment work) in the 38 participating countries.[33] It was assumed that the average amount of instructional time received by 15–16 year olds would be approximately the same for students in their final year of secondary

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[33] For OECD countries, including time for remedial or enrichment classes would have increased the overall "in school" activity time by an additional 1.5 hours.

school. Table 4.1 presents data on the total number of instructional hours from a list of selected OECD and OECD-partner countries. These show that the total number of instructional hours is much higher in these countries than in Oman; the average amount of instructional time of 905 hours in the 38 PISA countries was approximately 30 percent greater than the estimated 690 hours for Oman (OECD 2004b).

The cumulative effect of the lengthy unofficial annual school closures over the life of a student is unknown but is likely to be substantial.
The cognitive development advantage of students in the countries listed in table 4.1 is likely to be even more pronounced as many would have had the added benefit of two years of kindergarten or preschool. Common sense suggests that the current practice to allow students in Oman's public schools to be absent from school for such long periods does little to boost national levels of student learning achievement or to enhance confidence in the education received by students completing grade 12.[34]

Table 4.1

Instructional Hours during School Year in Selected Countries, 2004

	Hours per week	Weeks per year	Hours per year
Thailand	30.5	39.7	1,211
Korea, Rep. of	30.3	35.6	1,079
Hong Kong SAR	26.5	35.4	938
France	24.8	37.8	937
Australia	24.1	38.6	930
Germany	22.6	41.0	927
New Zealand	23.5	39.4	926
Japan	23.8	38.9	926
Hungary	23.9	38.1	911
Sweden	22.5	39.7	893
Tunisia	27.6	31.9	880
Finland	22.6	38.3	866
Netherlands	23.9	36.0	860
Uruguay	21.6	39.6	855
Denmark	22.2	38.0	844
Russian Federation	23.8	35.0	833
Norway	22.1	36.6	809
United States	22.2	36.0	799

Source: OECD 2004b.

4.5 STANDARD SETTING

Standards can provide objective information for governments based on national criteria of student performance levels.
In recent years, education policy makers and curriculum authorities in many countries (such as the USA, England and Australia) have emphasized setting standards and specifying what students should be able to do at the end of a number of stages of their formal schooling. Governments use student performance on objective test items to establish standards, which are described using terms such as "proficiency," "achievement" or "skill" levels. OECD's PISA program, for example, has identified a test score cut-off point, below which students are considered to be at serious risk of not achieving sufficiently to participate effectively in the 21st century work force. Standards can be used in Oman, for example, to (1) indicate if government expectations regarding student learning levels are being met at the end of cycle one or cycle two of basic education; (2) provide baseline information for monitoring progress over time; and (3) show if particular subgroups (such as boys or students in individual governorates and regions) are meeting expected achievement levels.

Standards also can provide useful information for teachers, students and parents.
Without clear, approved and common targets, teachers risk becoming complacent about their students' learning achievement and having low standards for acceptable student performance levels. Over time, teachers, students and parents (who receive descriptive reports about their children's progress three times per year) may come to accept low performance levels as adequate. Without standards or reference points, policy makers risk having no valid basis for determining the percentage of students who meet minimal or desirable standards of learning achievement by the end of grade 12.[35]

Teachers awarded relatively high ratings for mathematics and science.
Teachers' official ratings for 2008/09 were examined in mathematics and science for grade 8 (basic and general). Teachers' formal ratings of individual student progress had been converted from overall marks into letter grades (A, B, C, D or E). The *General Document for Students' Learning Assessment* (MOE 2007c) specifies the criteria to be used in awarding grades (table 4.2). Teachers awarded 27 percent of students either an A (13 percent) or a B (14 percent) in grade 8 mathematics. In science, teachers awarded 32 percent of students either an A (14 percent) or a B (18 percent).

Table 4.2

Teacher Ratings: Criteria for Awarding Grades

Grade	Percentage range	Level
A	90-100	Excellent
B	80-89	Very good
C	65-79	Good
D	50-64	Average/satisfactory
E	< 50	Needs help

Source: MOE 2007b.

[34] It is interesting to note that private schools in Oman have more instructional hours, partly due to the fact that they take just one examination (at the end of the second semester).

[35] Examinations are not suitable for monitoring standards for a variety of reasons, including changes in questions from year to year and students having options on what items and subjects to take.

Teachers' ratings and objective test scores differ.

Teacher rating data was used in an attempt to compare national-level standards (from the national database) with external objective data provided by Trends in International Mathematics and Science Study (TIMSS). This comparison assumes that teachers' rating standards did not change much between 2007 and the 2008/09 school year. The percentages of grade 8 students who received "excellent" or "very good" ratings from their teachers, as noted previously, were 27 percent in mathematics and 32 percent in science. The key question for the policy maker is "Did a somewhat similar percentage of Omani students record similar ratings based on their performance on TIMSS?" TIMSS used the terms "advanced" and "high" to describe its two highest rating categories. The data, reported in chapter 3, show that based on their test performance as few as 2 percent in mathematics and 8 percent in science received "advanced" or "high" ratings on the TIMSS test.

Students may have unrealistic perceptions of their learning achievement levels.

This comparison of teacher ratings with test score data suggests that teachers' ratings of student achievement levels are lenient and are not in accord with the evidence provided by objective data. Teachers' marking standards would have given many grade 8 students the impression that they were performing well in school. If it is accepted that the TIMSS international benchmarks are appropriate for Oman, the present marking system based on teacher ratings may leave many grade 8 students with unreasonable and inflated perceptions of their learning achievement levels in mathematics and science.

The MOE might consider one of a number of options to ensure that teachers are aware of the student performance levels expected.

One option is to develop sample-based criterion-referenced tests and make them available for teachers to assess the percentages of students achieving or mastering key learning objectives.[36] The MOE could also develop norm-referenced tests to be administered by schools, from which teachers can assess how well their students are performing against national norms.[37] MOE personnel and/or local teams with some assessment experience could create benchmarks to correspond to a percentile score. Students would be placed in one of three or four categories based on their performance on national-level tests (to be developed). The data could be used to calculate the percentage of students in each region performing at each benchmark category. Teachers, policy makers and others could develop an understanding of what students can and cannot do by looking at the objectives assessed at each level. Policy makers are likely to find information of this nature more useful than percentage scores or letter grades. Appendix J contains examples of standards-based assessment approaches, which can be used by Omani policy makers in a cross-regional comparison of student achievement levels.

Standards-based assessment approaches can be also used to develop tests for teachers to use as information or diagnostic tools.

Ireland used the results of a national mathematics assessment to develop an assessment instrument for grade 4 teachers who wished to find out how well their students were performing by specific standards. A national center developed five achievement levels or bands, two of which (the highest and lowest) are shown in box 4.3.[38]

Band 5: Advanced Level of Achievement (115+)

- Number/Algebra: Pupils at Band 5 can convert fractions to decimals.

- Shape and Space: They can list properties of types of triangles and make informal deductions about 2-D shapes.

- Measures: They can convert liters to milliliters, grams to kilograms, and order measures of length and weight. They can solve word problems involving multiplication of weights, division of capacities and measures of time.

- They can also do the tasks described in Bands 1, 2, 3 and 4.

Band 1: Low Level of Achievement (65–84)

- Number/Data: Pupils at Band 1 can recall basic multiplication and division facts and translate simple word problems into number sentences. They can solve routine one-step word problems involving multi-digit subtraction of whole numbers.

- Shape and Space: They can identify line symmetry in 2-D shapes, obtuse angles in 2-D shapes, nets of 3-D shapes and visualize properties of 3-D shapes.

- Measures: They can solve problems involving subtraction of money.

- Data: They can construct simple bar charts.

Source: Educational Research Centre 2008.

Standards can help school-, regional- and national-level monitoring of key educational variables.

Oman could develop detailed assessment approaches, which would allow schools to determine how well they are performing in terms of national performance levels and also in terms of schools serving similar students. Australia, for example, has introduced a National Assessment Program for Literacy and Numeracy (NAPLAN), which permits comparisons among states and among statistically similar schools across Australia (box 4.4).

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[36] A criterion-referenced test (CRT) determines how well a person can perform *compared to a specified standard*.

[37] A norm-referenced test (NRT) helps rank students on the basis of learning achievement results. It indicates how a student's score *compares to others* in terms of a norm, such as a national average score. It provides little or no information on a student's actual level of learning.

[38] Students at each level would be expected to get at least 50 percent of the tasks correct. Students who failed to answer 50 percent of the Band 1 tasks or items were classified as "Below Band 1".

Box 4.4

Australia's National Assessment Program for Literacy and Numeracy

All students from Year 3 to Year 9 are assessed in reading, writing, language conventions (spelling, grammar and punctuation) and numeracy across a range of achievement levels and on a single scale. Individual student performance on each test is shown on national achievement scales. Six bands are reported for each year level. The second lowest band at each year level is considered the national minimum standard for students at that year level. The numeracy skills and bands for Year 3 are given in the following table. Appendix K presents a summary of the bands for Year 5 in reading, writing, language conventions, and numeracy.

Year 3 Numeracy Skills and Band

Band	Numeracy skills
6	Solves a problem involving division with a remainder. Performs subtraction involving numbers up to 100. Applies knowledge of fractions to convert from minutes to hours. Interprets a map and follows directions to locate a position.
5	Solves a money problem involving multiplication and rounding. Interprets data in a table to solve a subtraction problem. Uses understandings of simple fractions to interpret a recipe. Uses knowledge of addition strategies to complete a number sentence. Matches analogue time in words to digital time. Identifies the number of faces in a 3D model and identifies the top view of a cone.
4	Adds 2 two-digit numbers. Counts half of a collection of objects to solve an everyday problem. Knows multiplication facts up to 10 x 10. Continues a number pattern based on subtraction. Recognizes 2D shapes after they have been rotated or reflected. Identifies a prism displayed in an everyday context.
3	Measures an area on a grid using informal units. Identifies a specific date on a calendar and identifies the possible outcomes of a simple chance event. Identifies the pentagon in a collection of 2D shapes.
2	Identifies a three-digit number written in words. Solves a word problem involving the order of numbers less than 20 and identifies the repeated addition to match a diagram showing equal groups. Reads a simple scale to estimate capacity.
1	Adds tally marks in a table to calculate a total. Selects the next number in a simple number pattern. Recognizes an instrument for measuring length. Identifies the missing part of a puzzle and uses coordinates to locate a position on a simple grid.

Source: Australia Curriculum and Assessment Reporting Authority 2008.

Standard setting in education is not limited to student learning.

Many countries have used sample-based national-level results to improve education policy making; promote more public awareness about the state of education; improve in-service teacher education; and promote curriculum reform (Kellaghan et al. 2009). In addition to standards of learning achievement, the MOE can also develop standards in other areas, such as amount of student reading for enjoyment, knowledge and use of ICT, and in-service teacher training. Prompted by the increase in monitoring and accountability, more ministries of education are setting standards in a range of diverse areas, such as training and provision of textbooks. Oman, for example, expects to have completed the development of standards for head teachers, teachers and supervisors by the end of 2011.[39]

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[39] Report under preparation by Center for British Teachers.

4.6   WHOLE-SCHOOL EVALUATION

Schools in Oman are expected to monitor data on student performance, analyze the data, evaluate the quality of key aspects of the school's work, plan changes in light of the findings and implement the plan (MOE 2006).

A school's ethos, values, and administrative and management style can foster an atmosphere that appreciates high quality teaching and learning standards and inspires a teaching and administrative staff to cooperate for the good of the students and the school. The MOE has instituted a school evaluation system to help make schools more self critical and responsible for their own development. It introduced a whole-school evaluation program to judge the quality of (1) school administration, (2) teaching and (3) student learning, including students' attitudes toward learning. As part of the whole school evaluation process, each teacher is required to complete a self-evaluation form, which is countersigned by the principal. Teachers are assessed a number of times by their supervisor and once a year by the school principal to determine if their students have obtained and can apply appropriate knowledge and skills and also have positive attitudes about learning. Teachers' and students' opinions are obtained about aspects of the school. A team headed by the principal is expected to review the collected information and determine what follow up actions should be taken.

Whole school evaluation is a comprehensive labor-intensive approach designed to bring about overall school improvement.

An external evaluation is carried out by a team of 12–20 educators, including supervisors, regional officials and one staff member from the central MOE. The team visits 10–50 percent of classes in each school; examines "good", "average" and "poor" student portfolios; uses a checklist to evaluate teachers and talks to students and parent council members only. At the end of the three- to five-day evaluation period, the team meets with the school principal and supervisors and makes suggestions for overall school improvement. The evaluation process is intended to check educational standards in Oman's public schools, to determine the educational performance level of each school and to discover the extent to which each school was able to achieve the expected objectives. The process, however, does not require students to take objective measures of student achievement to help schools and teachers assess if the learning standard across schools is "good enough". The regional administrative supervisor is expected to follow up to check if a school has made improvements in its administrative procedures. The team issues a report within two to three months of the evaluation. The number of schools evaluated has been reduced from about 150 per annum to 22 schools in 2009/10. The time demands and opportunity costs of the evaluation process are substantial, even allowing for the fact that whole-school evaluation is part of the routine responsibilities of some team members. Discussions with teachers and with senior MOE personnel suggest that the quality of the supervisors varied. Some schools were unclear how to use the information. There was also concern that many reports were similar and that some new principals did not consult the reports.

4.7 CAPACITY BUILDING IN RESEARCH AND EVALUATION

Sound education policy making requires timely, reliable, objective evidence on student learning levels and on other education system aspects.

Many agencies and units within the MOE have carried out research and evaluation studies. At present, responsibility for giving objective feedback on education aspects is shared among a variety of groups, including the DGEE, CED, Directorate General for Planning and Quality Assurance, Department of School Performance Evaluation, and Quality Assurance Office in the Directorate General of Private Schools. Studies have been completed on various topics, including assessment and evaluation methods, examinations, promotion policies, educational guidance, homework and use of microcalculators. The TEAD, for example, has carried out an item analysis of the grade 12 papers (International Bureau of Education, 2006). Discussions with staff engaged in research and evaluation revealed concern over issues related to technical capacity, specifically in areas such as statistics and sampling, and also with the lack of opportunities to develop skills in key aspects of educational research and evaluation.

4.8 POLICY IMPLICATIONS

A focus on learning quality is central to Oman's drive to improve education. The evidence presented in this chapter suggests areas for student learning improvement in curriculum, assessment, standards and evaluation.

Length of School Year

As a priority, policy makers should plan to lengthen the effective school year.

Students in Oman's public schools spend far less time in school (up to 30 percent fewer hours in many instances) than their counterparts in developed economies. Increasing the actual number of days students spend in schools will require enforcing strict rules regarding school closure and addressing the current approach to administering public examinations.

Having one final examination rather than two would increase the length of the effective school year.

It would also allow TEAD more time to develop good quality examination papers. Removing the first semester examination would create some modest savings.[40] In many countries, one final examination is the norm and the formal curriculum assessed often extends over a two- to three-year period. Given the apparent popularity of the current two-semester approach, especially with students and teachers, strong and persistent MOE leadership supported by a public awareness campaign will be required to make the change. One final examination will allow more time for students to master the key content areas covered by the curriculum.

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[40] Monitoring/invigilation and marking, which accounts for approximately 60 percent of overall nonsalary costs, would still have to be carried out on first semester subjects. Data supplied by TEAD indicate that it costs approximately RO 322,000 to administer each semester examination (excluding internal operating costs and staff salaries).

Box 4.5

Enhancing TEAD's Technical Capacity

A number of established examination bodies in African countries operate short-term practical exchange programs for examination officials in their region (Kellaghan and Greaney 2004). Regional capacity development initiatives in GCC countries could also explore ways of maintaining standards, combating malpractice, and training in new assessment and scoring techniques. Establishing twinning arrangements with overseas agencies could also enhance technical capacity. TEAD should take steps to ensure that a number of officers get training in statistics and are given adequate time to conduct annual analyses of results. Senior TEAD staff could also participate in the annual conference of the International Association for Educational Assessment, the professional body for public examination systems.

Source: Authors.

Box 4.6

Improving Understanding and Use of Continuous Assessment (CA) Materials and Processes

1. Provide concrete examples in written form or on the web of how to rate student work at different levels.

2. Establish the utility of the various forms that have to be completed by teachers (for example, is it necessary for English teachers and supervisors to fill out student forms in both English and Arabic?).

3. Train a group of educators in each region to provide guidance and leadership in CA to schools in the region.

4. Ensure that teachers up to grade 12 have opportunities to provide feedback or to seek clarification from regional and national offices on the implementation of the CA program.

Source: Authors.

Public Examinations Including Continuous Assessment

More use of examination results can improve teaching and learning.

At this rapid period of change in the education system, it would be inappropriate, especially for students and teachers, to suggest major changes in the examination system. Nevertheless, some key improvements can be made, especially if the TEAD were relieved of some tasks—notably administering two major rounds of public examinations in one year. The TEAD should expand its role beyond the logistical aspects of conducting examinations. Since many students do not advance to tertiary-level institutions, the MOE should consider the value of including in the formal certificate details of student competencies in key subject areas, as opposed to percentage marks. In addition to sending examination reports to interested Directorate Generals, the TEAD should also give detailed feedback to teachers on the most common mistakes students made in examination papers. A newsletter prepared by the TEAD with input from the CDD can communicate common errors to teachers. Topics ignored by candidates could be identified. The TEAD could provide examination-related feedback about problem areas to teachers via in-service courses and the education portal. In English, problem areas identified in the grade 12 examination could be featured in the journal each English teacher receives, as well as in presentations and workshops at prominent events, such as the National English Conference.

The TEAD should enhance its technical capacity level and support a long-term research and evaluation program.

The MOE should support a long-term research and evaluation program designed to enhance the quality of the public examination. Box 4.5 outlines a number of strategies for enhancing technical capacity and appendix L presents a summary of research and evaluation topics designed to improve public examination quality.

The MOE could implement a program of activities designed to improve aspects of the CA program, including the moderation process.

The TEAD could establish formal moderation review committees to evaluate the validity and reliability of assessments made by grade 12 teachers. All schools could have informal moderation procedures that require subject teachers to arrive at common understandings of the criteria to be used to assess student work. The TEAD could develop a pilot training program in moderation techniques, revise it in light of evidence and commence a large-scale training program to help ensure consistency of ratings among and within schools. Box 4.6 contains some additional suggestions for enhancing CA implementation. Future efforts to enhance the CA approach might start by considering teachers' understanding of CA, as well as their concerns, insights and experiences. The MOE could secure the services of an independent agency to carry out a formal evaluation of the CA program, which would include a review of training approaches and materials, time taken to complete records, teachers' understanding and use of CA, as well as a sample-based evaluation of the impact of the CA mark on the final examination mark.

The TEAD should develop capacity in item banking.

This will require subject matter specialists to draft, discuss and redraft items that are consistent with the official curriculum and not biased (in terms of gender and region, for example) and to agree on acceptable and unacceptable answers. All potential item bank questions have to be pilot tested and checked by review panels for curricular and psychometric properties. Over time, questions or items from the bank can be included in the public examinations to help monitor trends. Formal use of item banks as part of the public examination system should be delayed until there is adequate technical capacity in place and a sizeable bank of valid piloted test items.

Curriculum

The CDD should consider global trends in curriculum development.
Increasing influence of international media, technological developments, an international market place for labor and increased travel opportunities call for students to be prepared to participate in an ever-increasing global environment. As a result, the CDD has to reflect on global trends in approaches to curricula, especially in the areas of science, mathematics and literacy. This can be achieved in part by examining national or state curriculum documents many of which are available on the web and also by looking at the framework documents that accompany international- (for example, Mullis et al. 2006) and national-level assessments, which are also readily available on the web. Having reviewed experiences in other countries, the CDD should reject those that are not appropriate and seriously consider inclusion of those that seem likely to improve the overall quality of the Omani curriculum.

Objective data from national and international assessments should be used to gain valuable information for curriculum development.
CDD personnel could review this information and determine if aspects of the current curriculum need to be dropped, modified or assigned to a different grade level. Examples of how some countries have used objective assessment information are given in appendix M. As it prepares new curriculum drafts, the CDD should continue to allow time for reasonable inputs from education stakeholders, including teachers and supervisors.

The CDD could consider expanding the scope of the language curriculum.
English language is now taught in Oman's public schools in grade 1 and in private Arabic schools in the first year of kindergarten. The next round of curriculum development in the two major subjects, Arabic language and English, could consider expanding the scope of the current curricula. The CDD should give serious thought to including concepts related to reading from international literacy research. These are currently reflected in national assessments, such as National Assessment of Educational Progress (NAEP) in the United States and in international assessments, such as the Progress in International Reading Literacy Study (PIRLS) and PISA, and indicate what reading skills students are expected to master in many other countries. In addition to word recognition and literal comprehension, these skills include the following elements:

- Retrieve explicitly stated information;

- Make straightforward inferences about ideas or information not explicitly stated;

- Interpret and integrate ideas and information, such as discerning the overall message or theme of a text; and

- Examine and evaluate content, language, and textual elements, such as evaluating the likelihood that the events described could really happen.

It should be noted that the PIRLS test, which will be administered in Oman in 2011, will examine these literacy skills.

CDD staff need long- and short-term training programs to strengthen their technical competence in theoretical and practical aspects of curriculum development.
Long-term programs should include postgraduate qualifications for promising, relatively young staff at overseas institutes with a proven track record in curriculum development and evaluation. Working closely with a well-established curriculum development agency, the CDD could also support a series of short-term programs, especially in the key subject areas, such as standard setting.

The CDD's evaluation unit should limit its work to what can reasonably be achieved without compromising quality.
If the evaluation unit is to remain within the CDD, it could consider establishing a twinning arrangement with an internationally respected center that conducts high-quality evaluations. This collaboration could help design and implement curriculum projects and build capacity to use key evaluation models and methods. Future work should address the key issue of relatively low student achievement scores and identify the curriculum's role in enhancing performance. The CDD, through its evaluation unit supplemented with technical support, could (1) assess whether the curriculum and textbooks are promoting higher-order thinking skills; (2) use objective data from national and international assessments of Omani students to modify the curriculum, textbooks and other educational materials; and (3) compare mathematics and science curricula covered in international assessments with the Omani national curricula to determine what aspects might be incorporated. The CDD should also play an active role in future national assessments of education achievement levels, especially at the design, test development, analysis and report writing stages. These activities might be undertaken by a strengthened evaluation unit at the CDD or by an external professional body.

Whole-school Evaluation

It is time to evaluate the impact of the whole school evaluation program.
The MOE should carry out a formal review of the whole-school evaluation process. The review should focus on the utility of the current program's information. It should assess and evaluate (1) the extent to which the existing self-evaluation reports have been used by schools and teachers, have helped improve pedagogical skills and have enhanced education quality; (2) the time demands placed on teachers by the evaluation; (3) the financial and opportunity costs of the external evaluation; and (4) the extent to which school staff have studied and acted on recommendations of the external evaluation reports. The proposed review might also consider the impact of reducing the number of personnel involved in the external evaluation and the number of days required to complete the process.

Standard Setting

Policy makers and others should approach standard setting with some caution.
It takes time to develop appropriate standards that are valid, reliable and evidence based. Teachers, curriculum experts and other stakeholders have to discuss and agree on what constitutes different performance levels (such as "basic", "proficient" and "advanced"). At the outset, the MOE might focus on one subject area and assess one grade level to identify the percentage of students meeting various standards or proficiency levels. They should interpret results for individual students and schools with care, bearing in mind that other factors, such as student home background, play influential roles in determining outcomes.

Experience in other countries suggests that Oman should carefully consider the known risks in using standards-based assessments to hold teachers and schools accountable for student learning.
The use of standards can influence teachers' reaction and cooperation. Standards use can narrow the taught curriculum to the particulars of the test, discouraging teachers, promoting "teaching to the test," increasing grade repetition, and in some instances, reporting of false results (Greaney and Kellaghan 2008, Kellaghan et al. 2009, Ravitch 2010). Reasons for caution include the knowledge that a wide range of factors affects student performance, including students' earlier achievements, family and community resources, school resources, education policies, and quality of teacher preparation and supervision. Accountability for student performance should be shared among students, teachers, schools, parents, policy makers, and national and regional administrators.

Research and Evaluation

The MOE could take steps to centralize much of its research and evaluation work in one unit.

The unit's long-term goal should be to produce quality research and evaluation evidence to meet international technical standards. Staff members should have skills in educational evaluation, test development, questionnaire design, research design and education statistics including psychometrics, computer analysis, sampling, and report writing. The proposed unit's work program could include conducting national assessments of student achievement levels, coordinating Oman's participation in international studies related to teaching and learning, developing diagnostic tests (for subjects such as Arabic and mathematics), and monitoring the effectiveness of current educational policies and programs. The research and evaluation unit would be expected to act as a central resource for educational research studies carried out in Oman. Details of two national research centers serving student populations similar to Oman's are in appendix N.

The proposed research and evaluation unit should be a key tool for policy makers and the broader education community to provide feedback on important outcome measures.

Feedback could come from national assessments of educational achievement levels, studies, evaluations and literature reviews to address policy issues. A good national assessment, to cite but one example, can show how well students are mastering the national curriculum, which reflects the cognitive and cultural priorities of the Omani education system. The national assessment could indicate whether learning standards are improving, remaining static or deteriorating. It could quantify the strength of association between student learning quality and the factors over which a ministry has some control (such as level of teacher qualification, teacher participation in in-service courses or class size). The national assessment could identify regions or categories of schools in need of additional resources or inputs and also provide information on the attitudes, habits and expectations of students (such as time spent reading for enjoyment), teachers (such as aspects of the curriculum they find difficult to teach), and parents (such as level of schooling they expect their children to attain).

CHAPTER 5

TEACHERS AND QUALITY OF EDUCATION
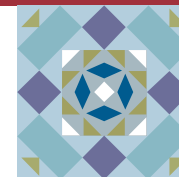
Teacher quality is one of the most important factors in improving quality of student achievement. International research has consistently shown that home background and teaching quality are the two most significant influences on student learning achievement. An OECD study concluded, "of those variables which are potentially open to policy influence, factors to do with teachers and teaching are the most important influences on student learning" (OECD 2005, p.2). Studies in Australia showed that the effect of teacher quality was greater than that of other variables at the school level (Rowe and Rowe 1999). A US study reported that if two average 8-year-old students were given different teachers, one a very effective teacher and one an ineffective teacher, their scores could differ by 50 percentile points within three years (Sanders and Rivers 1996). International evidence has suggested a string of good teachers can erase the deficits associated with poor preparation for school (Hanushek 2005). Other studies have shown student achievement to be more strongly related to teacher education quality and teaching than to class size, overall spending levels or teacher salaries (Darling-Hammond et al. 2000).

Teacher quality is not determined solely by teacher education level or teacher training duration.

Research has shown a positive relationship between student performance and measurable teacher characteristics, such as teaching qualifications, academic ability and subject knowledge, but to a lesser extent than might be expected (OECD 2005). Other important factors include motivation; creativity; ability to convey ideas in a clear and convincing manner; creation of effective learning environments for different types of students; and ability to work effectively with colleagues and parents (OECD 2005).

Developing appropriate teacher policies is difficult and complex.

While no single policy measure can guarantee good quality teaching, policy makers can exert influence on teaching quality in three key areas:

- **Teacher provision:** (1) ensuring an adequate supply of teachers across specializations, and (2) deploying teachers where needed;

- **Teacher preparation:** (1) attracting and selecting talented and motivated teachers, and (2) preparing them through high quality initial teacher education; and

- **Teacher support and management:** (1) supporting teachers with appropriate induction and in-service training, (2) ensuring adequate time on task and (3) supervising and managing teachers.

In addition with the increasing importance of information and communication technology (ICT) in education, policy makers in many countries are seeking to provide appropriate ICT support for teachers.

5.1   HISTORICAL CONTEXT

A successful policy of Omanization reduced an early reliance on expatriate teachers.

During the initial education system expansion, large numbers of expatriate teachers were employed; by 1980, 92 percent of teachers were expatriates. By the mid-1980s, increased domestic teacher training capacity enabled a rapid "Omanization" of the teaching force. Table 5.1 shows that by 2008/09, there were over 38,000 Omani teachers, accounting for 89 percent of teachers.

Table 5.1

Number of Omani Teachers, 1980 to 2008

	Total	Omani	Others	% Omani
1980/81	5,150	423	4,727	8
1990/91	15,121	4,361	10,760	29
2000/01	26,509	17,766	8,743	67
2003/04	32,345	26,026	6,319	80
2007/08	41,988	36,341	5,648	87
2008/09	43,149	38,398	4,751	89

Source: MOE 2004; MOE 2008c; MOE 2009a.

The overall level of teacher qualification has improved.

In 1972, nearly half of all teachers had qualifications lower than the secondary school leaving examination or General Certificate of Secondary Education (GCSE); as few as 8 percent had a university degree. The establishment of the Sultan Qaboos University (SQU) and six teacher colleges provided a supply of teachers with degrees and two-year teaching diplomas. In recent years the Ministry of Education (MOE) has entered into a partnership with the University of Leeds (in the UK) to enable Omani English teachers with a diploma qualification to upgrade to a degree. As a result of these initiatives, all teachers are now qualified and over 83 percent have a degree-level qualification or higher (table 5.2).

There is now a teacher excess in most subjects, and recruitment into the teaching force is no longer automatic.

In the initial expansion phase up to 2004, there was an acute shortage of teachers, and those trained in Oman were automatically recruited into the profession. As the expansion rate of student numbers slowed and the number of graduate teachers increased in recent years, the supply of newly qualified teachers has exceeded the requirement, although there remain shortages in some subjects and in certain geographical areas. Oman's experience in this regard is not unique and is shared by many countries, including the US (box 5.1). In response to the oversupply, the six teacher colleges have been converted into colleges of applied science, intake into universities' education courses has been restricted, and recruitment of newly qualified teachers is no longer automatic. With the slowing of recruitment, significant numbers of newly qualified teachers are unable to find teaching positions. In 2009 in an effort to address the excess supply, the MOE created 3,000 new support positions in schools, thus increasing the number of new teachers required that year from 2,000 to 5,000.

Table 5.2

Teacher Qualifications, 2008/09

	Omani Male	Omani Female	Non-Omani Male	Non-Omani Female	Total	% Female
Diploma and less	3,059	3,875	105	127	7,166	56
University degree	10,952	18,697	2,341	1,928	33,918	61
Postgraduate diploma	301	1,369	52	28	1,750	80
Master	76	64	130	37	307	33
Doctorate	5	-	2	1	8	13
Total	**14,393**	**24,005**	**2,630**	**2,121**	**43,149**	**61**
% University degree and postgraduate diploma	78.7	83.9	96	94	83.4	
% Master or Doctorate	0.6	0.3	5	1.8	0.7	

Source: MOE 2009a.

Box 5.1
Issues Related to Teacher Oversupply: US Experience

Most OECD countries have some imbalances of teacher supply and requirements. In the US for example, more teachers are trained every year than are required yet shortages exist in particular geographical areas, normally in rural areas and in poor urban districts, and in certain subject specializations, normally mathematics and science. These shortages result in the employment of unqualified and "out of field" teachers. The poorest children feel the impact of these shortages disproportionately, as both poor rural and poor urban districts experience shortages of qualified teachers and high teacher turnover. In some high poverty schools, teacher turnover can be as high as 50 percent.

Source: Darling-Hammond and Sykes 2003.

5.2   TEACHER REQUIREMENTS

Oman has an unusually young teaching force, reflecting the recent expansion in teacher numbers.

In Oman, 40 percent of teachers are under the age of 30, and 89 percent are under 40 (table 5.3). This age profile is very different from the average in OECD countries (figure 5.1) where 60 percent of teachers are over 40 (UIS 2006).

Table 5.3

Age Profile of Teachers in Oman, 2009 *(% of total)*

Age	Female	Male	Total
20-24	6.2	5.4	5.9
25-29	37.3	28.7	33.9
30-34	32.0	30.5	31.4
35-39	17.2	19.6	18.2
40-44	4.7	9.2	6.5
45-49	1.5	4.1	2.6
50-54	0.3	1.0	0.6
55-59	0.1	0.6	0.3
60-70	0.0	0.1	0.1
Over 70	0.0	0.0	0.0
	100	100	100

Source: MOE Human Resources database 2009.

Figure 5.1

Age Profile of Teachers in Oman (2009) and OECD Countries (2004)
(% of total)
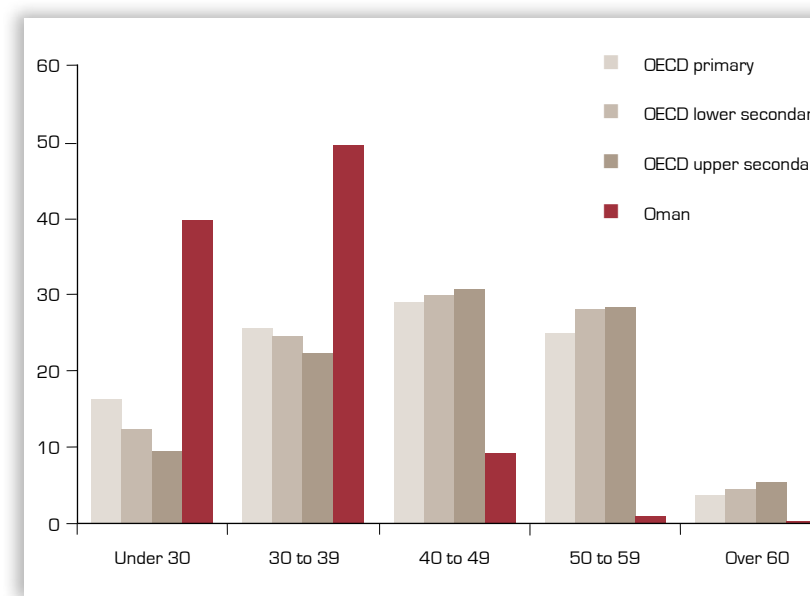
Source: UNESCO Institute for Statistics (UIS) 2006 and MOE Human Resources database 2009.

Table 5.4

Causes of Teacher Attrition in Oman, 2008/09

Cause of attrition	Number of teachers	% of all teachers
Total left	1,009	2.4
Move to other MOE post	700	1.7
Resign	209	0.5
Left through retirement, death, and medical grounds	100	0.2
Total number of teachers	41,988	100.0

Source: MOE Human Resources database

Note: The data in this table differs from the data in tables 5.1 and 5.2 because it was obtained from the live MOE Human Resources database at a different time in the year.

Table 5.5

OECD Teacher Attrition Rates *(%)*

	Type of school	Annual attrition rate
England	All	9
The Netherlands	Primary	7
Australia	Secondary Primary	5 4
Germany	All	5
Canada	All	2
Japan	All	2-3
South Korea	All	2
US	Public Private	8 14

Source: OECD 2002 and Marvel et al. 2006.

Note: The year of data varies by country from 1997 to 2005.

Table 5.6

Experience Profile of Teachers in Oman, 2009 *(%)*

Years since graduation	Female	Male	Total
0-4 years	27	25	26
5-9 years	41	36	39
10-14 years	16	15	16
15-19 years	12	16	13
20-29 years	3	6	4
30-39 years	< 1	< 1	< 1
Over 40 years	< 1	< 1	< 1
Missing data	1	1	1
Total	100	100	100

Source: MOE Human Resources database.

The young teacher age profile is reflected in low teacher attrition rates.

The teacher attrition rate (defined as the proportion of teachers permanently leaving teaching each year, for any reason) was 2.4 percent in 2008. The data in table 5.4 indicate that the greatest source of teacher attrition was moving to another post within the MOE. A mere 0.2 percent of teachers left through retirement, death or illness.

In countries where natural attrition (reaching retirement age, death and illness) is the main cause of teachers leaving the system, teacher attrition is typically around 5 percent. In countries where there are significant numbers of voluntary resignations (typically resulting from movement to other occupations), the rate can be higher (table 5.5).

It is likely that teacher retirement will rise in the medium term.

The current public service regulations provide for a relatively short teaching career with early retirement on a pension of 60 percent of salary (excluding allowances) after 15 years service and on a full pension of 80 percent of basic salary after 20 years' service. The data in table 5.6 indicate that 13 percent of teachers will reach 20 years of experience in the next five years. A further 39 percent of teachers have between five and nine years experience and could opt for retirement in 10–15 years, assuming the current retirement rules still apply. In the long term as the retirement pattern becomes stable, attrition through retirement should be at least 5 percent per annum, assuming a 20-year average duration of service.

Growth in national economic activity may prompt a rise in the number of early voluntary resignations.

In most countries with an active private sector economy, significant numbers of teachers resign for private sector employment. This type of attrition fluctuates in response to labor market conditions. In times of growth there tends to be a demand for people, such as highly qualified teachers, with skills valued by the labor market. While current attrition rates are low, there are some anecdotal indications of relatively high attrition rates for male teachers of ICT and English. If the national strategy of private sector development is successful, increased attrition of some specialist teachers through voluntary resignation is likely.

Alignment of Teacher Supply with Subject Needs

Oman has a reasonable proportion of teachers in each subject area, but there are some minor imbalances.

In 2008/09, roughly equivalent proportions specialized in major subjects, such as mathematics (10 percent), English (13 percent), Arabic (11 percent) and Islamic studies (7 percent). In total 15 percent of teachers were qualified to teach sciences with more trained in general science in the early grades and more specialists in the older grades. Fewer teachers, however, were qualified in biology (2 percent) than in physics or chemistry (5 percent and 4 percent respectively). There were relatively few teachers of physical education (4 percent), as this specialization is only available at SQU. The distribution of subject specialists by region was relatively even with 13–14 percent of teachers in each region qualified to teach mathematics and 12–13 percent qualified to teach English. Further related data on national- and regional-level distributions of teachers by subjects can be examined in appendices table 0.1 and table 0.2

The education system remains dependant on non-Omani teachers to fill key gaps in teacher supply. The gaps in the availability of qualified Omani teachers are subject and gender specific and most obvious in particular regions.

Teachers of general science, Arabic and Islamic studies are almost all Omani (over 99 percent). There are shortages, however, of qualified male Omani teachers in English and biology (table 5.7): 64 percent of male English teachers are non-Omani, as are 44 percent of male biology teachers. There is also a shortage of female Omani teachers in physical education, art and music; 48 percent of female physical education teachers are non-Omani.

Table 5.7

Teachers by Subject, Nationality and Gender, 2009

Subject	Number of teachers	% of male teachers who are Omani	% of female teachers who are Omani
Islamic studies	2,980	100	100
Arabic	4,644	98	100
Chemistry	1,738	93	100
Physics	2,000	95	93
Mathematics	4,428	90	90
Biology	802	56	94
English	5,571	36	92
Physical education/ sports	1,558	86	52
Learning difficulties	500	100	98
1st Field	6,596	100	100
2nd Field	3,892	100	100
IT	1,803	91	100
Fine arts	1,374	45	52
Geography	1,843	100	100
History	1,364	98	100
Life skills	1,165	100	100
Music skills	932	3	2
Total	43,243	85	92

Source: MOE Human Resources database.

Note: The data in this table differs from the data in tables 5.1, 5.2 and 5.4 because it was obtained from the live MOE Human Resources database at a different time in the year.

Table 5.8

Number of Schools, Classes and ICT Teachers, 2009

	Schools	Classes	ICT teachers
Basic education	759	11,069	1,401
General education	288	8,598	375
Total	1,047	19,667	1,776

Source: MOE.

As a result of curricular changes, some teachers find themselves teaching subjects other than their specialties.

In 2009, there were only 916 teachers with an initial qualification in ICT, while 1,776 teachers were recorded as teaching ICT (table 5.8). In the early grades, changes in subject specialization policy have resulted in a mismatch between teacher training and subjects taught. At present, teachers in the early years are expected to specialize in clusters of subjects known as Field 1 (Arabic, Islamic studies and social studies) and Field 2 (mathematics and science). Some of the teachers currently in these levels were trained as subject specialists and now find themselves teaching subjects for which they were not qualified. Teachers trained as Arabic language teachers, for example, are frequently expected to teach the First Field, including Arabic, Islamic education and social studies.

Further policy measures under consideration may require changes in teacher preparation programs.

At present, the MOE is implementing a pilot integrated curriculum for cycle one, in which a class teacher teaches all subjects with the exception of mathematics (in grades 3 and 4), English, art, physical education, music and information technology. In 2006/07 this was piloted in four schools, and it is expected to expand to 43 schools in 2010/11. If this integrated curriculum is adopted as the mainstream approach, the current teacher training approach will have to be replaced with a training program for the entire basic education curriculum. The possibility of teaching mathematics and sciences after grade 4 in English has been also discussed (though not yet approved); such a change would have teacher training implications given the need for teacher familiarity with English language concepts and terminology related to mathematics and science.

Teacher Training Capacity

In response to the oversupply of teachers, the Ministry of Higher Education (MOHE) has taken measures to limit intake into preservice teacher training.

The six teacher training colleges established to provide a two-year diploma qualification for teachers have now been closed and the premises converted into colleges of applied sciences. One of the colleges, Rustaq, retains a small cohort of English language teachers. The main publicly funded supply of teachers comes from the College of Education at SQU. Annual intake into the College of Education at SQU has varied (appendix figure 0.1) but since 2008 has been restricted to 300 in response to oversupply. The MOHE has also restricted education course intake at the private universities (Sohar, Dhofar and Nizwa) to reduce output. This restriction has contributed to market growth in private teacher training colleges abroad. Omani students can attend universities in other countries to obtain teacher qualifications. The MOHE normally recognizes accredited degrees from other countries within the region.

Although there is an excess of capacity, there is little domestic capacity in some important areas.

In the universities, most of the courses prepare teachers for cycle two and post-basic education. There is very little capacity to prepare teachers for cycle one of basic education.

5.3 DEPLOYING TEACHERS WHERE NEEDED

Demand for teaching positions varies by geographical location.

Teachers generally prefer to be posted in the more developed and accessible regions. As a result, the MOE encounters problems in placing teachers in the more remote regions, particularly in Al-Wusta and Dhofar. Government incentives to attract teachers to some remote regions include (1) a small incentive payment (RO 30 per month, about 5 percent of the salary and allowances of a newly qualified graduate) for teachers in specific remote schools and (2) priority to teachers from Al-Wusta and Dhofar who pass the selection test and who wish to be placed in these two regions. To date, the financial allowance does not seem to have been a sufficient incentive to attract teachers to the most difficult locations. Other countries have faced similar problems in teacher placement and have attempted to address it through a variety of incentives (box 5.2).

> **Box 5.2**
> **Measures to Address Geographical Preferences: Some International Examples**
>
> Many countries experience shortages of teachers for specific geographical areas, social groups, and subject areas. Some countries have used financial incentives to try to address these shortages.
>
> (1) In the UK, London offers salaries approximately 12 percent higher than other areas to attract teachers.
>
> (2) In France, a scheme with additional benefits in training and career progression encourages teachers to take positions in disadvantaged suburbs of Paris.
>
> (3) Sri Lanka's incentive scheme includes cash stipends, housing, transport allowance, and accelerated teacher promotion.
>
> Despite these financial incentives, shortages still remain. London has higher vacancy rates than other parts of the UK, and in Paris the majority of the teachers willing to accept positions in the disadvantaged urban schools are inexperienced.
>
> Source: OECD 2009a.

The current teacher allocation system has produced a reasonably even distribution of teachers at the regional level.

On appointment, teachers are sent to specific schools. While individual teachers do not normally have a choice of school, regional education officials usually consider the teacher's home location when deciding on a position. This system seems to have produced an equitable distribution of teachers across the regions, and there is little interregional variation in student-teacher ratio (table 5.9). Al-Wusta's favorable student-teacher ratio (STR) of 8 reflects the greater number of small schools in this region.

This relatively equitable distribution of teachers is achieved partly through the use of non-Omanis to fill gaps in less-needed locations. Data from 2008/09 (table 5.10) show that at least one out of four teachers in the more remote areas of Al-Wusta and Dhofar were non-Omani.

Table 5.9

Average Student-Teacher Ratio, by Region, 2009

	Schools for boys and girls	Schools for girls only	Schools for boys only	All schools
Al-Batinah (North)	12	15	14	14
Al-Batinah (South)	13	15	14	14
Muscat	13	14	14	14
Al-Dakhliya	12	14	13	13
Al-Sharkiyah (North)	12	13	13	13
Al-Sharkiyah (South)	11	13	11	12
Al-Buraimi	10	12	12	11
Al-Dhahirah	11	12	11	11
Dhofar	8	13	11	10
Musandam	9	10	9	9
Al-Wusta	7	-	9	8
Total	11	14	13	13

Source: MOE 2009a.

Table 5.10

Percentage of Teachers Who Are Omani, by Region, 2008/09

	Male	Female	All teachers
Al-Dhahirah	88	96	93
Muscat	86	96	92
Al-Sharkiyah (South)	88	94	92
Al-Batinah (South)	87	94	91
Al-Dakhliyah	89	92	91
Al-Buraimi	88	93	91
Al-Batinah (North)	50	93	88
Al-Sharkiyah (North)	86	88	87
Musandam	82	89	86
Dhofar	64	79	72
Al-Wusta	60	82	69
Total	82	92	88

Source: MOE 2009a.

The similarity of average regional STRs should not hide the fact that there are substantial STR differences at the school level (appendix figure 0.2). In 2009, 20 percent of schools had STRs less than 10, while 25 percent of schools had STRs greater than 15. The schools with low STRs are mainly small schools, mostly in the more remote regions.

The current transfer system assigns more inexperienced teachers to remote regions.

Teachers are allowed to request a transfer after one year of service. Some priority in transfer is given to teachers serving in difficult areas. In 2009, almost 10 percent of teachers requested an interregion transfer, and 5.8 percent (2,510 teachers) were transferred (table 5.11). Transfers show a strong directional pattern: in 2009, 332 teachers moved out of Al-Wusta region through transfer, but as few as 14 were transferred into the region. The pattern was even more pronounced in Dhofar. By contrast, 184 teachers transferred out of Muscat, while 479 transferred in.

An inevitable result of the current transfer system is the relatively large proportion of inexperienced teachers in the remote regions.

While overall 26 percent of teachers had less than 5 years' experience since graduation, in Al-Wusta and Dhofar the percentages were 59 percent and 42 percent respectively (table 5.12). The high turnover of teachers in these areas increases the difficulty for remote schools to develop good teaching practices and to build good relationships with parents and the community, factors identified as contributing to student learning achievement (Okagaki 2001).

Table 5.11

Interdistrict Transfers, 2009

	Transfers out	Transfers in	In as a % of out
Al-Buraimi	16	127	794
Al-Dhahirah	50	296	592
Al-Batinah (North)	106	458	432
Al Sharkiyah (South)	66	207	314
Muscat	184	479	260
Al-Batinah (South)	356	471	132
Al-Dakhliyah	240	253	105
Al-Sharkiyah (North)	372	158	42
Musandam	72	25	35
Al-Wusta	332	14	4
Dhofar	706	22	3

Source: MOE Human Resources database.

Table 5.12

Teachers with Less than Five Years of Experience after Graduation by Region, 2009

	Number of teachers	Number with under 5 years	% under 5 years
Al-Wusta	732	432	59
Dhofar	4,368	1,836	42
Musandam	565	212	38
Al-Sharkiyah (North)	3,367	1,202	36
Al-Batinah (South)	5,357	1,610	30
Al-Batinah (North)	8,277	1,872	23
A-Sharkiyah (South)	3,712	832	22
Al-Buraimi	1,071	221	21
Al-Dakhliyah	6,096	1,246	20
Muscat	6,640	1,321	20
Al-Dhahirah	3,059	550	18
Total	43,244	11,334	26

Source: MOE Human Resources Database.

5.4 SELECTING STUDENT TEACHERS

Teaching remains a relatively attractive profession especially for females, and competition for places in the preservice program at SQU is keen.

Against a national background of high graduate unemployment, the security of public service employment tends to be highly valued. Teacher remuneration is based on public service salary scales, and teacher earnings equal those of other public servants with similar qualifications. Culturally teaching is perceived as one of the more socially acceptable forms of employment for Omani women. Consequently there is high demand for access to the profession, and some parents finance their children to study abroad in the hope of returning to a teaching position. The intake to the College of Education at SQU is highly competitive, particularly for female students, and the entry requirements are higher than for many other university courses. There is also a waiting list of SQU students wishing to transfer into education courses. At present, the selection into teacher education courses is based mainly on academic achievement. Internationally some of the leading education systems have begun to use other assessments, including interviews and aptitude tests, to ensure that personality variables are included in the selection (box 5.3). Currently, SQU conducts interviews for grade 12 graduates.

Box 5.3
Selecting the Right Teachers

Part of the key to teacher quality is selecting the right people into the profession: a bad selection decision can result in up to 40 years of poor teaching. Countries are using different selection methods to ensure that entrants to the profession have the right mix of academic preparation, personality and motivation. Some evidence associates high levels of literacy with effective teachers, and both Singapore and Finland use literacy assessment as part of the selection process.

Singapore uses a three-step selection process before entry to teacher training:

(1) Applicants provide a CV, which is used to check if they have the required academic qualifications.

(2) Applicants sit for an entry test, which tests literacy level.

(3) Applicants are interviewed to examine their attitude, aptitude and personality.

Finland also has a three-step selection process:

(1) Applicants sit for a national entry test, which measures literacy, numeracy and problem-solving skills.

(2) Students then take university assessment tests, which aim to measure ability to process information, think critically and synthesize data.

(3) Finally students are interviewed to check motivation to teach, motivation to earn, communication skills and emotional intelligence.

Source: McKinsey and Company 2007 and Gopinathan et al. 2008.

Paradoxically while intake to teacher education is highly competitive, the motivation of some new entrants is sometimes poor.

Discussions with MOE staff, teachers and supervisors suggest that many students are not strongly motivated to be teachers; they apply for teacher education due to lack of career alternatives. As part of this study, student teachers at SQU were interviewed about their reasons for selecting teaching as their area of study. Their reasons varied, and while some were highly motivated to be teachers, for others teaching was a choice motivated by lack of alternatives. Some of the responses are show in table 5.13.

Table 5.13

SQU Student Teachers Response to Why They Study Teaching

Responses from male student teachers	Responses from female student teachers
■ No other alternatives, did not even choose the subject I am studying.	■ Belief in the role of education and personal development.
■ Do not want to be a teacher but no other choices. I may get another job in the future.	■ Did not choose it, but have grown more interested (two comments).
■ I aimed to study English, I think teaching is an important profession.	■ Wanted to study psychology, now hope education can be a step to this.
■ I was inspired by teachers in my secondary school, I got to love English. Education is a worthy profession.	■ Do not really want to be a teacher, students always complain about their grades.
■ I had a personal interest in physical education.	■ Want to teach art, to be creative.

Source: Focus group of student teachers at SQU, 2009.

5.5   INITIAL PREPARATION OF TEACHERS

Teacher preparation requirements need to reflect the changing economic and social context and developments in pedagogy and psychology.

The task of teaching has changed over the last few decades. First, in this information age teachers are expected not merely to deliver a body of knowledge but also to guide their students in developing critical skills in analysis, judgment and problem solving. Second, increased student participation and retention rates in education require teachers to work with a broader range of students with a greater mix of skills and backgrounds than before. Third, in an increasingly competitive labor market there is greater external pressure on teachers to ensure that students perform well on measures of learning achievement (such as school- and national-level tests and examinations). Finally, teachers are now responsible for supporting students in a broad range of nonacademic areas, such as social and personal development.

Initial teacher education in Oman experienced a notable transformation in one generation.

The teaching force moved from reliance on expatriate teachers to a mostly Omani profession, in which over 80 percent of teachers have university degrees. While there are a number of institutions involved, the flagship institution is the College of Education at SQU, which provides initial teacher education, as well as preparation for school leaders and supervisors. SQU provides training for only about 15 percent of newly qualified teachers; the rest comes from private institutions in Oman and institutions abroad.

The major concern in initial teacher education is the varied institutional standards.

School principals interviewed noticed a difference in quality among newly qualified teachers from varying institutions; they expressed concern about the content knowledge, English language proficiency and teaching skills of some newly qualified teachers.

Teacher education courses at SQU are generally perceived to be of high quality but can be strengthened in some specific areas.

While recognizing the quality of many of SQU's initial teaching courses, some focus group participants and other MOE personnel interviewed raised concerns about the alignment of SQU training with current schools' practices. In focus group discussions, school principals noted that newly trained teachers seemed unfamiliar with the required school assessment and monitoring practices and were better prepared in subject content than in pedagogy. Teachers also reported that they felt poorly prepared for some school practices. In response some SQU academic staff said that they were not informed by the MOE of relevant changes in approaches to teaching and learning and that they were not in a position to know about these changes, as they were not represented on relevant committees. These comments suggest that MOE and SQU could improve communication with more timely information sharing and better alignment between suppliers and users. The challenge is to determine how the initial training experience can help prepare young teachers for the realities of working in Omani schools and meeting MOE's expectations.

The academic staff in the teacher education institutions has strong academic qualifications but limited school teaching experience.

In SQU, most of the current academics were trained initially as teachers but immediately following course completion they were selected for sponsored postgraduate programs abroad and later returned to join the faculty (see staff qualification levels in appendix table O.3). As a result, most have limited experience in teaching in a school setting. Similarly most of the academic staff at private universities are expatriates who were initially trained as teachers, but few have had careers teaching school-age students. These staffing patterns suggest a risk of an overly theoretical approach to initial teacher education.

Teaching Practice

Teaching practice is a relatively small part of initial teacher preparation in Oman.

An international review of teacher education reported that while most professions conduct much of their training in real life settings, relatively little teacher training takes place in the teacher's own classrooms (box 5.4). This is particularly the case in Oman; in SQU, teaching practice accounts for approximately 6 percent of the total credits for the course. Student teachers have teaching practice for one day per week in the 7th semester and for two days per week in their final (8th) semester. Teaching practice is not offered during the first three years of the course. While in school, each student teacher works with a cooperating teacher, but focus group discussions suggested that the quality of supervision and support provided by cooperating teachers varies. In Nizwa University teaching practice accounts for 5 percent of the total credits for the course. Students go on teaching practice for two days per week (Tuesday and Saturday) in the two semesters of the fourth year. For the first two weeks they observe teaching and after that they teach one to two hours per week.

5.6   INDUCTION AND IN-SERVICE SUPPORT FOR TEACHERS

Newly qualified teachers need a formal induction into the realities of teaching in Omani schools.

It is highly unlikely that a society would ever turn out a freshly trained doctor and advise him or her to "go operate on somebody" without three of four years of guided practice (McBeath 2006). In the education sector, however, young teachers often have little structured induction after they complete their initial training. Newly qualified teachers are neither fully equipped to deal with teaching challenges nor helped to develop their skills over their early years of teaching. Typically newly qualified teachers report problems in the areas of classroom management, student motivation, student assessment and accommodation of individual student differences. There is increasing recognition that teacher education can no longer be seen as a single initial period of training but as an ongoing process throughout the teacher's career.

In this regard, OECD (2005) has suggested that teacher preparation has three main phases: (1) initial teacher training, (2) induction and (3) in-service continuing professional development. Of the proposed three phases, induction tends to be the most neglected. England, to cite one example, operates an induction program for teachers in their first year of service. The program covers a broad range of aspects in the young teachers' work world, including roles and responsibilities, evaluation, dealing with young people and classroom activities (box 5.5). Prior to 2009 in Oman, induction in most schools took the form of senior teachers familiarizing the new teachers with school rules and procedures. The MOE's induction program, which is expected to be compulsory for all new teachers, will involve two-week taught courses delivered in three blocks in September, October and February. The induction program focuses on teaching practices and policies, as well as the curriculum (appendix box 0.1).

Box 5.4

Teaching Practice

"... despite the evidence, and the fact that almost every other profession conducts most of its training in real-life settings (doctors and nurses in hospitals, ... lawyers in courtrooms, ...) very little teacher training takes place in the teacher's own classrooms, the place in which it would be precise and relevant enough to be most effective."

(McKinsey and Company 2007, p.28).

A period of supervised teaching practice is central to the development of teaching skills. McKinsey and Company (2007, p.41) suggests that in the best systems student teachers have at least 20 weeks of supervised practice in schools.

Source: McKinsey and Company 2007.

Box 5.5

Induction of Newly Qualified Teachers: England

England was the first European country to introduce a mandatory induction year in 1999. This induction program was viewed as one part of a continuum of career-long professional development for teachers. The policies provide a mentor for each new teacher. Additionally, newly qualified teachers in England receive a 10 percent reduction of teaching responsibilities. Two performance evaluations are built into the induction year, and new teachers are evaluated by national standards.

If newly qualified teachers in England fail to demonstrate that they meet the standards during their induction year, they may appeal but may not repeat the induction year. If their appeal fails, they lose their registration with the General Teaching Council of England. This means that they may not be employed to teach in public schools, although they may teach in an independent school or as a private tutor.

Source: Killeavey 2006, p.171.

In-service Training

The MOE's Human Resources Development Directorate provides a range of in-service short courses for teachers.

Courses are provided at central, regional and school levels with training done through a cascade approach. Teachers are not paid to attend training but transport, meals and accommodation are provided. Teachers normally attend courses during school time, and teachers are replaced by a substitute, often a colleague. Courses cover a variety of topics: at the central training center for instance, over a one-year period participants took courses on education (53 percent), information technology (23 percent), administration (12 percent) and language (1 percent).

The impact of this training is unclear.

Participants rate the courses in terms of content, delivery, meals and transport arrangements, but there is no systematic data on the impact of the courses on classroom practice. There is some concern that teachers do not always take these courses seriously, and they have no implications for salary or promotion. Teachers are normally selected for training by supervisors, resulting in some teachers complaining that they are sent on irrelevant courses or courses on familiar material. Indications from school level are that the message may be diluted considerably by the time it arrives. In a survey of 150 teachers in five regions in June 2009, teachers were asked to comment on the in-service training. The major criticisms raised were (1) the training was over-theoretical, (2) the training was delivered in a didactic manner and did not respond to the participants' issues, and (3) the trainers were not sufficiently expert in the content. School principals in the focus group were also critical of the structure and timing of in-service training. They suggested that the courses were too short to have an impact, reached only a portion of teachers, and caused disruptions from teacher absence. Covering for absent teachers can be particularly difficult when a number of courses are held at the same time. The principals said they would prefer the training to be held on designated, nonteaching days, such as the period before state examinations.

There may be considerable advantages to allowing schools to organize some of their in-service teacher training needs.

At present the MOE provides modest funds to schools to organize training to support school-level professional development. Each school receives RO 300 per year; in addition, 610 schools have received an additional RO 200 to develop and implement a school professional development plan. Senior teachers often identify the topics for staff development based on their knowledge of the needs within the school. Sometimes expertise is found within the school. In other cases, schools invite external trainers to provide input; this form of training can be relatively expensive for schools. Some principals reported raising additional funds from teachers to offset the cost of external trainers. In focus group discussions principals appreciated the ability to customize training to address school needs.

5.7 TEACHER UTILIZATION: STUDENT-TEACHER RATIO, TEACHING HOURS AND CLASS SIZE

Oman has low STRs at all levels of the education system.

The STR in Oman's public schools has been declining in recent years, as teacher recruitment has outpaced enrollment growth. The average STR has fallen from 21 in 2000/01 to 12.5 in 2008/09. The lowest STRs are found in basic schools where the average is 10.6, while the highest is in general education grades 1–6 with an average of 19.2 (table 5.14). The overall STR of 12.5 is very low by international standards, well below the average for the countries in the World Education Indicators study, and lower than the average for OECD countries (table 5.15 and appendix figure O.3).

Table 5.14

Students, Teachers and Student-Teacher Ratios in Public Schools, 2008/09

	Basic education	General education			Total
		Grades 1-6	Grades 7-9	Grades 10-12	
Students	309,527	37,498	64,540	128,767	540,332
Teachers	29,298	1,957	4,418	7,476	43,149
Student-teacher ratio	10.6	19.2	14.6	17.2	12.5

Source: MOE 2009a.

Table 5.15

Student-Teacher Ratios by Level of Education: International Data, circa 2004

	Primary education	Lower secondary	Upper secondary
World Education Indicators average	24.3	23.9	20.7
OECD average	16.9	13.7	12.7
United Kingdom	21.1	17.1	12.3
United States	15.0	15.2	16.0
Chile	27.1	44.3	26.8
Finland	16.3	10.0	16.2
France	19.4	14.1	10.3
Germany	18.8	15.6	13.9

Source: UIS 2006.

These favorable STRs are not translated into smaller class sizes.

In 2009, the average class size was 27 with slightly smaller classes in coeducational schools and averages of 29 and 30 in boys and girls schools.[41] These class sizes are larger than the OECD averages of 21 in primary education and 24 in lower secondary education (OECD 2006). Details of average class sizes in Oman (by region) and in other countries can be examined in appendix tables O.4, and O.5. The apparent contradiction of low STR and relatively high class size may be explained by the data outlined in figure 5.2, which shows that Oman has far more teachers per class than the average for OECD countries.

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41 Note that class sizes of 35 are very common, and the average is lower because of the presence of very small schools in remote areas.

Figure 5.2

Teachers per Class in World Education Indicators (WEI) Countries and Oman
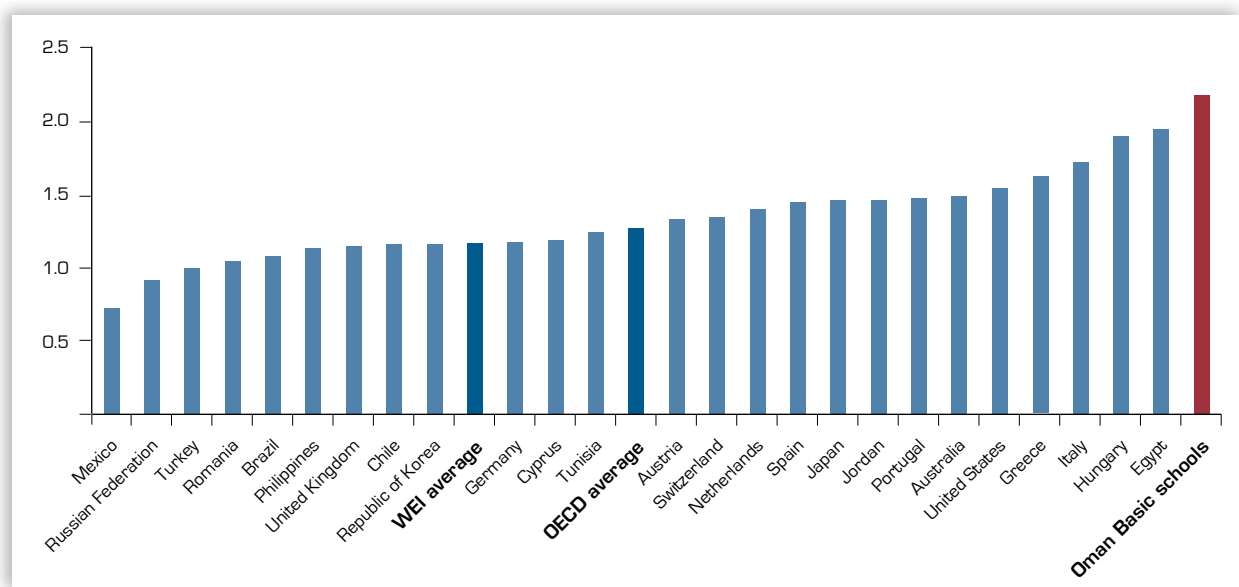
Sources: WEI data taken from UIS 2006 for primary schools. Oman data is from 2008/09 for basic schools.

Teacher Workload

The low STRs and high class sizes are reflected in a reduced teacher workload.

Teachers are expected to teach 28 periods of 40 minutes each per week, the equivalent of 70 percent of typical student contact hours. Implementation of this workload norm would result in a requirement of 1.4 teachers per class.[42] In practice, teachers rarely teach 28 periods per week. The national data show an average of 2.2 teachers per class (table 5.16), which implies an average teacher workload of 18 periods per week or 12 hours per week.

Teacher workload (in terms of teaching time) is low by international standards.

The official length of the school year for students in basic, general, double shift and grades 10–12 is 180 days (appendix table O.6). A teacher teaching 28 periods per week for a 180-day academic year would have a workload of 672 hours of teaching time per year. In practice, there are 2.2 teachers per class, which suggests an average workload of 18 periods per week or 436 hours per year. These figures are substantially lower than both the OECD country averages, which range from between 663 and 805 hours per year and the World Education Indicators (WEI) countries' averages of over 800 hours per year (table 5.17). As described in chapter 4, the average number of teaching hours per year in public schools is considerably lower than the 436 estimated hours due in part to the way the national public examination system is implemented. It should be stressed that teacher workload, which is measured by time spent teaching, does not take into account the considerable time that teachers devote to preparing written narrative lesson plans for each lesson, marking student work, updating assessment information and fulfilling other reporting and administrative requirements.

[42] The number of teachers required per class can be calculated by dividing the number of periods in the week (in this case 40) by the number of periods each teacher is expected to teach (in this case 28). In Oman 40/28 gives a requirement for 1.42 teachers per class.

Table 5.16

Students, Teachers and Classes in Public Schools, 2008/09

	Basic education	General education			Total
		Grades 1-6	Grades 7-9	Grades 10-12	
Students	309,527	37,498	64,540	128,767	540,332
Classes	11,069	1,505	2,371	4,722	19,667
Teachers	29,298	1,957	4,418	7,476	43,149
Student-teacher ratio	10.6	19.2	14.6	17.2	12.5
Teachers per class	2.6	1.3	1.9	1.6	2.2

Source: MOE 2009a.

Table 5.17

Teacher Workload, Teaching Time per Year, International Comparisons

	Primary education	Lower secondary	Upper secondary
World Education Indicators average	872	864	858
OECD average	805	704	663
United States	1,080	1,080	1,080
Chile	873	873	873
Finland	680	595	553
France	918	639	614
Germany	793	751	705
Germany	18.8	15.6	13.9

Source: UIS 2006.

Teaching time is further reduced by frequent teacher absences.

There is no reliable data on teacher absence, but it was reported to be a serious concern by school principals in focus group discussions. The focus group principals reported that a small number of teachers took unauthorized days off particularly on Wednesday and Saturday (a relatively infrequent occurrence). Much more frequently, teachers were absent from school attending courses. Short courses of one or two days were easily covered within the school, but longer courses (up to two weeks) presented difficulties for the school and loss of teaching continuity for students. Maternity leave also tends to cause disruption. Female teachers are entitled to 50 days maternity leave. The disruption resulting from maternity leave is concentrated in girls' schools and basic education cycle one schools, and it can have a significant impact, given the relatively high birth rate and the age profile of the female teaching force. In focus group discussions, all principals reported that their schools experienced multiple teacher absences for maternity leave in the previous year. One principal commented that four Arabic and three science teachers were on maternity leave at the same time. While the MOE provides some replacements, principals reported that replacement cover was insufficient, and some of the work of absent teachers was shared among colleagues in the school.

5.8 SUPERVISING AND MANAGING FOR RESULTS

Teachers are part of a hierarchical structure that includes senior teachers and supervisors.

Senior (experienced) teachers are supervised at least twice a year by external supervisors and newly qualified teachers four times a year by senior teachers in their schools. Senior teachers have a reduced teaching load, normally about 50 percent, and are responsible for supervising teachers. A minimum of one senior teacher is appointed for every four teachers of a particular subject. Supervisors are selected through competition and provided with some training spread over a two-year period. They have responsibility for visiting schools, providing pedagogical support and ensuring standards of teaching and learning. In 2009 about 1,400 supervisors handled 1,047 schools and 43,245 teachers, a ratio of one supervisor for every 30 teachers. Supervisors are monitored by regional senior supervisors who are in turn monitored by chief supervisors at the MOE.

Despite the large numbers of supervisors, their impact on quality is unclear.

Focus group discussions and meetings with MOE personnel suggest that many supervisors spend a good deal of their time engaged in other tasks, including administrative duties and providing training, thus limiting their ability to perform supervisory duties at the school level. Teachers interviewed as part of this review indicated that they valued the input from senior teachers more than that from supervisors who were sometimes seen as out of touch with the real world of the classroom. A 2008 report that synthesized supervision findings noted (1) the overload of administrative and paper work for teachers, (2) weaknesses in teaching strategies, (3) some weaknesses in subject knowledge, and (4) problems with IT equipment and maintenance.

School principals can play a stronger role in improving educational quality within their schools.

In many countries the role of school principal is changing from one of an administrator/manager to one of leader and change agent (box 5.6). A significant body of research indicates the importance of good school leaders in determining educational outcomes (Cotton 2003), underlining the importance of selecting good school leaders and providing them with appropriate preparation. In Oman, promotion to the position of school principal is based on written examination performance followed by a technical interview. Professional training is provided for school principals; most of the school principals in focus group discussions had received training for the role of principal either through full-time or part-time postgraduate study at SQU. Each of the principals in the focus group had worked in a number of schools with an average service of three to four years in each school. Despite the careful selection and training, at present school principals have relatively little autonomy. There is scope to enhance the local leadership function and give school principals more autonomy to improve quality through actions, such as organizing appropriate teacher in-service programs and exerting a greater influence in staff selection and school budget.

The teacher career structure is based on fixed promotion intervals and provides little incentive to improve performance.

All teachers are employed as permanent civil servants with a probation period of three months, following which all become permanent. Starting salary is determined by entry-level qualification and is consistent with public service salaries. Once appointed, teachers receive a fixed annual increment and an automatic promotion to the next scale after every four years of service. In addition, teachers at each level receive fixed allowances for housing, electricity, phone and transport, which amount to over 40 percent of total pay. School principals and supervisors are also paid on the same basic scale although allowances may differ. There is often little incentive for promotion.

"Managers do things right, while leaders do the right thing."

Internationally, the thinking on education places a strong emphasis on school leadership. In a rapidly changing context, school leaders are the bridge between policy and practice. The role of school principal is changing in the process from one of an administrator/manager to one of leader and change agent. A significant body of research indicates the importance of good school leaders in determining educational outcomes.

Systems vary a great deal in the level of autonomy they allow schools. On one hand, there is a global trend for greater accountability in education reflected in greater efforts to set goals, monitor achievement and hold schools accountable for their performance. On the other hand, many argue that deregulation of schools and empowerment of individual schools to make their own decisions will lead to better education outcomes. This view supports teachers and school leaders as the professionals on the ground who are best placed to exercise discretionary judgment over issues of teaching and student care.

One of the key questions is the extent to which schools have influence over the selection of their teachers. School leaders' ability to select their teaching staff is central to their ability to establish a school culture and capacity conducive to better student performance.

"If I cannot choose the members of my team, I cannot be responsible for winning on the field." (Pont et al. 2008, 56).

Source: Pont et al. 2008.

5.9 ICT IN TEACHING AND LEARNING

Oman has the opportunity to benefit from other countries' experiences in using ICT in education.

Many developed countries had high expectations for ICT's role in education and made substantial ICT investments over the last two decades. One of the key drivers of this investment was the assumption that ICT could assist in preparing young learners for a knowledge society by facilitating a more learner-centered pedagogy and greater access to a broad range of classroom sources, resulting in better analytical and problem-solving skills. Some of the results have been disappointing. While there have been some positive educational activities supported by ICT, much of the reality of ICT in schools has been routine learning of computer operations.

Oman has an impressive ICT infrastructure in schools but limited and uneven connectivity.

Computers are provided in computer laboratories, in learning resource centers and in specific areas, such as school science laboratories, career guidance rooms and classrooms, with a current coverage of about 20 percent of schools. Hardware is procured centrally with a six-year full warranty and a six-year replacement cycle. A network of approximately 450 computer technicians provide technical backup. About one-third of schools have sufficient connectivity to allow students to search the web (DSL connections). Many others rely on slower connections, such as through the mobile telephone network, and are unlikely to promote student-centered Internet use. Some schools remain unconnected.

Teacher training and development of curriculum guidelines support ICT use.

About 4,000 teachers have ICT skills training through short in-service courses, mainly using the International Computer Driving License (ICDL). In addition since 2009/10, an initiative (IC3) of the Information Technology Authority (ITA) has trained all government employees, including MOE teachers. So far it has addressed over 7,000 teachers around the country. Most preservice courses include ICT, ensuring that newly qualified teachers have ICT skills. A structured ICT curriculum has been developed to encourage use of ICT in support of other curricular subjects in basic education.

ICT use to support teaching and learning remains limited and uneven.

Although there is little firm data, it seems that some teachers use ICT to support learner-centered activities, and others fail to appreciate its relevance. For many teachers who experienced a didactic learning approach, switching to a learner-centered approach is difficult. The training, provided through short courses, may have been more successful in developing technical skills than pedagogical attitudes. In addition, there is a risk of mixed messages from supervisors, curriculum specialists and ICT specialists. Some work is underway to help teachers develop pedagogical uses of ICT. The MOE has recently launched an initiative to train teachers to use ICT in educational activities, and around 200 MOE teachers are already members of iEARN (a nonprofit organization that encourages teachers and students to work together online). Further improvement in ICT application to education is likely to require (1) longer-term work in teacher professional development with a greater focus on building pedagogical skills, and (2) greater coordination of ICT, curriculum, supervision and assessment departments.

5.10 QUALITY OF TEACHING AND LEARNING

While there is little systematic information on teaching quality, there are indications that more could be done to develop classroom teaching.

Some of the most important factors in education take place behind the closed door of the classroom, however, little reliable international information is available about what happens inside. Oman makes a very significant investment to oversee quality with senior teachers, supervisors and other officials monitoring teaching. Some of these observations may be relatively superficial, and there is no system designed yet to analyze findings and inform policy. This lack of information makes it difficult to be certain of specific measures needed to improve quality.

Despite the lack of direct evidence from inside classrooms, the combination of high enrollment, high staffing levels and unsatisfactory learning outcomes suggest that pedagogy quality could be strengthened.

The following are some indications that teacher quality may be weakened by poor pedagogical skills: (1) practical skills of teaching are allocated a relatively small proportion of the time in teacher training courses, (2) faculty in universities often have limited teaching experience themselves, (3) new teacher induction tends to focus on procedures rather than pedagogical skills, and (4) experienced teachers are often withdrawn from the classroom to serve in supervisory or administrative positions. There are also suggestions that the relatively high level of reporting and monitoring intended to ensure quality might be taking time and attention away from lesson preparation. Finally, there may be some cases where teachers have a limited understanding of the material they are supposed to teach, particularly when they are teaching subjects in which they were not trained.

5.11 POLICY IMPLICATIONS

Oman has a large and qualified teaching force, and its achievement in building teacher numbers and qualifications is impressive. Nevertheless opportunities exist to develop and enhance current practices to improve teaching quality. The foremost challenge appears to be ensuring that the education system develops a method in which well-trained teachers have adequate teaching time to raise the current standard of student achievement. The following recommendations arise from the current study's findings and a reflection on international experience.

There is a need for a strategic forecast and plan for teacher supply.

After an era of rapid expansion and high demand, the employment market for teachers has reached saturation with some demand for positions in specific subject areas. Over the next few years, the situation is likely to revert to a more normal state when a constant proportion of teachers, probably between 5 and 10 percent, will retire or leave the profession and require replacement. While it is difficult to predict teacher attrition rates with precision, it will be important to develop a forecasting mechanism to ensure that teacher supply and demand is maintained in a reasonable balance. Significant mismatches of supply and requirements are potentially damaging. An undersupply of teachers will result in shortages and reliance on expatriate or underqualified teachers. An excessive oversupply of teachers is costly, can reduce teacher status and makes it more difficult to attract high-caliber applicants to the profession. Systems are already in place to forecast teacher requirements and regulate intake into publicly funded teacher education programs. These mechanisms should be expanded to include projections of teacher attrition and provide long-term projections of requirements.

The MOE should take steps to ensure there is adequate capacity to prepare teachers for each level and subject area and to reduce the risk of out-of-field teachers.

The closure of some teacher education courses in response to oversupply has left Oman with little domestic capacity to train some teachers, particularly for cycle one of basic education. In the long term, this poses a quality risk and may result in a renewed reliance on expatriates or teachers trained abroad. The MOE should determine if Oman has the institutional capacity to train adequate numbers of teachers at each level and take steps to address apparent shortfalls.

The policy of deploying teachers to remote schools should be reviewed to promote regional balance.

In a period of oversupply of qualified Omani teachers, the difficulty in filling positions in remote schools causes concern. In the interest of equal educational opportunities, the MOE should take steps to ensure that students in remote areas do not suffer from frequent changes in teachers, which will hinder their formal educational development. A number of strategies should be considered: a more substantial allowance to teachers in carefully targeted remote schools; an extension of the minimum assignment time prior to transfer from a remote school (currently one year) to improve teaching continuity; and greater preference to candidates from remote areas for entry to teacher education courses and for recruitment. A quota system could be considered to reserve places in teacher training for remote area applicants linked with a bonding system requiring work in remote areas for a period after graduation.

Future teacher recruitment should be needs based and classroom focused.

In 2009, 3,000 additional positions in the education system (equivalent to 7 percent of the teaching force) were created in excess of requirements. This expansion responded in part to pressure to create positions for the large numbers of unemployed teachers. While these positions have provided extra support, they have added staff to schools, which by international standards already had low STRs.

This overemployment in the system withdraws expertise from the classroom, as experienced teachers are moved to nonteaching positions, and can lead to poor work practices, which may be difficult to reverse later.

Further collaboration between the MOE and providers of preservice teacher training can enhance teacher preparation quality.
Initial teacher education can benefit from a closer alignment between preservice coursework and current public school practice. For instance, new curricula, assessment systems and other relevant practices should be incorporated into initial teacher education. In turn, preservice trainers should be invited where appropriate to share their expertise with MOE officials.

Preservice teacher education programs should place greater emphasis on practical pedagogical skills.
Teaching practice should begin in the initial years of teacher training. The number of teaching practice hours should be extended and include periods of block teaching practice where students would work full time in schools for a number of weeks. Enhancing the cooperating teacher's role could improve the quality of teaching practice. To improve the practical focus of initial teacher education, preservice training providers should make greater use of highly experienced teachers in teacher training and especially in supervision; proven teaching competence should be the main criterion in selecting these support personnel.

The quality and consistency of teacher education could be regulated through a system of recognition or accreditation.
At a time of teacher oversupply, the government has an opportunity to improve teacher education quality through a recognition or accreditation system of teacher education courses that meet required standards (box 5.7). This process could be used to ensure that training providers have adequate staff and expertise and that they align training to the curriculum and language policies.

The amount of time teachers spend teaching should be increased. By international standards, Oman's teachers have light teaching workloads.
Many are overloaded with assessment and reporting tasks. Teaching time is further eroded by practices (related to public examinations discussed in chapter 4) that result in shortening the school year. In addition, teacher specialization in the early grades impedes the ability of teachers to get to know their students and address their individual needs. A series of measures is required to ensure that teachers use much more of their time actually teaching. First, MOE should review the current workload and remove many of the nonessential tasks teachers currently undertake to allow for more teaching time and to improve system efficiency. Second, MOE should take steps to ensure that the mandated full 180 days of instructional time are delivered. Third, at cycle one the current pilot project where one teacher teaches all subjects to one class should be extended as soon as possible.

There is an opportunity for on-going improvement in teaching quality through a teacher career structure linked with in-service continuous professional development.
Ideally there should be a teacher career structure where promotion is linked to teacher performance. Measurement of teacher performance in terms of examination scores is problematic, as experience elsewhere indicates that a range of factors, including social background and opportunities to learn, can influence outcomes. In particular, decision making based on examination results risks having negative effects, including encouraging teaching to the test, emphasizing memory or recall type questions and excluding weaker students. Promotion, such as selection of senior teachers, could be done through a competitive process with an interview and could draw on data, such as attendance at school, completion of recognized in-service courses and principals' reports. Such a system would provide incentives for regular attendance, positive engagement with continuous professional development and a positive professional attitude within the school.

The MOE should encourage teacher collaboration to improve teaching.
There is a need to refocus the system on quality, in particular teaching quality. Improving pedagogy quality is likely to involve sustained engagement with teachers, allowing them to put ideas into practice and take ownership of the process. In Japan for example, groups of teachers study lessons together to examine and refine the teaching of individual topics (box 5.8). In developing such programs, the MOE should consider (1) making greater use of the expertise of practicing teachers, (2) encouraging teacher-peer collaboration where teachers meet at the local level to share ideas and develop good practices, and (3) encouraging the development of teacher subject associations, which provide a forum for professional development.

Box 5.8
Reflective Practice: Lesson Study in Japan

Japanese teachers have a long history of doing lesson study. These are cycles of activities in which teacher groups, usually by grade level, work together to design, implement and improve one or more research lessons and seek to make positive changes in instructional practice and student learning. Teachers teach these collaboratively and carefully planned research lessons with team members observing lessons and taking careful notes on learning processes. This ongoing form of professional development has generated "shareable knowledge" and developed schools as organizations where teachers can learn and progress together. It is also believed that lesson study contributed to Japan's shift from "teaching as telling" to "teaching for understanding," especially at the elementary level from the 1970s to 1990s.

Source: International Alliance of Leading Institutes 2008.

CHAPTER 6

RELEVANCE
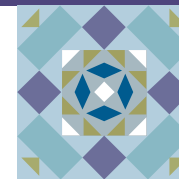
In addition to good performance in access, teaching quality and student achievement, an education system needs to be relevant to the nation's culture, society and economy. This chapter focuses mostly on education's relevance to the economy, beginning with a review of Oman's current situation and challenges on the demand and supply sides and concluding with possible options for improvement.

6.1   THE CHALLENGE OF POST-BASIC EDUCATION

A duality of clients and missions characterizes secondary education.

In addition to the integral development of children, pretertiary education serves two purposes: grooming students for further studies and preparing them to enter the work place. The education system has two "clients:" the institutions of further learning and the labor market. The youth leaving the education system are expected to be both trainable and employable. College readiness and immediate or deferred career readiness are expected from general education graduates. In many countries, upper secondary education represents an especially arduous policy challenge for education planners, and building political consensus for this level has often turned out to be more problematic than for basic and tertiary education (box 6.1). Upper secondary education policy choices are more complex because of the intrinsic duality of the purposes of this education level. It is at the same time: (1) terminal and preparatory; (2) compulsory and elective; (3) uniform and diverse; (4) serving individual and societal needs and interests; and (5) integrating but also screening students according to academic ability (World Bank 2005). In Oman, the two years of post-basic education are at the forefront of this duality of missions, as the pivot between the school world and the work world and the transition between these two worlds.

Box 6.1
Classic Options for Secondary Education in an Industrial Economy

Within the framework of an industrial-based model, the classic options for secondary education provision involve the disaggregation of policy into three dimensions: (1) selection and specialization; (2) academic-vocational balance; and (3) disciplinary or nondisciplinary nature of curriculum design and development. A matrix of policy choices and trade-offs is implicit, resulting in a broad framework for policy analysis of secondary education systems. Combining and balancing the three dimensions yields a set of three alternative policy scenarios for secondary education with clear implications for the financing of secondary education outlined as follows:

Scenario 1: Highly Specialized and Highly Selective Tracking.
In this scenario students take examinations at age 11–12, resulting in attendance at different types of lower secondary school. Vocational education is a main option in lower secondary school. Emphasis is placed on traditional disciplines in academic tracks and on-the-job preparation and practice in the vocational track.

Scenario 2: Deferred Specialization and Selection.
Specialization and selection are deferred to the end of the lower secondary level. A framework of elective subjects is used as a device to introduce limited internal differentiation. Vocational education is pushed to the upper secondary level. Some effort is made to introduce vocational elements in the common curriculum. Cross-curricular issues and interdisciplinary approaches are considered, but traditional areas continue to frame the secondary curriculum.

Scenario 3: Specialization and Selection Deferred to Higher Education.
A system of electives and homogeneous student groupings form the internal system of selection within a given secondary school. Vocational education is a fully post-secondary enterprise, and vocational elements are increasingly built into the academic curriculum. Apart from languages and mathematics, the rest of the curriculum departs from traditional disciplines by including widespread use of skills-based, project-based, and cross-curricular alternatives.

Source: World Bank 2005.

It is still too early to provide a comprehensive assessment of the impact of Oman's education system reform and, in particular, of the new basic/post-basic structure.

The first consultancy report on grade 11 and 12 reforms states that the aim of the reforms is to produce "graduates of Secondary Education who are capable of strong academic performance according to international standards, or who are ready to make a productive contribution to the workforce" (MOE 2003). The new post-basic education program rightly identifies the most important features needed to reach the initial aim: diversity, choice, flexibility and meeting individual student's needs (MOE 2008e). It also recognizes the basic skills needed to reach this aim: communication, numeracy, IT, problem solving, personal and interpersonal skills. The first cohort of students who benefited from the start of the new system graduated in 2009 and is too small to draw solid conclusions. Therefore, the observations presented in this chapter are based on the previous secondary education structure that is gradually being phased out, and they do not necessarily apply to the new generation of students.

6.2 THE SUPPLY SIDE: PRODUCTS OF THE EDUCATION SYSTEM

This section provides a broad review of the volume and composition of the population of students transitioning toward the final years of the general education system and moving up to further education and training after leaving school.

Grades 10 to 12

While a high proportion of Oman's young people remain in school until the final years of the education system, the underperformance of boys and the high proportion of over-aged students are matters of concern because of possible consequences at a later stage in life.

Entry to grade 1 is almost universal for Omani nationals and the survival rate to grade 12 was 86 percent for Omanis and non-Omanis in 2008/09 (figure 2.2). The transition rate from the final grade of basic education (grade 10) to the first grade of post-basic education (grade 11) was 89 percent in 2008/09 (table 2.4). Repetition rates have dropped considerably over the last six years for all grades in basic and post-basic education. However, the high repetition rates of the past are still evidenced in the high proportions of over-age students in the final years of education. Among post-basic education students, almost one student out of three is above the intended age corresponding to each grade. In 2008/09 despite sharp improvement, approximately 29 percent of grade 12 public school students were still over the intended age for that grade by more than 6 months.[43]

Transition to Further Learning

There are two possible educational paths after grades 10–12 for those wishing to pursue their studies before entering the labor market: higher education (after grade 12) and vocational training (as early as grade 10). How students select or are selected for one of these paths depends on a number of factors, including their own expectations and their meeting the prerequisites.[44] Students' selection decisions also depend on their understanding of the prerequisites for each path, their ability to access accurate information on the prerequisites, and the benefits that they perceive will be gained from each path, including whether they will be able to transfer from one path to another.

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[43] The figure for girls was 26 percent and for boys was 32 percent. Private schools had similar over-age levels.

[44] There is a suggestion (from informal interviews) of a strong preference among grade 11 and 12 students to choose science subjects over humanities, possibly in an effort to increase their chances of entry to HEIs.

A. Higher Education Institutions

There have been rapid increases in enrollments in higher education institutions (HEI); in 2008/09, more than half (55 percent) of grade 12 leavers joined HEIs (figure 2.4).

In 2008/09, close to 82,000 students were enrolled in Oman's various HEIs with a further 12,000 studying abroad (either based overseas or by correspondence) (table 2.4). This equals a gross enrollment ratio (GER) of 35 percent (of 18–22 year olds), somewhat higher than in many other Middle East and North African (MENA) countries (figure 2.5). Private HEIs in Oman commenced operation in 1994 and now account for one-third of all HEI enrollments (table 2.4).[45] In 2008/09 approximately one-quarter of Oman's HEI students were attending a college of technology. The only public university, Sultan Qaboos University (SQU), enrolled 19 percent of Oman's HEI students — less than the 28 percent just five years earlier. A significant number of students start their higher education career by studying abroad (table 6.1).

Table 6.1

Enrollments in the First Year of Higher Education Institutions, 2007/08 and 2008/09

	2007/08		2008/09	
	Number	%	Number	%
Total Studying in Oman and Abroad	24,113	100	25,694	28
Total Studying in Oman Institutions	21,082	87	23,583	92
Private Universities and Colleges	8,246	34	10,509	41
Colleges of Technology	6,318	26	6,844	27
Sultan Qaboos University	2,810	12	2,850	11
Colleges of Applied Sciences	2,000	8	1,750	7
Health Institutes	879	4	898	3
Institute of Shari'a Sciences	243	1	215	1
College of Banking and Financial Studies	586	2	517	2
Studying Abroad[1]	2,456	10	1,475	6
Studying Abroad by Correspondence[1]	575	2	636	2

Source: MOHE 2008 and 2009.

Notes: The data in this table differs from the data in table 2.4 because this table includes first year students only (table 2.4 includes all enrolled students).

[1] The number of first year students has been estimated for those studying abroad in 2007/08 and those studying abroad by correspondence in 2007/08 and 2008/09 by taking 28 percent of the enrollments. This percentage is the number of first year students in HEIs in Oman as a proportion of the number enrolled in any year for 2008/09.

The fierce competition for places in Oman's HEIs, the perceived superiority of HEIs abroad, and the lack of a foundation year in most foreign HEIs have encouraged more grade 12 graduates to enroll in overseas universities, especially those in GCC countries.

With the rapid increase in post-basic education graduates, competition for places in Oman's HEIs has become stronger. The demand has been met in part by private universities and colleges, colleges of technology, SQU, colleges of applied science and other colleges and institutes (table 2.4). There are a number of reasons, however, why increasing numbers of Omani students have opted to study abroad. First, there is the lure of free tuition in Arabic at universities in other GCC countries. Second, a belief exists that overseas higher education is more valuable than studies in a domestic institution. Finally, overseas universities generally do not require the foundation year that Oman's universities expect. The subjects chosen by those opting to study abroad indicate that supply scarcity is not the main driver: more than half of Oman's graduates from some Arabic foreign universities study education and very few are in disciplines not taught in Oman's HEIs. The United Arab Emirates and other Gulf countries enroll 78 percent of all Omani students studying abroad. India, New Zealand and Malaysia have become attractive destinations, in addition to the UK, USA, Australia and Canada.

University education is the preferred option for those graduating from grade 12, but acceptance rates are low.

The number of students who applied to a HEI for 2008/09 through the Higher Education Admission Center (HEAC) electronic system[46] (46,687)[47] was approximately equal to the number of students enrolled in grade 12 in 2007/08 (46,316).[48] This indicates that post-basic education graduates' first choice is to pursue a university education. However, only 32 percent (15,072 applicants) were offered a place.

Conditions of entry to SQU are stringent.

In addition to passing the General Certificate of Secondary Education (GCSE) in the year of entry, other admission requirements include (1) holding Omani nationality; (2) being less than 25 years of age; (3) having obtained minimum stipulated percentages and (4) having scored high grades in the requirements for chosen specialization. Conditions of entry in the other HEIs are not as strict as those imposed at SQU but still constitute a screening device, reducing access to higher education. Like SQU, the colleges of applied sciences, higher colleges of technology and most other public HEIs, as well as many private ones, use English as a medium of instruction. While this may be beneficial for students, since English is almost universally required for professional jobs, university lecturers have indicated that the English level of entrants has not met the standard to adequately learn course content.

Before participating in a higher education program, most entrants have to attend a "foundation year" to reach the level required to engage in genuine higher education, particularly in English.

In 2007/08, there were 13 students in the "foundation year" for 10 freshmen in first year in SQU (and 16 to 10 in the Salalah College of Applied Sciences). Private universities also resort to a foundation year where they enroll one-quarter of their freshmen. The fact that a foundation year is necessary to engage in higher education studies is a clear indication that graduates from secondary school are not

[45] In 2008/09 private HEIs in Oman account for 34 percent of all HEI enrollments (including those studying abroad), or 41 percent of enrollments in Oman's HEIs (excluding those studying abroad).

[46] The HEAC electronic system was introduced in 2006. It allows students to apply to any higher education institution in one single application.
[47] A further 4,175 applied for self-payment programs.
[48] This does not include enrollments in international schools (HEAC 2009).

adequately prepared. It is hoped that the increased emphasis given to English, information technology (IT), science and mathematics in basic education will help to mitigate this weakness. English is the overwhelmingly selected major in the foundation year and the exclusive one in the case of the SQU's College of Education, strongly suggesting that these graduates are not ready to be taught in this language. The Language Center at SQU is dedicated to develop and teach intensive English language courses aimed at boosting students' proficiency in English.

New entrants to higher education are predominantly choosing to major in scientific streams.

According to the HEAC statistics, as many as 31 percent of new entrants (excluding those doing a foundation year) select engineering, 15 percent science and 13 percent information technology, while another 9 percent chose medical studies (HEAC 2009).[49]

B. Vocational Training and Technical Education

Despite recent increases in enrollments, Oman's vocational and technical subsector is still relatively limited and has room to expand.

In 2008/09, over 21,000 students were enrolled in colleges of technology and over 2,500 in the five vocational training centers (VTCs) run by the Ministry of Manpower (MOM) (chapter 2). The student body of the colleges of technology is predominantly male (60 percent). Most students at these technical colleges have to attend a foundation year. The number of students admitted to this foundation year surged from approximately 2,200 in 2001/02 to over 7,500 in 2008/09. The fact that technical colleges share the foundation year syndrome with universities demonstrates that this foundation year remains a necessity for secondary school graduates, regardless of the path they take to continue their studies. Enrollments in the second year of colleges are equally distributed between engineering and science on the one hand and commercial studies and information technology on the other.

The VTCs are the main base for preparing Omani youth for jobs in occupational areas and, as such, are intended to be directly in sync with the labor market.

Comprised of three stages, VTCs are accessible to students as early as the end of grade 9 (for the basic training program), but they are mostly geared toward grades 10–12 school leavers.[50] In 2008/09, there were 1,782 new entrants to VTCs. The majority of trainees study in fields such as equipment, facilities and vehicle maintenance.

Private institutions are also present in the vocational training subsector.

The focus of private vocational training institutions is more on administrative fields (62 percent of enrollments) than on technical and craft fields (21 and 17 percent, respectively). Only 15 percent of enrollments are females. Most trainees are graduates of post-basic education (71 percent).

Following international practice, the MOM and Ministry of Higher Education (MOHE) are working together to create an integrated system of technical education and vocational training.

One concrete manifestation of efforts to bolster the complementarities between VTCs and the colleges of technology and to establish bridges between the two systems is the opportunity given to the "distinguished graduates" of VTCs to join the colleges of technology (appendix P).

Outputs of the Education System

Each year, approximately 20,000 young people exit the education system, do not attend technical, vocational or higher education or training and are added to the labor force.

Even if statistics are incomplete,[51] it remains that almost half of the cohort of grade 12 leavers — approximately 20,000 — are left out of the education system and are technically members of the labor force (figure 2.4). These young people are likely in a precarious situation and may face particular difficulties in finding gainful employment. The lack of information on their exact number, gender composition and real situation in terms of the labor market seriously hinders any preventive and remedial measures.

Once students are admitted at SQU, the probability that they will graduate is high.

The total annual output for bachelor degrees and postgraduate diplomas was approximately 13,000 graduates, including universities and colleges in Oman and studies abroad (table 6.2). At SQU in 2008, the 2,287 students who graduated at the bachelor level (excluding postgraduate diploma graduates) reflect an overall survival rate of 83 percent.[52]

Table 6.2

Graduates with Bachelor Degrees and Postgraduate Diplomas from Higher Education

	Number	%
Total Studying in Oman and Abroad	13,026	100
Total Studying in Oman Institutions	11,143	86
Private Universities and Colleges	3,910	30
Colleges of Technology	1,509	12
Sultan Qaboos University	2,673	21
Colleges of Applied Sciences	1,894	15
Health Institutes	829	6
Institute of Shari'a Sciences	260	2
College of Banking and Financial Studies	68	1
Studying Abroad	1,453	11
Studying Abroad by Correspondence	430	3

Source: MOHE 2009.

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49   Girls are a minority among those selecting engineering but a majority among those choosing other majors, especially medicine.

50   Appendix P provides a description of the vocational training and technical education system.

51   Some early school leavers also join apprenticeship programs. Also, those attending military service or studying by correspondence overseas are not included.

52   The survival rate has been calculated using the number of SQU graduates in 2008 (2,287) as a percentage of the new entrants to bachelor's courses in 2004 (2,754) for 2004/05. Note that the number of new entrants to undergraduate degrees in 2004 was estimated because the only data available included postgraduate students, so an estimate was used to remove the postgraduate students from the figure (MOHE 2009).

Despite a recent and rapid decline, a large proportion of HEI students are graduating with education degrees — a unique characteristic of Omani universities.

As many as 28 percent of all 2008 SQU graduates were in the field of education (bachelors and postgraduate diploma) (MOHE 2009), leaving very little space for disciplines, such as engineering and sciences (15 and 5 percent, respectively). This situation reflects the efforts made by the Sultanate to sustain an influx of teachers needed to achieve universal basic education. It also reveals a preference for teaching careers, which offer a secure and stable position in the civil service scales. This unique situation is similar only to Mauritius as far as the overwhelming weight of education is concerned and similar to Gulf neighbors regarding the limited weight of engineering (appendix Q).[53] However, the pattern is changing rapidly; between 2007 and 2008, the share of education students at SQU dropped from 22 percent to 18 percent and the share of engineering students increased from 16 percent to 17 percent.[54] These changes will need to be sustained because the numbers of teachers required at the lower levels are dropping and other needs are emerging.

While science majors are becoming more popular with new entrants to university, graduation does not yet reflect a change.

The majority of students currently graduating are in nonscientific subjects (table 6.3). This is the legacy of earlier selection strategies, which signaled a serious dysfunction in the education system as a whole. These practices resulted from a selection process at play at the university level, whereby enrolling in scientific elective programs in grades 11 and 12 was a strategy to maximize the chances of university acceptance. The prospect of a scholarship in scientific streams in university has helped to reverse this situation, as suggested by the larger share of new entrants enrolled in scientific streams. Whether they have the necessary background in these subjects in post-basic school, and whether they are well equipped to take advantage of further scientific studies is discussed later in this chapter. Among private HEI graduates and graduates studying abroad, majors in the sciences or engineering are rare (table 6.3).

More females than males graduate from all types of HEIs in Oman. Regardless of whether females are over or underrepresented among new entrants to HEI's, they are the majority of graduates (table 6.4).

For example, in private universities, females made up 52 percent of new entrants in 2008/09 but accounted for 62 percent of graduates in 2007/08. While this comparison is not direct (since changes may have taken place in the proportions of new entrants over time), it nevertheless supports the evidence presented elsewhere in this report on the underperformance of males in education. The difference is particularly noticeable in the colleges of technology where only 30 percent of new entrants were females, but they accounted for 55 percent of graduates. The exception is for those studying abroad where 69 percent of new entrants are female but they accounted for 58 percent of graduates.

Career guidance is offered to school students, but the effectiveness of this new initiative is yet to be determined.

The National Career Guidance Center (NCGC) was created in 2008 to provide counseling and information for students about work opportunities. The objectives of the center are (1) to assist students in their own development to become self directed; (2) to prepare students to excel in the workplace; and (3) to deliver effective career guidance and counseling. The initiative involves the creation of career guidance resource rooms in all schools that offer grades 5–12. There are currently approximately 1,200 career guidance specialists and about 60 supervisors. The NCGC collaborates with the MOM, MOHE, Ministry of Civil Service, SQU, and private firms, such as Shell and BankMuscat, and it participates in various events, including the higher education and career fairs. Issues to review as the initiative develops include whether (1) outreach to students as young as grade 5 is meaningful; (2) staffing ratios are an efficient use of the teaching workforce; and (3) staff recruited as career guidance specialists have suitable experience and training.

Table 6.3

Distribution of Graduates (Bachelor Degrees and Postgraduate Diplomas) by Field of Study, 2008 *(%)*

	Public HEIs in Oman	Private HEIs	HEIs abroad	HEIs abroad by correspondence	Total
Medicine, Health Sciences and Pharmacy"	14	1	7	0	9
Engineering	12	9	4	0	10
Science	5	2	3	0	4
Agriculture	1	0	0	1	1
Education	**40**	12	23	32	**29**
Computer Science and Information Technology	5	21	1	6	9
Literature, Arts and Social Sciences	6	11	11	**42**	10
Law, Commerce, Economics and Political Science	13	**38**	22	19	22
Islamic Law	4	0	**29**	0	5
Other	0	7	0	0	2
Total	100	100	100	100	100

Source: MOHE 2009.

Table 6.4

Proportions of Females among New Entrants and Graduates, 2007/08 and 2008/09 *(%)*

	New Entrants 2008/09	Graduates 2007/08
Private Universities and Colleges	52	62
Colleges of Technology	30	55
Sultan Qaboos University	49	54
Colleges of Applied Sciences	44	60
Health Institutes	73	79
Institute of Shari'a Sciences	53	69
College of Banking and Financial Studies	64	68
Studying Abroad	69	58

Source: MOHE 2009.

[53] Note that issues of definition make it difficult to reconcile UIS statistics and those produced by the MOE and MOHE in their respective statistical yearbooks.

[54] This includes bachelors, postgraduate diplomas, masters and PhD programs.

The Center for Career Guidance (CCG) at SQU is another initiative to prepare for the transition from the academic world to work.
This center's mission is to assist students in developing career education and employment decision plans and to "enhance the interface with the labor market to maximize the employment opportunities available to SQU graduates." Its objectives cover the whole spectrum of activities from self-knowledge development and suitable academic program selection to job-search skills and occupational information gathering. The CCG conducts a variety of activities, including individual consultation on careers, advertising graduate employment opportunities, maintaining a dedicated website and coordinating an annual Graduate Destination Survey.

6.3   THE DEMAND SIDE: LABOR MARKET REQUIREMENTS

Oman's labor market is dominated by extraction industries with manufacturing accounting for only a small component.
The structure of the labor market mirrors the structure of economic activity as measured by the contribution of each sector to the gross domestic product (GDP). Oman features some unique characteristics: (1) the share of agriculture is minimal, (2) the contribution of manufacturing (non-oil and non-gas activities) is low, and (3) services are not yet fully developed (table 6.5).[55]

Table 6.5

Sectoral Contribution to GDP in Selected Countries, 2007 *(%)*

	Oman	Estonia	Hong Kong	Jordan	Korea	Malaysia	Mauritius	Saudi Arabia	Singapore	Turkey	UAE
Agriculture	2	3	0	3	3	9	5	2	0	9	2
Industry	49	29	9	32	39	51	28	70	31	28	56
(of which manufacturing)	10	17	3	21	28	30	20	8	26	18	14
Services	50	68	91	65	58	41	67	27	69	64	42
Total	100	100	100	100	100	100	100	100	100	100	100

Source: MONE 2009; World Bank *At a Glance Tables*.

Notes: "Industry" includes petroleum activities. The figure for Turkey is for 2008. The columns may not add to 100 percent due to rounding error.

Economic Activity Rates

The level of participation in the labor market in Oman is relatively low, especially for women despite their significant representation among higher education graduates.
Oman's economic activity rate at approximately 55 percent in 2003 is on the low side, reflecting the very young structure of the population (ILO LABORSTA).[56] The activity rate of women is particularly low at 25 percent in 2003 (appendix table R.1). While the activity rate for both men and women peak at the same age range (25–29), it plateaus until about 50 for men, but it drops much earlier for women (appendix figure R.1).

Oman's economically active population is concentrated in public administration and private services with little participation in manufacturing.
The structure of the labor force by sector places Oman in a unique position. Based on data between 2003 and 2007, the two main features of Oman's economic activity structure are (1) a particularly small fraction of the labor force is engaged in manufacturing activities, and (2) an exceptionally high proportion is employed in public administration (table 6.6).[57]

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55 Data on employment in Oman present discrepancies, which make their use and interpretation difficult and subject to further checks and confirmation. In particular, data available from international agencies (ILO LABORSTA) do not always match those coming directly from various governmental agencies.

56 The economic activity rate is the proportion of the population of working age who are employed or unemployed (looking for jobs and available for work). Currently, the working age in Oman starts at 15 years (employment law, article 75 of the chapter on employment of juvenile and women).

57 The MENA region holds a world record in share of the public sector in total employment, and several countries in the region report higher shares than Oman. This regional peculiarity is a source of distortion as generous wage and security schemes lure away national citizens from private employment (World Bank 2008b).

Labor productivity in the service sector — which employs half the workforce —
is low.

Comparing the labor force structure with the contribution of each sector to the GDP provides a
reasonably good proxy of labor productivity. Using this measure, agriculture has not only the lowest
productivity of all sectors in Oman but is also less productive than agriculture in countries to which
Oman is compared. Productivity in services is also lower in the Sultanate than in comparable coun-
tries. Productivity is higher, however, in extraction activities (appendix table R.2). The data suggests (1)
there is potential for increasing manufacturing in Oman; (2) civil service's absorptive capacity is likely
exhausted; (3) more people can move away from agriculture; and (4) there is a need for upgrading
service sector workers' skills to increase productivity.

Expatriates dominate the Omani private sector labor force, as in other countries in
the region.

In 2009, expatriates accounted for 36 percent of the population (up from 27 percent in 2006), and
those aged 25 to 54 years — the bulk of the economically active population — outnumbered their Omani
counterparts (MONE 2010). The total number of expatriates reached approximately 1,156,000 in
2010, up from 600,000 in 2005, despite the expectations of the 7th Five Year Plan to stabilize the
foreign population (MONE 2006). In 2007, the activity rate of expatriates was estimated at 98 percent,
showing that they are in Oman to work.[58] Expatriates represent approximately 75 percent of the labor
force in the Sultanate. They have a strong presence in the private sector accounting for 85 percent of
the labor force, while their share is 24 percent in public corporations and 11 percent in the civil service.
Yet, they are mostly absent from public general and basic education, and their presence is marginal in
universities.

Education Level of the Labor Force

Oman's literacy rate has reached OECD levels for the new generation of entrants to
the labor market, but the rate is still low for the labor force as a whole.

The overall literacy rate of the total adult population aged 15+ is lower than what is observed in compa-
rator countries, and the gender gap substantially higher (chapter 2). For the generation aged 15 to 24,

however, the literacy rate is approaching 100 percent for both sexes, showing the gender gap has been
closed and putting Oman close to the OECD countries.

At the outset of the new century, the educational level of the economically active
population was still low, but at the beginning of the decade, Oman already had high
rates of female tertiary graduates in relation to comparator countries.

A second, more focused, way to look at human capital stock is to assess the educational attainments
of the economically active population. In 2000 (the most recent year with internationally comparable
data), one-quarter of the Omani labor force still had less than a year of education, a poor achievement
by international standards (appendix table S.1). Focusing on the 25–29 age group, however, shows
that Oman was already ahead of comparator countries at the beginning of the decade for the share of
women with a higher education level. In 2000, 55 percent of Omani women of this age cohort held a
tertiary education degree compared to 17 percent of males, a difference that was larger than in the
selected countries (appendix figure S.1).

The expatriate labor force is represented more than Omanis in all areas of work
except the public service.

The distribution of the expatriate labor force in the private sector by education level is bimodal: (1) a
pool of unskilled laborers, and (2) a group of highly educated professionals. In terms of occupation type,
expatriates dominate all categories of employment with the exception of clerical occupations, which are
overwhelmingly held by Omanis. Past recruitment policies and personal preferences make the public
service popular among Omanis — including the highly educated ones — while expatriates dominate the
private sector. The public sector attracts educated personnel both Omanis and expatriates. More than
two-thirds of the expatriates working in the civil service and public corporations have at least a univer-
sity degree. In these sectors, they outpace Omanis in relative terms despite the fact that educated
Omanis are disproportionally concentrated in public agencies (table 6.7). This pattern has become
more pronounced over time. The public sector continues to lure away educated Omanis — women in
particular — as shown by the distribution of new appointees.[59]

Table 6.6

Economically Active Population by Sector of Activity in Selected Countries, Various Years *(%)*

	Oman 2003	Estonia 2008	Korea 2007	Malaysia 2008	Mauritius 2008	UAE 2008
Private services	25	36	45	38	38	45
Public administration and defense	25	6	3	7	7	11
Electricity, gas, water supply & construction	19	14	8	10	12	16
Education, Health & Community Services	13	19	18	11	13	12
Agriculture, Fishing	9	4	7	14	9	5
Manufacturing	9	21	18	19	21	10
Total	100	100	100	100	100	100

Source: ILO LABORSTA, retrieved November 2010.

Note: The columns may not add to 100 percent due to rounding error.

Table 6.7

Distribution of Omanis and Expatriates in the Public Sector by Level of Education, 2007 *(%)*

Level of education	Civil Service		Public Corporations	
	Omanis	Expatriates	Omanis	Expatriates
Pre-primary	13	2	6	0
Primary	5	0	7	0
Preparatory	5	0	7	0
Secondary	14	1	26	2
Post secondary	64	97	53	97
Total	100	100	100	100

Source: MONE 2009.

Note: The columns may not add to 100 percent due to rounding error.

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[58] Out of a total population of 820,000, there were about 800,000 workers (of which 715,000 are aged 15 to 59).

[59] Seventy-six percent of women newly appointed in the civil service had a post-secondary education level (MONE 2008).

6.4   BALANCING SUPPLY AND DEMAND

This section analyzes how the supply from the education system and the demand for its products meet. It reviews successively the demand from post-secondary education institutions and that from the labor market, which together are the main "clients" of the education system.

Tertiary Education: The Legacy of the School System

Omani universities are underrepresented in the subset of regional university rankings. Unfortunately, instruments to assess students' achievements at the tertiary level are not available. This prevents meaningful international comparisons. However, despite their pitfalls university league tables offer an alternative method to indicate the quality of tertiary education institutions. In this regard while Arab universities are underrepresented in most rankings, Omani universities themselves are underrepresented in the subset of regional universities regardless of the ranking methodology used (appendix T).

A widely held perception among academic staff at HEIs is that new entrants from the general education system are not "college ready" and that their high scores in secondary schools do not correctly reflect their true level of achievement.
A focus group was organized for this study with SQU representatives to ascertain their expectations of grade 12 graduates with Certificates of General Education. Their common feeling was that, despite high competition for selection at entry to higher education, graduates from secondary school are not well prepared to undertake university-level studies. While it is too early to gauge the impact of the new basic and post-basic education system, the staff present at the focus group agreed that the graduates they inherit from the education system are generally weak in academic topics, especially in scientific subjects and in English, but they also lack writing skills and basic concepts.[60] The relatively low achievements of Omani students in science and mathematics, as assessed by TIMSS in grade 8 (chapter 3) suggest that the problem has its roots at early stages. SQU staff also perceive weaknesses in attitude (creativity, time management, capacity to work independently, work ethic).[61] Both academic and attitudinal deficits explain why a foundation year is deemed necessary to bring secondary school graduates to the level expected of university students. Several staff blame general education system curricula and also point to the fact that secondary school students' high scores overestimate their real achievement. They believe university perpetuates score inflation. In addition, staff attributed the large number of transfers among programs and departments as a sign of a lack of preparedness of secondary school students. The SQU and Ministry of Education (MOE) staffs have high expectations that the students going through the new basic and post-basic education system will be better prepared for higher education.

Employment: The Quantitative Dimension

The imbalance between the overall high rate of production of the education system and the low job creation rate is aggravated by the number of youth leaving the system without skills and by the competition with expatriates.
An inflow of approximately 60,000 young people reach working age each year, while the total number of jobs created annually during the 7th Five Year Plan was in the region of 21,000 (around half of the amount projected in the 6th Plan). Approximately 47,000 are enrolled in 12th grade and 13,000

subsequently graduate from HEIs. The remaining 34,000 leave the school system with only general skills: they originally aimed to pursue their education further and not start a professional career. According to the 7th Five Year Plan, an average 43,000 jobs were to be created annually during the 2006–2010 period; however, employment creation has grown at about half that rate. In addition, approximately 55 percent of these jobs were projected to require either no skills or low-level skills, and only 11 percent and 15 percent, respectively, were expected to be filled by specialists and technicians. Exacerbating the employment issue is the fact that Oman's labor market continues to be dominated by expatriates. On the one hand, most of the demand for low or unskilled labor is met by expatriates who fill low-status or low-paid jobs that Omani citizens tend to avoid. On the other hand, focus group discussions with employers found that they tend to give priority to either expatriates or Omanis educated abroad for high skill or high paying jobs. Until now, young educated Omanis could easily find a civil service job, but this will be less and less the case as the civil service becomes saturated.

Like many countries, Oman has a high rate of unemployment among graduates.
The 2008 Labor Force Survey (LFS) estimated the unemployment rate for 15–24 year olds at 25 percent, and these young unemployed accounted for 65 percent of all unemployed. These figures are consistent with what is observed in other countries of the region. Of relevance to the current education system, among the population of job seekers of particular interest are those who have not been previously reported as unemployed and who are looking for their first job, mostly in the 15–24 age group. The majority of first-time job seekers (approximately 80 percent) have reached secondary or higher education (table 6.8). In comparison, only 32 percent of workers who had terminated their job in 2007 had reached this level of education. In many countries (including advanced, developing and emergent economies), the disparity between rapidly growing secondary education enrollments and the slow rate of job creation leads to rising numbers of young people with degrees but no employment prospects. Even though circumstances vary widely from one country to another, the challenge is similar and is characteristic of a period of mutual adjustment between the school system and the economy. In India, only a quarter of the 600,000 engineers produced annually are employable. In many cases, global graduate unemployment coexists with talent shortages.[62]

Table 6.8

Distribution of First-time Job Seekers by Gender and Level of Education, 2007 *(%)*

		No formal education	Primary (grades 1-6)	Preparatory (grades 7-9)	Secondary (grades 10-12)	Post-secondary	Total
15-19	Males	7	6	17	71	0	100
	Females	4	3	4	88	1	100
20-24	Males	3	7	14	65	11	100
	Females	0	1	6	65	27	100
25-29	Males	6	10	13	59	13	100
	Females	0	3	6	49	41	100

Source: LFS 2008.

Note: The columns may not add to 100 percent due to rounding error.

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[60] Echoing these messages, recently interviewed educators point to "poor prior preparation and low motivation of students" and advocate setting clear (and higher) standards (Al-Barwani, et al. 2009).

[61] College readiness is a widely shared concern not limited to Oman: the Bill & Melinda Gates foundation has "College-ready for All" as one of its flagship program for secondary schools in the US.
See http://www.gatesfoundation.org/learning/Documents/College-ready-for-all-education-plan.pdf.

[62] According to the most recent survey completed by Manpower of employers in 36 countries, 31 percent of employers have difficulty filling key positions (Manpower 2009).

Box 6.2
Employers' Views on Relevance of Graduates' Skills

Operators and technicians

Graduates from colleges of technology do not have the skills required by private companies for operators and technicians, that is mechanical, electronic and instrumental skills.

Banking sector

Secondary school graduates lack basic communication and language skills, strong motivation, presentation skills and critical thinking skills — even though some have better skills than diploma holders. Some of those who do well in tests cannot explain how they got the answer.

Civil servants

High school and university graduates recruited by the MOM and the Ministry of Civil Service often have weak problem solving, creative and English skills.

Source: Authors, based on focus group of employers, 2009.

Box 6.3
Soft Skills Sought by Employers in the MENA and South Asia Regions

Attributes

Enthusiastic, energetic, drive and commitment, positive outlook, committed towards performance, high sense of responsibility, enthusiastic, dedicated, "can do," high level of integrity, dynamic, self motivated, innovative mind, cheerful, smart and independent, pleasing personality, emotional maturity, ambitious, willing to perform, natural leadership qualities, good interpersonal and communication skills, hard working, ability to inspire and motivate, strategic thinker, articulate and diplomatic communicator, presentable.

Acquired skills

Positive working attitude, self motivation, task oriented, strong critical thinking, systematic working style, ability to work long hours without supervision, ability to work beyond regular working hours, ability to meet deadlines, strong attention to detail under pressure, forward looking, career minded, result oriented, excellent team player, out of the box thinker, aptitude to work independently, make quick decisions, ability to demonstrate skills in decision making, negotiation skills, analytical skills, active involvement in extracurricular activities during school/university career, good public relations skills, proven track record of achievement.

Source: Authors, from national newspapers employment sections (MENA and South Asia Regions).

There is general dissatisfaction among employers regarding the low employability of Omani graduates and their lack of both technical and attitudinal skills necessary to perform in the workplace.

Employers gathered in a focus group organized in Muscat in November 2009 admitted a preference for Omanis trained overseas or (even more) for expatriates when recruiting new personnel. From the employers' perspective, the edge that both types of candidates have over homegrown Omani graduates ranges from mastery of basic skills to scientific and technical skills and also to soft skills (box 6.2). These employers did not deem the graduates as prepared for teamwork, public speaking, problem solving and critical thinking. They believed Omani graduates lack willingness to take responsibility and their work ethic is often not developed; graduates are good at memorizing but not at problem solving.

In addition to core competencies, employers recruiting professionals are looking for skills in English and IT — indispensable in the globalized economy — and a variety of features that can be considered "soft skills."

It is important to note that these soft skills are in demand for a whole range of occupations and sectors not limited to chief executives or managers. As such, soft skills are becoming more and more an integral part of the core competencies (box 6.3).

The similarities between HEI staff opinions and employers' views on preparedness of young people are striking.

They suggest the expectations of the two "clients" are convergent, and therefore, there is no fundamental contradiction in serving both. There is weak coordination between some SQU departments and labor market institutions on the skills needed by the market, and this results in some graduates not meeting all the required skills. In contrast to employers' view young job seekers believe that their education has prepared them adequately for work and their level of confidence increases with their educational qualifications (figure 6.1).

Figure 6.1

Percentage of Job Seekers (15 years and over) Not Previously Employed and Who Believe Their Education Qualifies Them Adequately For Employment, by Educational Status, 2008 *(%)*
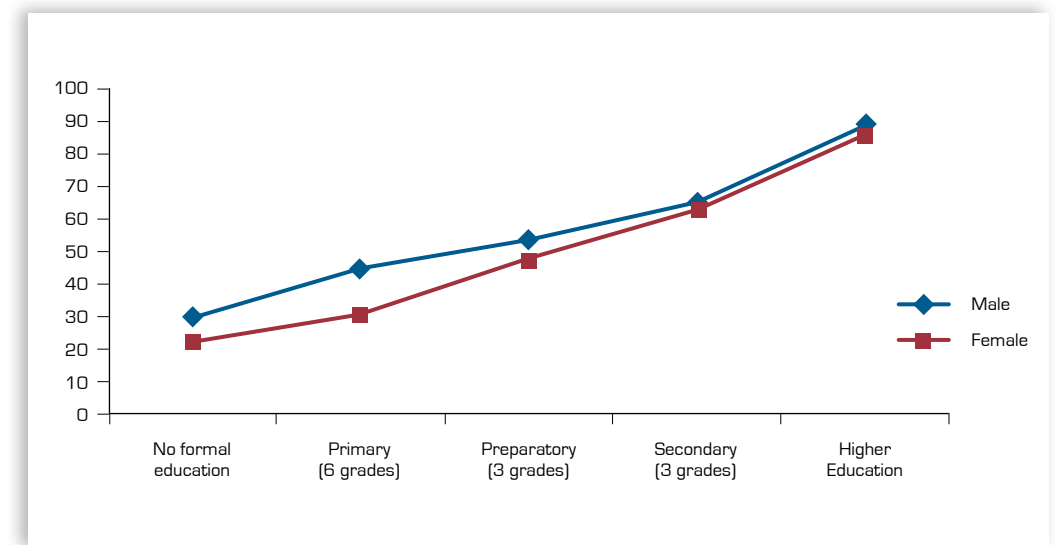
Source: LFS 2008.

With such unrealistic expectations, it is not surprising that only a minority of young job seekers attend short-term vocational training to complement their general education.

Yet, attendance at such training increases with education level. Those with a secondary education, in particular, are significantly more likely than their counterparts with only a primary education to join training courses to improve their access to employment (appendix U).

The 2008 LFS shows that approximately one in five first-time job seekers is rejecting opportunities to work in the private sector.

Aversion to a private sector job is significantly more marked for females than for males.[63] Rejection of the private sector peaks for illiterate females and university-educated males. These results suggest that neither risk taking nor entrepreneurship is encouraged by the formal education system. In addition, the LFS reveals the type of job that job seekers desire. Females are mostly interested in desk jobs and this increases with education levels. The same is true to a lesser extent for males, but males are more willing to accept any kind of job (appendix U). Desk jobs are often associated with civil service positions.

6.5   THE LABOR MARKET PROSPECTS

Despite the likelihood of a relatively rapid rebound from the global economic downturn, net employment creation and a reduction in unemployment cannot be automatically expected.

After enjoying a 6.2 percent growth rate in 2008, the Omani economy grew at 3.7 percent in 2009 despite the global financial crisis. Since the economic fundamentals remain strong, there is likely to be a return to precrisis growth within the next couple of years, even if the 7.4 percent projected by the "Vision 2020" takes longer than initially thought.[64,65] As confirmed recently in several countries, however, economic recovery does not mechanically reduce unemployment.

The slowdown of demographic growth will cause a reduction in the size of cohorts exiting the education system, but the aggregate domestic demand for labor will not necessarily increase.

The sharp decline in Oman's fertility rate will result in a reduction of 20–25 percent in the number of graduates from basic and post-basic education in the next ten years. At the higher education and technical education and vocational training (TEVT) levels, however, "Vision 2020" projects an enrollment increase, as well as an increase in TEVT's share of higher education from 4.5 percent in 1995 to 50 percent in 2020.

Demand for local workers may remain constrained, and competition with foreign low cost and high skilled labor may intensify.

Omanization rates for the two extremes of the skill spectrum (very low and very high skill jobs) are expected to increase in the private sector. However, fewer jobs were created than sought despite respectable economic growth, and therefore, there is no reason to think that a likely less robust growth will generate a stronger demand.[66,67] In addition, there are mounting pressures from countries that are traditional exporters of low cost labor force. For instance, in its strategy to deal with an unskilled labor surplus, Yemen is counting on the trend to "Arabise" the work place in Gulf countries by substituting expatriates from Asia with expatriates from Arab countries (Ministry of Planning and International Cooperation, Yemen 2009). With the highest proportion of Asian expatriates in Gulf countries (92 percent compared to a regional average of 70 percent), Oman is seen as a country of special opportunity. Therefore, competition between job seekers from Oman and from other Arab countries is likely to increase both for low skills/low paid jobs and high skills/high paid jobs. The only way to compete at the high end is to enhance education quality of Omani citizens.

Therefore, Oman's graduate unemployment is unlikely to recede soon.

This view is consistent with the ILO Global Employment Trends 2010, which projects the largest year-on-year increase in the number of unemployed worldwide in at least ten years (ILO 2010). Individual strategies to deal with the situation may trigger an increase in emigration to countries where skills shortages are particularly acute.[68] Such strategies, however, would be available only for those Omanis equipped with the appropriate (needed) skills, and they would have to compete with counterparts from neighboring and other countries.

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[63] The reasons for such a choice are quite different for males and females. The majority of males cite low wages, while females mention long working hours as the main reason for not looking for work in the private sector (low wages come only as a distant second).

[64] The experience of the 6th Five Year Plan showed that the domestic projections were conservative because actual economic growth was stronger than had been projected (4.6 percent compared to the projected 3.0 percent).

[65] According to Merrill Lynch, it is estimated that (1) recovery will be stronger on the periphery of the GCC countries where Oman is located and (2) Oman will enjoy the highest non-oil growth in the region in 2010 (quoted by The MENA Weekly Monitor, February 12–19, 2010).

[66] Projects, such as the Sanad Training Program, aim to support Omani citizens to open their own business. Their quantitative impact on Omanization remains limited (less than 6,000 beneficiaries in 2007).

[67] Several recent megainvestments are capital intensive and have little impact on hiring Omanis.

[68] This scenario is analyzed in particular by Al-Barwani et al. 2009.

To be economically competitive, Oman will need to upgrade the skills and education of its workforce.

Currently, Oman stands in the first third of about 130 countries ranked in the Global Competitiveness Index (GCI) and in the first half of those ranked in the Knowledge Economy Index (KEI). It is clearly ahead of North Africa countries but also consistently behind direct competitors, such as UAE and most Gulf Countries and even more distant from countries, such as Korea or Singapore. Given that education is strongly correlated with overall economic performance and that Oman's rank on the education component of the 2009 KEI is particularly low (86 out of 145), Oman will need to increase its pool of skilled and educated manpower to position itself better in the global market.[69]

The Quality of the Labor Force and Jobs

While Oman's labor force size and labor demand volume are not likely to change radically in the next 10 years, Oman's labor market is undergoing a gradual but irreversible shift in qualitative terms, reflecting the changes in the economy.

The way production and workers are organized is undergoing profound transformations. In the service sector, small and medium enterprises (SMEs) will continue to dominate (more than 85 percent of registered Omani companies have less than 100 employees). In SMEs, there are fewer layers of management and specialized occupational positions and fewer predesignated career paths. Workers are expected to design, develop and implement total solutions rather than provide limited services to the client. In SMEs, rules and regulations are understandably loose. People are working more in teams toward delivering the final product rather than according to protocols. There is a greater demand for self discipline, self confidence and self management. Likewise in large modern organizations, functional departments and lower layers of management are increasingly replaced by task forces, product teams and project groups/teams. Work performance is organized in the form of projects, programs and portfolios. Workers are no longer simple implementers of procedures and solutions handed down from the top.

These organizational changes entail a necessary change in the skills required from the labor force.

Labor markets signal the value of certified skills for successful entry into the workplace. Countries like Oman with relatively open labor markets and where skill requirements are more likely to be clear at the enterprise level tend to value more generic employability attributes. Specific skills tend to be acquired through on-the-job learning and career development within enterprises. Throughout the world, there is a marked trend to shift the focus from cognitive to attitudinal, from manual to intellectual, and from hard to soft skills. While general skills constitute the prerequisite for the acquisition of further qualifications and for almost any kind of job, specific skills linked to particular techniques or occupations will always be needed, even if their contents continue to vary.[70]

6.6　POLICY IMPLICATIONS

The measures to increase education relevance are the responsibility of a wide range of departments, units and other administrative bodies, including ministries other than the MOE.

For the education system to make its graduates both trainable and employable calls for measures across the system, including curricula, teaching methods, teacher training, career guidance, information and assessments. Most of these measures are on the supply side, since the demand side is not under the control of the MOE. Due to the multidimensional nature of education relevance, most of the measures to promote education are outlined in other chapters of this report, and those presented in this chapter mainly echo these measures.

The MOE is acutely aware of the relevance issue and has started to tackle it through a variety of initiatives and instruments.

These include (1) the introduction of basic and post-basic education; (2) curriculum innovations; (3) introduction of research skills; (4) introduction of computers in schools; (5) research methodology; (6) graduation projects; and (7) creation and expansion of the NCGC. Also a committee on relevance was activated and is working on the balance among elective courses. The complexity of the problem, however, requires a more radical and comprehensive approach.

Academic/Vocational Links

The barriers between academic and job-oriented streams and institutions, between general and technical/vocational education and between secondary and higher education could be reduced, and flexibility in the overall system could be introduced to eliminate dead-end streams, to allow second-chance opportunities and to promote lifelong learning.

Experience from many countries suggests that the creation of linkages between general and vocational secondary education is the best way to blur the distinction between the two kinds of institutions and to rehabilitate the value of vocational courses (box 6.4). There is no single way to do this, but what is becoming clear is that early selection and a narrow curriculum should be avoided. Introducing some technical or vocational subjects into post-basic education would be an option. In addition, encouraging some schools to build specific specialized areas, allowing them to become centers of excellence may be another possibility (box 6.5).

Tightening the linkages between general and vocational education has institutional implications, namely a closer collaboration among Oman's governmental bodies in charge of general secondary education (MOE), technical education (MOM) and higher education (MOHE).

Relevance will not be achieved if these three subsectors are not thinking and acting together. Recognizing job-related competencies and establishing correspondences among skills acquired from different types of institutions are important moves to introduce more flexibility in the education system. In this regard, the development of a qualifications framework, as suggested in chapter 8, would be a critical step.

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[69]　www.worldbank.org/kam.

[70]　The most recent annual survey by Manpower (Manpower Inc. 2009) conducted on a sample of 33 countries, from which Arab countries are notably absent, identifies "skilled manual trades" as the "hottest jobs," that is those that employers have the most difficulties filling. Skilled manual trades are defined in the survey as referring to "a broad range of job titles that require workers to possess specialized skills, traditionally learned over a period of time as an apprentice."

Box 6.4
International Responses to the Changing Status of Vocational Secondary Education

Over the past two decades, developed countries have been experimenting with more flexible education pathways in upper secondary education to respond to its falling status, to the demands of a growing and diverse student population, and to changes in work organization. The main challenge is to establish a system that allows students completing the general education pathway to acquire recognized labor market qualifications and that also permits students completing the vocationally oriented pathway to gain entrance into HEIs. A significant constraint on attempts to combine general and vocational education has been the lack of specialized equipment and related resources in schools, which limits choices of modules and subjects and renders earned diplomas or certifications of little value. Employers' expectations and HEI entry requirements are often too demanding for school. A study conducted in several European countries, Australia, Canada and the United States (OECD 1994) identified the following four common elements in this trend:

■ Reducing the number of vocational education fields or programs by broadening vocational areas and qualifications;

■ Creating linkages between general and vocational education;

■ Developing combinations of school- and work-based learning; and

■ Building bridges between secondary vocational education/training and higher education.

The study highlighted two fundamental dilemmas that policy makers face in their efforts to reform secondary vocational education: (1) increasing general education content in upper secondary education would enhance the value of such programs as preparation for higher education, but the programs may become more selective than intended and less successful students may avoid them; yet tailoring upper secondary vocational programs too exclusively to the needs of less successful students would make them unattractive to successful students, which could devalue vocational programs as a desirable option; and (2) attempts to broaden the content of upper secondary vocational programs to be more generic to a significant number of related occupations could limit the programs' appeal for employers who demand more specialized skills. In addition, these attempts might flounder because of limited equipment, physical facilities and poorly trained teachers.

The study yielded some important recommendations for policy makers:

■ Avoid making upper secondary vocational education programs a residual and dead-end pathway linked to poor-quality jobs and directed at the lowest achievers.

■ Provide institutionalized bridges between secondary vocational education and tertiary education and ensure that significant proportions of students take this pathway.

■ Design vocational education and training programs for less successful young people as an element of safety nets rather than as ordinary vocational programs; make sure that safety net programs prepare young people for later participation in mainstream vocational education and training.

Source: OECD 1994.

Box 6.5
Specialist Schools

Specialist secondary schools of different types exist in many countries and serve various purposes. In some cases, specialist schools are used to establish parallel strands of academic and vocational secondary education; in other cases, specialist schools are centers of excellence in particular subject areas, such as science or mathematics. The term is also used to refer to schools for students with specific needs, either learning difficulties or special physical needs.

Academic and vocational strands: In some countries, students are separated into different kinds of secondary education oriented toward either academic subjects or technical/vocational subjects. This approach is used, for example, in Germany where students are separated into a Gymnasium (academic) or a vocational school at the end of lower secondary education. In other countries, the trend has been to offer a range of subjects in one school (European Commission 2009). In the UK for example, 90 percent of secondary students attend comprehensive schools, which allow individual students to select from a range of academic and technical subjects. The vast majority of high schools in the US offer a comprehensive form of education. In theory, comprehensive schools help avoid the stigmatization that may be associated with technical schools and allow greater flexibility for people to take a mix of subjects. Historically, vocational/technical education has tended to be more expensive than academic education. Where there is a parallel system, it is important that opportunities exist for students to move between the specialist strands for those who discover that they are not in the best strand for their interests and aptitudes.

Centers of excellence: In some countries, schools seek to become centers of excellence in specific subjects. These schools teach the normal curriculum but in addition have a strong emphasis on a particular subject, often mathematics or science. In the US since the 1960s, public schools known as magnet schools have existed that are allowed to attract students from outside the normal school catchment areas.

The UK case: In the UK in the 1950s, a tripartite system of secondary education existed where children sat for the eleven plus examination in their last year of primary education and were sent to secondary modern, secondary technical or grammar schools, depending on their perceived abilities. This was largely replaced with a system of comprehensive schools, which teach a wide range of subjects across the academic and vocational spectrum. In the 1990s, a Specialist Schools Programme was created. This allows schools to establish distinctive identities through chosen curriculum specialties, while still delivering the full National Curriculum (Higham 2007).

Source: Authors.

The content of the post-basic education curricula could be reviewed to ensure it is responsive to concerns of "clients" of the graduates from this cycle.

Given the feedback from both higher education leaders and employers regarding secondary education graduates, and the international trends that Oman is poised to follow, improving the curricula will be vital to ensuring education system relevance. This is an enormous and complex task, and also a sensitive one since it touches on many aspects of society. In addition to reducing the distinction between purely academic and practical job-oriented subjects, the MOE could consider curricula organization. The general approach followed in many countries is to move away from traditional curricula based on academic categorization to competency-based curricula. It will be important to identify the core competencies deemed to be needed regardless of the destination of post-basic school leavers. Consulting on the changes with representatives from public and private HEIs and with employers will be essential.

An improvement in English learning quality in post-basic education is necessary, and the MOE could consider the development of "soft skills" and "attitudinal skills" in the curricula.

English is critical not only for students wishing to continue post-secondary studies but also for those desiring to start a professional career. If English language learning is improved in post-basic education, the remedial courses required at university entry become unnecessary. The number of hours currently devoted to English may need to be increased to reach this objective. In addition, the MOE could also examine the new areas covering the "soft skills" and "attitudinal skills," which both HEI staff and employers mention as deficient. One direction to explore would be to entrust the NCGC with the introduction of specific activities to help students develop these skills. To maximize the value of its interventions, the NCGC would need precise inputs from both HEIs and employers.

Teaching Methods

Teaching methods should be aligned so that students acquire not only the essential basic skills that constitute core competencies but also the skills they will need their entire life to learn more, work more independently and better contribute to society.

The acquisition of skills, such as self confidence, creativity or problem solving, is not a topic in itself but is more about how subjects are taught and how to help students learn how to learn. These skills are generally referred to as metacognitive skills (appendix V).

The shift away from a teacher-centered to a student-centered approach in basic and post-basic education has already helped to enhance the quality of teaching and learning, but further improvements can be made.

Teaching methods, such as group and teamwork and out-of-school work, are intended to improve the quality of the learning experience and better prepare students for the pursuit of further studies in higher education. These reforms also aim to develop skills and attitudes that promote autonomous and cooperative learning, critical thinking, problem solving, research techniques, creativity and innovation, which students will require for lifelong learning. They can be further developed and more systematically used so that their impact will be more profound and more durable — useful both for further studies and occupations. Several techniques can be used for these purposes: (1) include projects in applied subjects to strengthen team work capacity, (2) introduce "system thinking" in curricula, (3) encourage and reward independent enquiry and learning, (4) promote open-ended and critical enquiry that challenges the collective wisdom, (5) encourage and reward creativity in problem solving, and (6) introduce concepts of project planning and management.

Teacher Training

Teachers and teacher trainers could be trained to effectively use pedagogic methods that will promote students' appetite and ability to learn by themselves, while equipping them with basic skills and competencies.

Regardless of how proficient teachers are in their own discipline, they need special training to be effective in these new pedagogic methods. Without further training, teachers will not be in a position to transfer "soft," behavioral and metacognitive skills. This, in turn, will require that the curricula of the colleges of education — whether at SQU or in other institutions — be revised in depth, giving more emphasis to teaching practice (as recommended in chapter 5). It also implies that the faculty of these colleges themselves be retrained and that their own pedagogic methods be realigned with modern approaches. This is an urgent task, which could be initiated in the revision of preservice training provided by the Human Resource Development Directorate of the MOE.

Student Flow

Student flow through basic, post-basic and higher education could be improved with the aim that all graduating students are at the intended age for completion and have the skills needed to commence further studies.

Despite improvements in recent years, a significant number of children still graduate over age from grade 12, which puts their future in HEIs and as employees in the workplace at risk. An analysis of the causes of this problem could determine the best ways to mitigate its negative impact on the lives of young people.

Together the MOE and MOHE could analyze carefully the main weaknesses of grade 12 graduates, which necessitate a foundation year at university.

A candid, fact-based discussion of this preparatory year's merits and of how to share responsibilities to correct the lack of readiness for academic work would follow. Ultimately it would lead to a gradual transfer of the foundation year programs to the post-basic education cycle, and the possible phasing out of the foundation year itself.

Student Assessments

The rigor of student assessments could be improved so that they accurately reflect the true level of achievement and help students, educators and employers to develop realistic perceptions and expectations.

As already observed in chapter 3, student assessments could be the main information basis for students, their current and future teachers and their potential employers to form realistic expectations and to make the right decisions regarding both education and job choices. Eliminating complacency in grading would restore assessment credibility. Reliable assessments would also give HEIs and employers the right signals in their admissions and recruitment practices.

School/Work Links

More opportunities could be sought for post-basic education students to gain work experience and for the private sector to come closer to schools. Examples of such initiatives are short internships in companies or in public administration.
In a country where the private sector is still limited, exposure to community and social work would also be beneficial. Such experiences would help build students' responsibility as citizens and would make them more attractive to employers who often favor multiple experiences beyond purely academic (box 6.6).[71]

Box 6.6
Pathways for Youth to Labor Market: An Overview of High School Initiatives in Canada

This study focuses on high schools in four provinces: British Columbia (BC), Alberta (AB), Ontario (ON), Newfoundland/Labrador (NL).

- All four provinces have placed emphasis on career planning as part of the secondary school program. Some require that students prepare an employability skills or career portfolio.

- BC, ON and NL have mandated that secondary students participate in some form of community involvement for a set number of hours as part of their high school graduation requirements.

- BC, AB and ON have established a high school apprenticeship program (a small proportion of the high school population participates and the majority of the group is male).

- All four provinces emphasize the need for local partnerships among schools, post-secondary institutions and employers. ON and AB have supported the development of provincial "brokers" to promote partnerships.

- All four provinces have promoted a decentralized "market" approach to vocational education and training with varying degrees of intervention in coordinating institutional arrangements. There has been little federal involvement in recent years.

- All four provincial governments are interested in increasing the career pathways for students and enhancing flexibility and mobility in learning systems. BC and ON have gone further than others in providing opportunities for high school students to earn post-secondary credits and/or industry certification. To date, these initiatives involve a small proportion of the high school population.

- All four provinces are struggling with the need to constantly update technology, curriculum and facilities and to hire qualified teachers.

- Few provinces collect information about program outcomes, and enrollment information is not readily available or easily comparable across jurisdictions.

Source: Taylor 2007.

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[71] In a recent survey regarding the employability of college graduates, 83 percent of the US employers interviewed stated that it would be very or fairly effective to see an evaluation of a supervised internship where students apply college learning in a real-world setting (http://insidehighered.com/news/2008/01/23/employers).

Bringing together the worlds of school and work is both necessary and difficult for young school leavers who do not have the prospects to continue further education.
Even in countries where there is a wider industrial base, getting the involvement of employers is often elusive "due to lack of corporate responsibility and incentives and high cost of training from employers' side" (Wang 2010). Thus, as suggested previously, partnerships could be encouraged by the state and complementary measures could be taken by both public and private entities for young graduates, especially those who face unemployment (box 6.7).

Box 6.7
Services to Support Young People in Selected Countries

Countries	Packages of services and support
UK	Provide 18–24 year olds with at least six months services on job seeking, career guidance advice, basic education, skills training, work experience. Job placement is subsidized and follow up is provided.
Canada	Government departments and agencies work in partnership with employers' and workers' organizations and civil society groups to offer work experience, learning and skill building opportunities, basic and advanced employment skills services, and assistance in finding career-related summer jobs. Employers are offered wage subsidies for job placements.
Chile	The National Service for Training and Employment is in charge of program coordination and operation aimed at increasing prospects for youth from low-income families and those with difficulties in social and economic integration. The enterprise assumes a tutoring role and provides in-house work experience, ensuring that training is easily adapted to local labor market demand.
France	New Services, New Jobs Program 1997–2003 provided wage subsidies up to 80 percent of minimum salary per job per year for five years to employers who hire young people under contract. Mentors were assigned with the enterprises to provide guidance and support.
Republic of Korea	Youth Work Experience Program in Korea aims to provide work experience support and an employment support system. Through the program, college students are employed as interns in public and private institutions to gain hands-on experience. Enterprises that employ youth as interns can receive wage subsidies for three months and those who hire interns as regular workers can receive another three months wage subsidies.
Hong Kong, China	The Youth Pre-employment Training Program offers training to school leavers aged 15–19 in interpersonal skills, including leadership, self discipline, team building, computer literacy and vocational skills. The program is combined with subsidized on-the-job training to increase employment opportunities. Employers are commissioned and subsidized to appoint mentors to guide trainees throughout their training.

Source: Wang 2010.

Omanization

Efforts should be made to develop alternative strategies to boost Omanization in the private sector.

The lack of presence of Omanis in the private sector is primarily the result of supply and demand in the global economy, over which there is limited control. As education quality improves in Oman's public schools, Omani students will become gradually more attractive to prospective employers. However, short of an aggressive incentive policy to hire more Omani workers in the private sector, the impact of MOE measures may remain limited. Hence, the MOE will need to team up with the other agencies that have a stake in the Omanization policy to design more aggressive measures to enforce Omanization in the private sector.

Management and Planning

The MOE could reinforce linkages with other public and private institutions in charge of regulating and/or providing educational services.

The MOE is only one, albeit the largest, of many actors on the education scene. Cooperation among the various providers of education and training of all types and at all levels is a prerequisite to ensure education system relevance. Likewise, involvement of students, faculty, administrative staff and employers is critical. Inputs from all these stakeholders need to be harnessed, and one way to do this is to provide a forum where their views and feedback can be heard. In that regard, the activation of the National Council of Education (NCE) with an empowered secretariat as proposed in chapter 8 is recommended.

The MOE should emphasize its focus on relevance within its internal structure, so that each department becomes conscious of and ultimately responsible for ensuring relevance.

This implies a reinforcement of the internal cooperation among several units that are involved in decision making "at the top," in particular: General Directors under the Undersecretary for Education and Curricula, those under the Undersecretary for Planning and Human Resources Development, most General Directors of Specialized Directorates and the heads of specialized units, such as the Technical Office for Studies and Development.[72] The cooperation must be extended to all Regional Directorates, and it must percolate down to actors at the school level—principals, teachers and administrators.

Information could be shared with all stakeholders — students, parents, providers, policy makers — so they can strategize and make decisions based on facts and evidence.

Reliable and timely information needs to be available for and provided by the MOE, other ministries, schools and HEIs, principals, administrators, teachers, employers and students, each in their own capacity. Information needs to circulate among all these stakeholders. The MOE — and its MOHE, MOM and Ministry of Health (MOH) partners — could facilitate the information flows among all stakeholders. Primarily, in order to address "leakages" from the education system, a longitudinal study could be undertaken, tracking grade 10 students for a number of years (throughout further studies in an HEI or VTC) to understand how their secondary education performance influences their future career. The NCGC is uniquely positioned to play a key role in making information available and transparent and to oversee the completion of such a tracking study. Additionally, it is not enough for the MOE and other providers and regulators of education to make schooling information available. The flow must go both ways with employers giving as much feedback as possible on their recruitment plans, the kinds of skills they seek and their assessments of the graduates they recruit. The MOE could reach out to these employers and solicit their feedback.

[72] A focal point could be clearly identified to ensure follow up and accountability

CHAPTER 7

COSTS
AND FINANCING
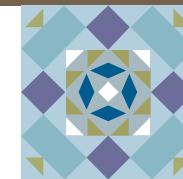
Public education in Oman is free, yet the resources required to make the system more accessible and relevant and to increase its quality are significant. No absolute or universal rule determines if the resources allocated to education are sufficient, efficient or optimally distributed among various levels and functions of the sector. It helps initially to compare Oman to other countries with the same level of development, similar regional features or experiences that have already reached higher-level objectives.[73] This comparison identifies specific patterns and offers an idea of possible areas where efficiency can be improved. However, questions remain about the priorities the Government has defined for the sector: "Could the current strategic objectives be achieved with fewer resources?" or "Would it be possible to achieve more ambitious objectives with the same level of resources?" Even though the education system is free for its users, its resource base is limited. Moreover, there are several other important sectors of activity that compete for the same resources. The idea that "more is better" can be replaced by the question of efficiency. This chapter outlines Oman's education budget, including its main elements, how it has evolved over time, and how it compares to other countries. It examines the important issue of spending efficiency within the education sector.

[73] Most budgetary data come from the Ministry of National Economy (MONE). After the 2010 census, there is a plan to unify all the definitions and time bases with those produced by the MOE. However, because definitions and time bases differ, they are currently not fully consistent with those produced by the MOE. In addition, the data is not fully consistent with data produced by the UNESCO Institute for Statistics (UIS). Hence, the issue of data comparability is a challenge for the purpose of this study but more generally and more importantly for the piloting of the system.

7.1   THE EDUCATION BUDGET: OVERVIEW

The Government has allocated a high proportion of its civil ministries' budget to education. In 2009, education expenditures, including the Ministry of Education (MOE), Ministry of Higher Education (MOHE), Sultan Qaboos University (SQU) and Ministry of Manpower (MOM), which is responsible for technical and vocational education and training, represented 12.8 percent of total government spending (table 7.1). A distinction needs to be made at the outset between recurrent and investment expenditures.[74] Recurrent expenditure on education in 2009 (including all the relevant ministries) represented 17.5 percent of total government recurrent costs or 37.2 percent of government spending on civil ministries (table 7.1). While the MOE accounts for only 3.2 percent of the overall public investment budget, it accounts for over one-quarter (26.1 percent) of the total public recurrent budget (table 7.1). This is because education is a labor-intensive industry: MOE's recurrent costs are more than 90 percent of its total costs, significantly more than in other ministries.

Table 7.1

Recurrent and Investment Expenditures: MOE and Total Public Budget, 2005, 2007 and 2009

Government Expenditure	All (Recurrent + Investment)			Recurrent			Investment		
	2005	2007	2009	2005	2007	2009	2005	2007	2009
RO millions (current)									
Total Government Expenditure	4,207.6	5,880.5	7,428.7	3,212.0	4,165.6	4,707.1	995.6	1,714.9	2,721.6
Civil Ministries	2,077.7	2,737.2	3,850.6	1,531.9	1,898.7	2,216.7	545.8	838.5	1,633.9
Education-related Ministries, of which	545.9	746.2	948.2	493.2	651.1	823.8	52.7	95.1	124.4
MOE	394.3	516.9	630.0	360.6	474.5	578.1	33.7	42.4	51.9
MOHE	24.5	55.8	70.6	22.0	34.8	43.3	2.5	21.0	27.3
SQU	89.6	110.1	142.2	84.6	99.4	127.0	5.0	10.7	15.2
MOM	37.5	63.4	105.4	26.0	42.4	75.4	11.5	21.0	30.0
Percentage (%)									
Education and Manpower as a % of Total Government Expenditure	13.0	12.7	12.8	15.4	15.6	17.5	5.3	5.5	4.6
Education and Manpower as a % of Civil Ministries' Expenditure	26.3	27.3	24.6	32.2	34.3	37.2	9.7	11.3	7.6
MOE as a % of Civil Ministries' Expenditure	19.0	18.9	16.4	23.5	25.0	26.1	6.2	5.1	3.2

Source: MONE 2008 and 2010.

Between 2000 and 2009, the MOE's recurrent expenditure has grown annually by approximately 7 percent in real terms.

In nominal terms, or current prices, recurrent expenditure grew from RO 217.7 in 2000 to RO 578.1 in 2009 or an annual average increase of 12 percent (figure 7.1). However, if these prices are corrected by the GDP deflator (to account for changes in prices) and translated in constant 2000 prices, the growth is more modest at about 7 percent per year even with some decreases between 2003 and 2006 and between 2007 and 2008 (figure 7.1).

[74] In 2009, civil ministries' expenditures amounted to 52 percent of total public expenditures. The balance was shared between defense and national security (23 percent), oil and gas production expenditures (17 percent), support to the private sector (7 percent) and interest on loans (1 percent). In the rest of the chapter, only civil ministries' expenditures are considered.

Figure 7.1

MOE Recurrent Expenditure, 2000 to 2009 *(RO million)*
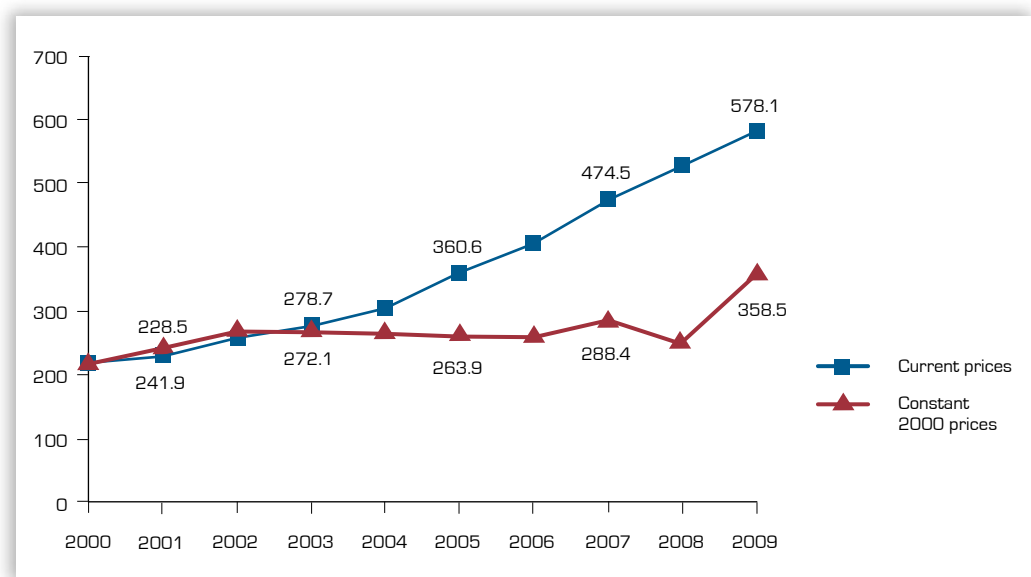
Source: MONE 2010.

The steady increase in the MOE's recurrent expenditure on education is not the result of enrollment expansion.

While the budget was increasing slightly in constant terms during the last decade, total enrollments were decreasing due to the demographic slowdown that has characterized this period (chapter 1). Therefore, the budget is not driven by enrollments but by inputs allocated to the sector. Over time, more resources have been allocated on a per student basis.

The MOE is the largest recipient of the country's civil recurrent budget.

With a share of 26 percent in 2009, the MOE is far ahead of the next largest recipients: Diwan and the Royal Court Affairs (13 percent) and the Ministry of Health (13 percent) (figure 7.2). If other expenditures on education and training are added (including the MOM, MOHE and SQU), the recurrent budget allocated to the entire education sector was 37 percent of the overall recurrent civil budget in 2009 (figure 7.2 and appendix table A.2).

Within the education sector, 70 percent of the budget goes to the MOE with the remainder for higher education and technical and vocational education.

The intrasectoral allocations for education indicate the degree of priority given to each level or subsector of education.[75] In 2009, 70 percent of the recurrent education budget went to MOE, 20 percent to higher education (made up of 15 percent to SQU and 5 percent to the MOHE) and 9 percent to the MOM, provider of technical and vocational education and training.

Figure 7.2

Recurrent Expenditures: Selected Government Agencies *(% of total expenditures)*
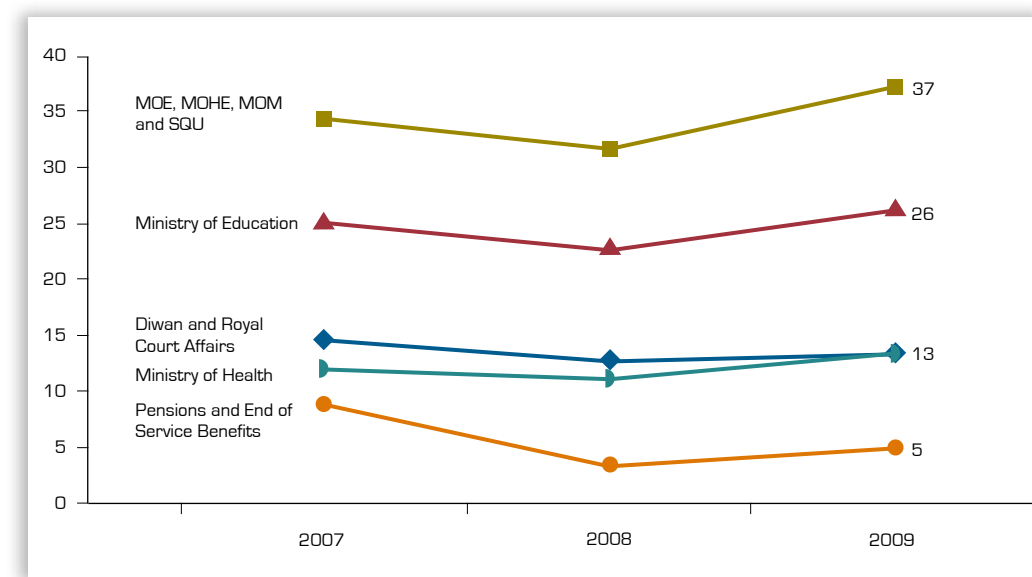
Source: MONE 2010.

In relation to the country's wealth, the education budget increased slightly in recent years.

It is common practice to assess the weight of the education budget in comparison to total national wealth as measured by GDP. In 2005 and 2007, total public expenditure on education represented 4.6 percent of GDP. This increased to 5.3 percent in 2009 (appendix table A.2).

Whether measured against the country's total wealth or against its total budgetary expenditures, public spending on Oman's entire education sector is coming close to what is broadly observed in comparator countries.

There is no absolute measure to gauge whether these expenditures are on the low or high side, unless they are put in an international perspective. If measured by their share of the gross national income (GNI), expenditures on Oman's entire education sector were at the higher end of the set of countries used as comparators. However, if measured as a share of total public spending, these expenditures are at the lower end of the comparator countries (table 7.2).

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[75] A fully comprehensive account of expenditures on education should include expenditures on training made by the Ministry of Health and other ministries and agencies. Hence, the figures used here slightly underestimate the total effort made for education and training.

[76] The significant difference between the ratio of expenditures/GDP (as estimated by the MONE) and the ratio of expenditures/GNI reported in table 7.2 comes from the difference in the definition of these two aggregates, mainly accounted for by the balance of receipts of primary income, namely compensation of employees and property income from abroad.

Table 7.2

Public Education Expenditure as a Percentage of GNI and Government Spending in Selected Countries, 2009 or Most Recent Year *(%)*

Public expenditure on education as % of GNI			Public expenditure on education as % of total government expenditure		
Tunisia	7.5	2007	Hong Kong, China	24.1	2009
OMAN	**5.6**	**2009**	United Arab Emirates	23.4	2009
Estonia	5.2	2007	Tunisia	22.4	2007
Thailand	4.9	2008	Iran, Islamic Rep.	20.9	2009
Iran, Islamic Rep.	4.7	2009	Thailand	20.9	2007
Malaysia	4.6	2007	Qatar	19.6	2005
Hong Kong, China	4.5	2009	Malaysia	18.2	2007
Cyprus	4.4	2007	Korea, Rep.	14.8	2007
Korea, Rep.	4.2	2007	Estonia	13.9	2007
Kuwait	3.5	2006	Kuwait	12.9	2006
Mauritius	3.2	2009	**OMAN**	**12.8**	**2009**
Singapore	3.0	2009	Singapore	11.6	2009
Lebanon	1.8	2009	Mauritius	11.4	2007
United Arab Emirates	0.9	2008	Cyprus	9.6	2007
			Lebanon	7.2	2009

Source: MONE 2010 for Oman and UIS for all other countries.

7.2   UNIT COSTS

Public expenditures per student for the new basic education system do not appear to exceed those for general education, even though they have significantly risen since the inception of the new system.

Based on MONE data, the per student expenditures incurred by the MOE for basic and general education together represented approximately RO 1,000 in 2008, up from about RO 720 in 2006.[77]   The unit costs estimated by the MOE are higher. According to MOE data, per student costs for the cycle one of basic education are in general lower than those for the cycle two, but there are some exceptions (2001, 2007 and 2008). On average, however, the difference in unit costs between basic education and general education grades 1–10 is not significant (table 7.3).

Table 7.3

Expenditure per Student by Level of Education, 2008

		RO	US$	% of GDP per capita
Basic education	Cycle one (grades 1-4)	1,357	3,528	17
	Cycle two (Grades 5-10)	1,188	3,089	15
General education	Grades 1-4	1,138	2,959	14
	Grades 5-10	1,227	3,190	15
	Grades 11-12	1,697	4,412	21

Source: MOE 2009a (unit costs) and MONE 2010 (GDP per capita).

The increase in per student cost can be attributed to the fact that total enrollments decreased at a time when the budget was increasing.

Per student costs as a percentage of GDP per capita ranged from 14 percent for general education grades 1–4 to 21 percent for grades 11–12 in 2008 (table 7.3). Table 7.4 shows that Oman's levels of per student spending are similar to the comparator countries and less than the average for OECD countries. While the introduction of the new education structure has not led to an excessive surge in recurrent expenditures, it is only when the reform has been embedded (particularly for post-basic education) that a full assessment will be possible. Comparisons of unit costs associated with either the economic level or the enrollment level suggest that the Sultanate is still in a transitional period linked to the completion of its bold reform to reorganize the education structure and that the cost structure will become gradually more differentiated (box 7.1).

[77] These figures are based on the budgetary data provided by the MONE. They are consistent with those estimated by the MOE. Disaggregation of unit costs (and of total costs) by education levels always carries some degree of arbitrariness, as several items are common to all levels (teachers teaching different grades, administrators in charge of more than one cycle, and so on).

Table 7.4

Expenditure per Student as a Percentage of GDP per Capita in Primary and Secondary Education, 2009 or Most Recent Year *(%)*

Primary Education			Secondary Education		
OECD Average	21	2007	OECD Average	25	2007
Estonia	20	2007	Estonia	24	2007
Saudi Arabia	18	2007	Korea, Rep.	22	2007
Korea, Rep.	17	2007	Iran, Islamic Rep.	21	2008
OMAN	**14-17**	**2008**	Saudi Arabia	18	2007
Hong Kong, China	14	2009	**OMAN**	**15-21**	**2008**
Iran, Islamic Rep.	14	2008	Hong Kong, China	17	2009
Jordan	13	2007	Jordan	16	2007
Kuwait	11	2008	Mauritius	15	2009
Mauritius	9	2009	Kuwait	15	2008
Philippines	9	2007	Philippines	9	2007
United Arab Emirates	5	2008	United Arab Emirates	7	2009

Source: Authors' calculations based on MOE 2009a and MONE 2010 for Oman, UIS for all other countries.

Note: For primary education in Oman, expenditure per student as a percentage of GDP per capita in 2008 ranged from 14 percent in general education grades 1-4 to 17 percent in the first cycle of basic education.
For secondary education it ranged from 15 percent in basic education cycle two to 21 percent in post-basic education (table 7.3).

Box 7.1

Economic Wealth and Enrollments: International Correlations

Per student costs as a percentage of GDP per capita and GDP per capita: On average, low per student costs in primary education as a percentage of GDP per capita tend to be concentrated in low income countries. Per student costs at the primary level, however, are only slightly correlated with a country's wealth level, and even more weakly correlated in the case of secondary education. Poor countries, such as the Republic of Congo, share low per student costs with rich countries, such as the United Arab Emirates. Likewise, high student costs are found in the poorest countries, such as Burkina Faso, as well as some of the most developed countries, such as Norway.

Per student costs as a percentage of GDP per capita and enrollments: There is little correlation between per student costs as a percentage of GDP per capita and enrollment rates at the primary and secondary levels. At the tertiary level, there is a clear negative correlation. Oman finds itself in the group of countries migrating toward a combination of increasing enrollment levels and lower unit costs.

Source: Authors' analysis based on UIS data.

The costs of grade repetition are estimated at approximately 3 percent of the MOE's recurrent budget.

While the per student costs give an indication of the amount of resources invested for each student, they do not reflect the entire costs of educating a child throughout the schooling system. The next step, therefore, is to estimate how much it costs to bring pupils to the graduation stage from grades 1–12. Such a cost must factor in repetitions. While the repetition rate is at a low level and has decreased for several years, its influence on the total cost is not marginal (chapter 2). Using the 2008 MOE data, the difference between the total cost with and without repetition amounts to approximately 3 percent of the MOE's total annual recurrent budget. In other words, repetition still costs the equivalent of approximately three years of teaching materials (table 7.5, appendix X). In terms of the weight of repetition cost in the recurrent budget, Oman is placed between the East Asian average and the Latin American average for secondary education — estimated in 2000 at 0.1 percent and 3.5 percent, respectively (World Bank 2006).

Table 7.5

Cumulative Graduate Costs, 2008

	Basic Education		Post-basic Education	Total
	Cycle One	Cycle Two		
Cost for total enrollments (RO million)	200.1	392.5	163.3	755.9
Cost without repeaters	200.1	378.3	159.3	737.6
Difference (US$ million)	0.0	14.3	4.1	18.3

Source: Authors' calculations, based on MOE 2008c and 2009a (appendix W).

7.3 COMPOSITION OF RECURRENT EXPENDITURES

The presentation of MOE's recurrent budget is not easily conducive to the development, monitoring and forecasting of resources: it does not analyze separately each education level nor does it link resources to sectoral objectives.

The recurrent MOE budget follows the national classification, which applies to all ministries. It is made up of approximately 60 line items (table 7.6). While such a presentation is useful to single out detailed expenditures, it does not lend itself to an analysis by functions, objectives and outcomes, and it does not distinguish education levels. It neither assesses the cost of achieving a particular outcome accurately (assessment, supervision, counseling and so on) nor does it allow monitoring of whether the resources allocated have been adequate to reach the outcome, thus limiting any measure of accountability.

In particular, and with the exception of personnel-related expenditures, the recurrent expenditures do not distinguish core functions directly associated with teaching and learning activities from those only tangential to these core functions "ancillary services").

Yet, such a distinction is fundamental, as the cost associated with teaching and learning is inherent to the MOE's mandate, under its immediate control and responsibility and closely linked to enrollments and pedagogy, while other costs can be outsourced to other agencies. Categorization of activities between these two groups is only a first step, but further disaggregation by broad functions would serve programming and budgeting purposes.

The share of the recurrent budget allocated to staff remuneration is very large in Oman and leaves little room for expenditures directly associated with the quality of education.

Regarding distribution, only minimal variations are observed between 2006 and 2009. Approximately 90 percent of the recurrent budget of the MOE was allocated to staff remuneration in 2009. This is quite a high proportion compared to other sectors in Oman; overall, the share of wages and salaries in the total recurrent civil budget of the country was 68 percent in 2009 (MONE 2010).

Staff Remuneration

The proportion of staff remuneration in the MOE's recurrent budget is high by international standards.

Staff salaries as a percentage of recurrent education expenditure vary widely across countries, but at 90 percent, Oman's level is at the high end internationally. In 2007, the OECD averages were 64 percent for teachers' compensation as a percentage of recurrent education expenditure in primary and secondary education, and all staff compensation as a percentage of recurrent education expenditure was 80 percent in primary education and 79 percent in secondary education (OECD 2010). In general, lower proportions are more often observed in richer countries, while the highest levels tend to be in less developed countries.

The salary bill is made of two elements: the number of staff on the payroll and their remuneration rate.

Hence, the first element to consider is the magnitude and composition of the workforce reporting to and paid by the MOE. There are two main categories of staff: teachers and administrators. The information available for these staff at the school level reveals significant changes within a short three-year period (table 7.7).

Source: Authors, based on MOE recurrent budget data.
Note: The highlighted boxes are core functions.

Table 7.7

Staff in Public Schools by Categories and Staff-related Indicators, 2006/07 to 2008/09

	2006/07	2007/08	2008/09	% change (2006/07 - 2008/09)
Administrators	4,521	5,709	6,400	42
Teachers	39,993	42,079	43,149	8
Students	536,602	553,236	540,332	1
Schools	1,053	1,052	1,047	-1
Classes	19,868	19,798	19,667	-1
Teachers-administrator ratio	8.8	7.4	6.7	-24
Student-teacher ratio	13.4	13.1	12.5	-7
Administrators-school ratio	4.3	5.4	6.1	42
Teacher-class ratio	2.0	2.1	2.2	10

Source: MOE 2007c, 2008c, 2009a.

The large salary bill is driven mostly by the unusually high and slowly rising number of teachers relative to students and the similarly high and rapidly growing number of administrators relative to teachers.

While the number of schools, classes and students has remained relatively stable, the number of teachers has slightly increased and the number of administrators has sharply increased.[78] As a result, the student-teacher ratio (STR) has dropped to an all-time low level, and Oman stands as one of the countries in the world with the lowest STRs, especially at the primary level where it is currently less than half the world average.[79] In addition, the gap between Oman's STR and the world average has increased between 2007 and 2008. Similarly, while each administrator was in charge of, on average, 4.3 classes in 2006/07, the number dropped to 3.1 two years later. The steep increase in the number of teachers can be explained as a consequence of the shift from the general to the basic education system; in particular, it is related to the reorganization of classes and to the introduction of elective subjects. However, the efficiency question remains: will the exceptionally high STRs currently observed ultimately be matched by an equally high level of quality? Similarly, are the large numbers of administrators a guarantee that the governance of the system is at its optimum? The findings from this report suggest that the response may be mixed at best.

The distribution of staff by region shows little variation, and it has become more evenly spread through the last three years (appendix X).

This reflects a steady trend toward the normalization of standards. However, taking into account the specific regional features, such as low population density, and measures to address them, such as double shifts, grade combinations, and consolidations, which justify some deviation from the norms, some remaining discrepancies exist. For instance, the teachers per administrator ratio varies from 5.8 in Dhofar to 7.2 in Al-Batinah (South), and the number of administrators per school ranges from 4.7 in Al-Wusta to 6.6 in Muscat and Al-Batinah (North).

There is a heavy concentration of MOE staff in the middle grades of the civil service structure (grades 4 to 6).

These are typically the grades that characterize teachers' positions on the ladder, and since teachers account for 88 percent of the MOE staff, it is not surprising to find that 75 percent of the MOE's staff are in these grades (appendix Y). By contrast, staff in the Ministry of Health and in other ministries is more evenly distributed. At the same time, hierarchies in those ministries are more pronounced than in the MOE where the proportion of staff at the letter grade level is low.

Staff remuneration is characterized by a system pegged to the number of years on the job and by generous allowances.

Remuneration is composed of three sets of expenditure categories regrouping as many as 16 different items. "Basic salaries" are only a part, making up 58 percent of the total in 2008 (table 7.8), closely followed by a number of allowances at 41 percent, and completed by a small group of miscellaneous items also akin to allowances.

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78   Simultaneously the Omanization of both the teaching staff and the administrative staff was progressing, as the number of expatriates declined by 25 and 10 percent, respectively, between 2006/07 and 2007/08.

79   Computed on a set of 90 countries for which data are available. In the case of secondary education, the ratio stands 6 points below the world average (20). See chapter 5 for a more in-depth analysis on teachers.

Table 7.8

Composition of the Staff Remuneration Bill, 2008

	RO	%
A. Salaries and wages	278,030,547	57.7
Basic salaries	276,345,716	57.4
Wages for temporary staff	1,684,831	0.3
B. Allowances	196,507,208	40.8
Allowance, housing	128,845,384	26.8
Allowance, electricity	12,110,790	2.5
Allowance, water	3,611,503	0.8
Allowance, phone	4,811,673	1.0
Allowance, professional	14,295,761	3.0
Allowance, abroad	73,912	0.0
Allowance, transport	32,294,027	6.7
Allowance, others	464,158	0.1
C. Others	6,954,075	1.4
Travel tickets	2,133,214	0.4
Bonuses	3,091,748	0.6
Compensation for leave	109,275	0.0
Overtime	386,307	0.1
Rent for employees housing	530,843	0.1
Private contract salaries	702,688	0.1
Total staff related expenditures	481,491,830	100

Source: MOE.

There is room for improvements in the distribution of civil servants' and teachers' allowances in Oman.

Many types of allowances target different kinds of personnel with different status, such as (1) teachers/administrators, (2) Omanis/expatriates, (3) civil servants/contracted staff, and (4) staff in country/staff working abroad. As mentioned previously, there is no direct way to identify the amount of allowances received by each of these categories. However, one-third of the allowances goes to housing and is paid mostly to Omani civil servants.[80] The next most important item is travel allowances; most expatriates are offered transportation by the MOE to their work. The third largest item is the work allowance, which is paid to all teachers and administrative staff in schools but its amount differs with position from RO 7 for a school coordinator and an administrative supervisor to RO 52 for a school headmaster.

Teachers' pay follows the general civil service guidelines.

Teacher salaries are flat (figure 7.3). A teacher at the top of their career earns about 1.6 times what a young colleague makes when he or she starts. Promotion to the next step is a function of seniority in the job, and there is no incentive linked to performance. Annual increases within each step are also automatic and set up as a fixed amount, slightly increasing with the steps, and there is no room for deviating from the general civil service promotion scale. Allowances account for as much as between 40 percent at step 6 and 48 percent at step 5 of the total remuneration, and housing allowances make up from 68 percent at step 7 to 79 percent of all allowances. Most of the allowances go to teachers. The question that arises is whether granting these allowances to teachers improves their performance.

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80   A small number of expatriate staff also receives this allowance.

Figure 7.3

Theoretical Teacher's Age Earning Profile *(RO)*

Source: Authors' estimates, based on MOE data.

Internationally comparable data on teacher salaries are scarce.
Absolute numbers are particularly difficult to compare, and only the relative amount in terms of a country's income level can be used for comparison purposes. Teachers' remunerations in Oman represent between 1.0 and 1.8 times the GNI per capita, which is slightly above what is observed in countries such as Bahrain (0.5), Estonia (0.7) or South Korea (1.5), but far from other countries with lower levels of wealth such as the Philippines (3.3).

Nonsalary Recurrent Costs

In contrast with Oman's expressed priority to enhance the educational environment, only a small share of the MOE's recurrent resources is left for nonsalary inputs directly linked to teaching and learning and directly impacting quality and equal opportunities.
Once expenditures for building maintenance and cleaning and charges for electricity and water are taken into account, the remaining nonsalary recurrent budget is allocated mainly to bus rental, which receives almost half of this budget (table 7.9).[81] The cost of bus rental cost takes a large share of available resources even though it does not constitute a core function of the ministry.[82]

Table 7.9

Nonsalary Recurrent Expenditures: Selected Items, 2008 *(%)*

	Schools	Administration	Total	Share of expenditures to schools
Learning material	12	0	11	100
Building maintenance and cleaning contracts	9	8	9	90
Official assignment travel	0	16	2	0
Training	3	2	3	90
Bus rental	55	9	49	98
Electricity and water consumption	9	8	9	90
Total	100	100	100	88

Source: MOE.

Note: This table shows the percentage of total nonsalary recurrent expenditures that go to each type of selected item. For example, 55 percent of nonsalary recurrent expenditure on schools goes to bus rental while 9 percent of nonsalary recurrent expenditure on administration goes to bus rental. This means that 98 percent of the expenditure on bus rental is from school expenditure. The first three columns do not add to the total because only selected items are shown.

Educational materials represent 11 percent of the nonsalary recurrent budget or the equivalent of approximately US$25 per student per year.
Considering its importance to implementing the renovated curricula using a learner-centered teaching methodology, the allocation for educational materials is low compared to other countries because ancillary expenditures, such as pupils' transportation, crowd out this strategically important item.

Although the budget as currently presented does not directly show a breakdown by final distribution, assumptions can be made about which items reach the schools and which ones are retained by central and regional administrations.
The results of these assumptions suggest that approximately 85 percent of all funds under the recurrent budget flow directly to the schools; the rest is absorbed by MOE central and regional administrations. The main items directly delivered to the schools at a proportion higher than 80 percent include learning materials (100 percent), building maintenance, cleaning and operations (90 percent) and salaries (85 percent).

Discretionary power of the school principals to use the resources allocated to schools is very limited.
Except for an allocation of petty cash, the bulk of the resources available at the school level comes from the revenues generated by canteens. Only 85 percent of these revenues are kept at the school level, the rest is reimbursed to the regional directorates of the MOE. Hence, without an allocation of their own, schools have few incentives to launch specific initiatives relevant to their environment and the community that they serve.

[81] Buses are rented and busing activities are subcontracted.

[82] The World Bank (2000) report indicated a share of 60 percent

Figure 7.4

Direct and Indirect Development Expenditure, 2006 to 2008 *(RO million)*

Total Development Budget

Direct Education Development Budget

Indirect Education Development Budget
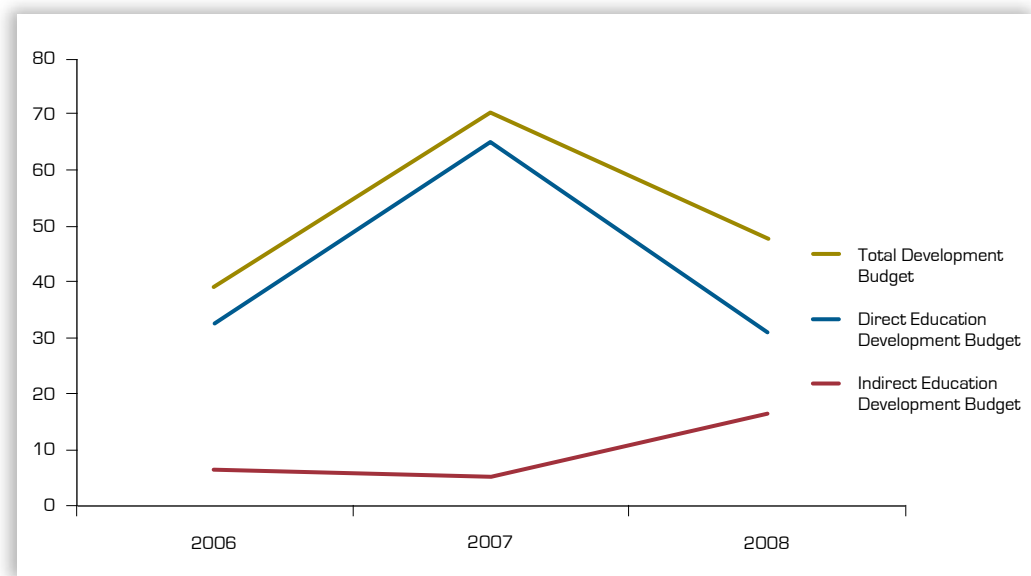
Source: MOE Finance DG.

Figure 7.5

Direct Development Expenditure

Other 3%

Equipment and labs 5%

New schools 28%

Addition to existing schools 57%

Restoration of existing schools 6%
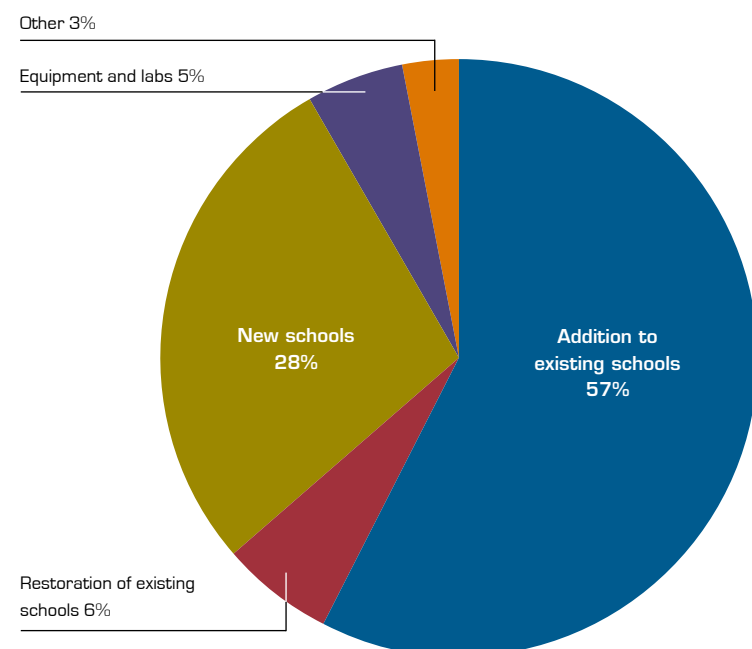
Source: MOE.

7.4 INVESTMENT EXPENDITURES

The relatively modest level of investment expenditures reflects a shift in priorities from building new facilities to investing more in improving education quality.

While the MOE's recurrent budget accounted for a quarter of the country's civil ministries' budget and its share is slowly growing, the MOE's share of the investment budget was only 3 percent in 2009 and on a downward trend. This relatively low allocation of investment expenditures to education is not unusual, especially for countries like Oman experiencing a gradual enrollment decrease and having completed a period of heavy school construction investments. Oman allocates about 8 to 9 percent of the total education budget to capital expenditures; this percentage is close to the average of OECD countries, such as the UK, Germany or France that range from less than 5 percent to 15 percent (OECD 2009b).

Data and definitions regarding investment costs vary by source, and gaps between different sources are large and difficult to reconcile.[83]

The investment expenditures recorded by the MOE are divided into two categories: direct development expenditures are essentially focused on schools, while indirect expenditures are allocated mostly to administrative facilities. The relative share of these two categories has varied over time (figure 7.4). The greater variability is on the direct side, even though one would have expected indirect expenditures to be more volatile. This is because indirect expenditures depend on discretionary decisions to undertake specific investments, while direct expenditures are linked to schools and enrollments.

The bulk of the indirect development expenditure is allocated to the construction of MOE's new site, which represented 72, 86 and 61 percent of this category in 2006, 2007 and 2008, respectively.

The remaining funds were used for various purposes, as the need arose: reconstruction following the Gonu Cyclone in 2007, construction and furnishing of teachers' accommodations in 2007, and the contract for the development of the MOE electronic portal in 2008. Despite their stability in monetary terms over the last three years, these are clearly exceptional expenditures.

Direct development expenditures include construction either as additions to existing schools or as new schools.

Together, new construction and additions to existing schools make up 85 percent of total direct expenditures (figure 7.5). Additions to existing schools absorb the majority of this expenditure category, reflecting the slowdown of enrollments and also the shift in priorities from increasing access to implementing basic education reform. Restoration of existing schools and purchase of laboratory equipment respond to the same trend.[84]

[83] The two sources are the MOE and the MONE. Two sets of data are issued by the MOE. The first one is published in statistical yearbooks and the other one is produced by the Directorate of Finance.

[84] Maintenance costs are split between the recurrent and the investment budget. Small, mainly preventive maintenance is under the former, and major repairs fall under the latter.

7.5   SOURCES OF FINANCING

Oman's absolute reliance on public funds to finance its top priority pretertiary education sector may put the sector in a vulnerable position if the fiscal space were to be reduced and/or sectoral priorities changed.[85]

Even though the state provides free education to all Omani children, it does not mean that Omani citizens do not pay for it. First, despite the fact that government revenues originate mostly from oil and gas revenues rather than from taxes, there is an opportunity cost attached to this revenue allocation to education, and this cost is spread over all citizens. Hence, budgetary funding of education amounts to a collective way of paying for the education of children enrolled in public schools. Furthermore, the competition for these funds from other sectors may increase, and in a pessimistic but not improbable scenario, government revenues may be under pressure, making the competition even more threatening at least in the medium term.

In addition to these public resources, private funds also contribute to education, whether delivered by public or private institutions.

Parents' contribution to public education is mainly through indirect costs and personal opportunity costs borne by students after compulsory school age. Contribution to privately provided education includes fees and direct costs. Finally, there are direct investments in private education institutions, mainly at the preschool level.

Most Omani households have their children enrolled in public schools that are free of charge, so they spend relatively little from their own pocket on education.

Data from the 2007/08 Income and Expenditures Survey draw the following general observations: (1) households allocate only 4.8 percent of their total budget to education, far behind housing (23.1 percent) and transport and communication (20.9 percent);[86] (2) Omani citizens spend significantly less on education than expatriates (4.8 percent compared to 6.3 percent) despite the fact that their income is on average twice as large; (3) for Omanis, the dispersion around the average is relatively low; while the location (rural/urban) has little impact, differences between regions are more pronounced (from 2.4 percent in Al-Wusta to 5 percent in Musandam); the level of education spending is also affected by the economic dependency ratio (from 2.9 to 5.4 percent); and (4) the share of education in Omani household expenditures increases with the education attainment of the household head but so do the share of housing and transport; these three items increase their weight, partially and smoothly substituting for food expenditures as the household head's education level increases (appendix Z).[87]

The potential of private education provision and of public-private partnerships has not been fully tapped in Oman, perhaps due more to regulations than to a lack of interest from both parents and providers.

Internationally, the pattern of private education has the following features: (1) at both the primary and secondary levels, the variation is very large with a share of private education ranging from almost zero to 96 percent; (2) private education is generally more common at the secondary education level than at the primary education level, but there are some exceptions such as Jordan, the UAE and the USA; and (3) most countries have increased the private education share over the last ten years.

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[85]   As mentioned in MOE (2006), "The Ministry of Education is totally dependent upon finance it receives from the government."

[86]   The data do not distinguish whether children are enrolled in a public or private institution.

[87]   For a more rigorous analysis, it would be necessary to single out education expenditures for households disaggregated by the number of children enrolled in school.

Against this general background, private education provision is still modest in Oman, especially at the secondary level.

Most Arab countries in the Gulf region have significantly higher rates of private enrollments than Oman. For example in 2008/09, while 5 percent of Oman's school enrollments were in private Arabic schools and a further 5 percent were in international schools, Bahrain's private school total was 30 percent (UIS data).

Private education is an alternative to public provision and usually fills a gap where state provision is either lacking or its quality is perceived as lower.

Private provision's role and magnitude are also a function of the regulatory environment. Ultimately, the degree to which private institutions contribute to the education sector depends essentially on a political choice. In countries such as China and Vietnam, enrollments in private secondary schools are on the rise (8.3 and 11.5 percent, respectively). The case of Oman, where the state provides all education at the pretertiary level, raises the following questions: (1) Would the situation be different if the regulations were relaxed? (2) Is the current situation financially sustainable? and (3) Do families have a real choice? In face of these questions, there seems to be room for private sector growth.

Enrollments in private Arabic schools in Oman have increased dramatically, almost doubling between 2002/03 and 2008/09.

This growth (from approximately 15,000 to 29,000) has occurred while STRs have remained at the same level, which is also the same low level as observed in public schools. According to a recent survey, the main criteria for parents' school choice is the quality of results, and this is precisely what lures them away from public schools and attracts them to private ones (Al Balushi et al. 2009).[88]

Even though private schools already benefit from some support, such as free land to build facilities or a discount of 50 percent ion some goods, they are not at a fully equal financial footing with public schools.

Hence, private sector growth has mostly been driven by a small segment of schools charging high fees, which only children of the economic and political elite can afford, leaving little choice for children of less well-off households. This situation is socially risky and economically suboptimal, as it limits choices, creates a two-class generation of students and restricts bright students of poor families from high quality institutions.

7.6   POLICY IMPLICATIONS

The high level of education expenditures at the pretertiary level essentially reflects the priority given to a vibrant education sector but also results partially from some inefficient practices. It is difficult to single out the respective role of each of these two factors. Maintaining the priority of the sector and removing the inefficiencies should allow the Government to continue to improve education quality in a sustainable way. Below are some suggestions for the way forward.[89]

Improving the effectiveness of planning and monitoring of the education system would provide the Directorate of Finance with broad directions and main parameters to prepare both the recurrent and investment budgets in a fully rational way. For a beneficial impact, prerequisites include a solid, functional Education Management Information System (EMIS) and the availability of a reliable sectoral data base. The latter would allow robust forecasts of enrollments, financial needs and expected resources. A dedicated unit could be created for that purpose.

Moving from the input-based budgetary approach currently used to an output-based approach would be a milestone toward making the budget more than a simple accounting exercise and transforming it to a financial control mechanism, management tool, and policy instrument. An output-based budget would be a transparent motivator, promoting performance and enabling the MOE to assess the costs of achieving specific results. The main characteristics of the shift would be to (1) define specific objectives and functions, (2) link resources needed to achieve the objectives and to carry out the functions and (3) relate resources to each cycle of the education ladder to the extent possible. Budget items need to be reclassified to adopt the approach (box 7.2), but institutional changes are also needed for the exercise to be successfully implemented and to yield all its benefits. Since the MOE needs to manage its finance under the budget categorization that applies to all departments, the recommended approach would have to be followed in parallel with this categorization. The MOE could become a precursor in that area by demonstrating the benefits of using this approach.

Linking the budget to a medium-term expenditure framework (MTEF) would give to the output-based budget its full significance. The MOE objectives go beyond the single fiscal year horizon of the budget and encompass at least a five-year period (box 7.3). Hence, linking the budget to the MTEF would increase the predictability of the resources needed to achieve the assigned objectives to the MOE. The MTEF should reflect the priorities of the five-year plan, and its structure should be similar to the plan to facilitate the monitoring of spending. Together with the output-based budget, the MTEF would make budget negotiations more transparent and more solidly backed by medium-term commitments on both sides.

Linking the performance of MOE's operational units to their resources would introduce a sense of accountability in the MOE. Precise objectives would define performance, and the budget would reflect accountability to allow for objectivity. Performance contracts with milestones and targets could be developed to formalize the linkages.

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88   Parents also quote both English and international exposures as additional reasons to enroll children in private schools.

89   Even though they are focused on higher education, the recommendations made in the Ernst and Young report (2006) are sound and a number of them are also relevant to pretertiary education. To avoid repetition, they are not mentioned again in this report, but they are fully consistent with its suggestions. Those related to greater autonomy of teaching institutions are particularly pertinent.

Box 7.2
Example of Budget Classification for Program Budgeting

Type of Classification	Level of Classification	Examples
Functional	Function or sub-function Main program	Agriculture, forestry, fishing and hunting Agriculture
Organizational	Ministry or independent agency Office or Bureau under a ministry	Ministry of Agriculture Bureau of Extension Services
Program/operational	Program Recurrent activity Investment project	Food Crops Extension Services Program management and advisory services Construction of stores
Input/object/accounting/economic	Category Item Sub-item	Goods and services Utilities Electricity

Source: Kim 2007.

Box 7.3
Medium-term Budgetary Frameworks: Two Extreme Cases

Medium-term budgetary frameworks (MTBF) or medium-term expenditure frameworks (MTEF) are found in diverse economic and sectoral environments. The spectrum of countries where these frameworks are being used spans from the high-income European Union (EU) countries to the low-income countries benefiting from the EFA Fast Track Initiative (FTI). Even though the ultimate objectives are similar (most of them falling in the "good governance" category: transparency, stability, predictability, credibility, realism), the role and features of the frameworks in these two extreme cases are indeed different.

MTBF in EU countries

The main reason for EU Member States (20 out of 25) to adopt a MTBF is linked to the rules regarding the Stability and Convergence Programs (SCP) by which these countries are supposed to keep their fiscal and budgetary balances within certain limits and especially to maintain a ceiling of expenditures. MTBFs help to overcome the "natural" tendency of decision makers to have short-term vision, namely that of annual budgets, and to force them to commit themselves to longer-term measures. Critically, MTBFs act as a reminder that commitments are made to be honored, and they help keep in mind the necessity to link the cost of measures with predictable revenues. Typically, because of the environment in which they are operating, MTBFs cover all sectors and allow intersectoral reallocations to be considered. Most MTBFs have a horizon of three (Sweden) or four years (Netherlands). Within these broad parameters, MTBFs vary from one EU country to another. It is standard to classify them as follows:

(1)   The fixed frameworks, which do not permit revisions and thus provide a powerful barrier against major deviation from commitments; and

(2)   The flexible frameworks, which allow for revisions of the objectives from year to year to adjust to changes.

In turn, each of these types of MTBFs can be either periodical (no new framework before the end of the period) or rolling (with the possibility of annual updates). Most EU MTBFs are of the flexible/rolling type, which gives more opportunity to revise the initial parameters but, as a result, defies the very purpose of the framework.

MTEF in FTI Countries

To access FTI funds that help reach the EFA goals, low-income countries are required to build a sectoral MTEF, which guides them to prepare annual budgets consistent with the measures needed to achieve the EFA goals. Even though they cover only one sector, education MTEFs do allow intrasectoral reallocations, and it is even one of their main functions. They consist of two parts, revenue and expenditure. The resulting gap is a guide for the assessment of the additional needs to which the FTI Fund contributes. The revenue part is drawn from macroeconomic projections. Their realism conditions the usefulness of the whole exercise. The other condition of their usefulness and credibility is their linkage with a global (macroeconomic) MTBF. The expenditure part is based on a specific forecast model, which takes into account the demographic situation and trend and the various technical and financial parameters of the whole sector. Here too, there are conditions for the MTEF to be a real policy instrument: first, just like the revenue forecasts, they need to be realistic and comprehensive (covering both capital and recurrent expenditures), and second, they have to be organized by programs/functions. Finally the MTEF has to be institutionalized, formally endorsed by political authorities, and annual budgets must be prepared in explicit reference to the MTEF. The above points suggest that, unless they fulfill a number of conditions, MTEFs may not play the role that is expected from them and may remain an academic exercise as a result.

The features — and quality — of the FTI MTEF are quite diverse. The MTEF used in Mali is a three-year framework; its expenditure part is divided into nine subsectors (from preschool to higher education) and seven programs. For each of the programs, expenditures are divided into salary expenditures, nonsalary recurrent expenditures and capital expenditures. The parameters of the scenario are carefully and explicitly defined: intakes based on demographic projections, transition rates, STRs, nonteaching staff needs, salary rates, staff training needs, pedagogic material and other services.

Source: European Commission 2007 and Ministère de l'Education, de l'Alphabétisation et des Langues Nationales et al. 2010.

A study could analyze how expenditures allocated to the MOE actually reach their intended destination and help give an in-depth and accurate vision of possible sources of ineffi-ciencies and possible bottlenecks. Such a study, referred to as a Public Expenditures Tracking Survey (PETS), would depict how budgetary resources flow from the Ministry of Finance to the MOE at both the central and the regional levels and ultimately to schools (box 7.4). A PETS would not only track down financial resources but also human and in-kind resources, and it would map out how all these resources trickle down to the end-line service providers and users.[90] The results of a PETS would help the MOE make budget allocation decisions and would provide the useful feedback for output-based budgeting.

Box 7.4
Sample Research Matrix for PETS

Objectives	Sub Questions	Variable of Interest	Data Source	Method of Data Collection	Data Collection Tool
To understand the mechanism of resource allocation in the education sector at the state and sub-state levels and identify major issues in budgetary allocation in selected regions	What are the procedures with regard to resource allocation?	What was budgeted? What was approved? What was released to the sector?	State budget MOE budget Region budget		Extraction forms/checklist
	What are the spending patterns at each level?	What are the methods of disburse-ment of funds at the two levels? What is the funding gap to sector needs?	School budget	Desk review	
To identify problems with resource allocation and transfers	What are the procedures with regard to resource transfers?	Actual funds received at each level?	Financial records	Extraction	Extraction forms/checklist
	What are the spending patterns at each level?	Efficiency in disbursement Budget discipline?	Finance and administration officials at the two levels	In-depth interview	In-depth Interview schedule
		Transparency and Accountability of funds at all levels? Challenges and constraints			

Source: World Bank 2010.

A review of the budget allocations consistent with national priorities and, in particular, with the overarching objectives of enhancing quality, increasing learning achievements and improving relevance would lead to optimum budget allocations.
A definition of education's core services would make it easier to protect budgets in case of more strin-gent financial constraints. The review would likely entail a revision of the current distribution of recurrent expenditures, which leaves a very small share for nonsalary items.

Given its overwhelming weight in the recurrent budget, the MOE staff remuneration system would benefit from a thorough review, and the mode of remuneration could also be revamped.
The review would focus on the number of staff, which is currently excessive by international standards — both for teaching and administrative staff. It would revisit the rationale for keeping STRs at a low level. A review would also scrutinize the remuneration system and explore how to introduce elements of performance and some dose of incentives to unleash energies, especially of teachers, as suggested by international experiences. Differentiating remuneration for difficult assignments, such as in remote and underserved areas, while reducing the automatic provision of some allowances can lower staff members' absenteeism and stimulate their professionalism, which will lead to improved performance. As it is not possible to change the rigid civil service guidelines that apply to the MOE staff and to teachers, flexibility needs to be sought in the area of allowances, which currently account for over 40 percent of total remuneration. Pegging some of these allowances to staff's performance would reward the high achievers and energize those on an upward path.

Additional resources should be allocated to core activities directly linked to improve-ments in education quality and relevance to be consistent with the MOE's overarching priorities.
Clear criteria should be defined and used to balance the allocation of nonsalary resources between core pedagogic uses and ancillary services. A distinction would have to be made between the imperative of efficient resource use for core education purposes and for other purposes. Tradeoffs between the two types of expenditures should be based on these criteria. Additional resources may be required for the satisfactory functioning of school libraries, which may have a clear positive impact on learning. Similarly, further funding may need to be allocated for other educational materials and for equal opportunity considerations.[91] In particular, the MOE should review the transportation scheme (buses) to ensure equal access.

Granting more financial autonomy to schools and making them accountable — within the country's financial regulations — would have the potential to unleash energies at the school level and to improve their transparency and efficiency.
Further staff assignment at regional offices rather than at the headquarters would enable the MOE's regional staff to make more significant decisions and to disburse resources more quickly. Being closer to the field of operations, Regional Directors are in a position to make more significant decisions regarding resource allocations. At the school level, providing a larger amount of resources at discretion of the principal would constitute a strong incentive for schools to take initiatives relevant to local circum-stances. To yield its full benefits, decentralization at the school level would need to be accompanied by greater accountability.

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[90] More than 15 such surveys have been undertaken around the world with the World Bank's assistance.

[91] A thorough review of the sector's equal opportunities dimension would imply a specific analysis of the Income and Expenditure Survey completed by the MONE. It is recommended that the MOE be granted access to that survey for this purpose.

It will be difficult to sustain a quality education sector by relying solely on public resources.

Currently, with the exception of preschool education, almost all education costs are borne by the state. Given the prospect of a long-term decline in oil revenues, budget constraints may grow. Simultaneously, competing demands will rise outside the sector, such as for infrastructure, and within the sector, such as for higher education. In addition, as the MOE may have to step in more forcefully in preschool provision, pressure on its own budget is likely to increase. Hence, complementary financing modes should be considered to diversify the sources of funds, while making an effort to rationalize expenditures. If users' financial contributions are envisaged at the post-basic level, those revenues should be targeted exclusively on noncore activities and associated carefully with appropriate forms of aid, so that no student is refused access due to their family income, background or citizenship.

The scope of private contribution to the education of young Omanis could be much greater and, therefore, could be encouraged further.

Private education could be tapped on a substantially larger scale to benefit education in the Sultanate. Opening up the education field to more private investment would alleviate some burden on the MOE, create healthy competition with public institutions and give more choice to parents. Private investment would need to be preceded by (1) revamping the regulatory framework to make it more conducive to investments, (2) strengthening the sector's quality control mechanisms and (3) introducing safeguards so equal access is fully preserved. A number of options for additional financial support exist to promote the expansion of quality private schools. Conventional mechanisms should be considered, including preferential tariffs on educational materials and on electricity/Internet connections and tax incentives. Other schemes could include the creation of a quality improvement fund accessible through competition and supported by both private school fees and matching amounts from the public budget. The support could also include staff secondment from public institutions to private schools. The principle behind these initiatives is to create an environment to enable both public and private entities to deliver the best educational service to Oman's students.

CHAPTER 8

GOVERNANCE AND MANAGEMENT
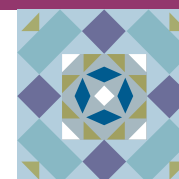
This chapter focuses on the Ministry of Education's (MOE) key concerns on the governance and effective management of education both at the national and regional levels. These issues include policy development, strategic planning and management with a specific focus on decentralization. The conclusions in this chapter are drawn from information obtained in meetings and discussions with key stakeholders, workshops and experiences in other countries.

Good governance and management in education covers many dimensions, including the government's capacity to (1) formulate sound education policies; (2) allocate and ensure the efficient use of resources to provide high-quality education services; (3) develop effective management processes that allow public oversight of education services delivery and student learning quality; (4) hold providers accountable; and (5) encourage citizen respect for schools and other education institutions. Effective governance in education requires enabling conditions, such as a legal framework to support education for all; equal access; prohibitions on harmful child labor practices; appropriate standards for education programs, products, schools, personnel and students; incentives where appropriate for good performance; and accountability (appendix AA).

The MOE has a record of considerable successes. The previous chapters presented evidence of the MOE's substantial achievements developing the education system. Over a four-decade period, the MOE managed to construct schools throughout the country, including in remote areas; train teachers and supervisors; prepare national-level curricula and textbooks; and develop a public examination system. As a result, Oman has progressed from a position of no public education to one that provides free education to well over a half million students in grades 1–12. Student-teacher ratios have been reduced by almost two-thirds. Instead of being taught by non-nationals, as was the case in the initial years, the vast majority of students in public schools receive instruction from native Omani teachers. Working with the Ministry of Health (MOH), the MOE has also introduced pilot nutrition programs and established health care centers in the majority of schools. The MOE has cast a critical eye over aspects of its work and brought about major changes in how education is organized, replacing a general education system with a more developed system that encourages students to remain in school until age 16, to complete ten years of basic education and to continue with two years of post-basic education. To further advance education in the country, a few key issues related to governance and management of the system need to be addressed.

8.1   POLICY DEVELOPMENT AND PLANNING

Education planning in Oman takes place within a legal framework and within the context of the government's five-year plans.

The education system has a legal framework based on royal decrees and goals and policies identified by the Government, which includes specifying MOE's roles and responsibilities in establishing educational norms and standards. The current strategic plan for education, the 8th in the series, covers the period 2011–15. The strategy for implementing the plan was published in the Vision 2020 document (MONE 2007). The five-year plan provides the basis for the MOE's annual budget, which is submitted to the Ministry of National Economy (MONE) for approval prior to being forwarded to the Ministry of Finance (MOF), which allocates financial resources to the MOE. Each year, the MONE examines the extent to which the MOE meets its objectives, using key performance indictors from the five-year plan. The Planning Department in MOE's Directorate of Planning manages the education planning process. The department makes enrollment projections for all regions and schools, taking into account figures prepared by the regional offices. The Planning Department works with the regions to plan new school construction or extend existing schools' buildings. Depending on projections, the Planning Department will usually commit to one or a combination of the following: (1) adding more space (classrooms, laboratories and playgrounds) to existing schools; (2) building new additions to school facilities on existing premises; or (3) building new schools in different locations.

Responsibility for policy analysis and development in education, training and human resource development rests with a number of different bodies.

In Oman, policy development does not have a permanent oversight entity. In addition to the MOE, other ministries play key roles. These are the Ministry of Higher Education (MOHE) through affiliated universities and other higher education institutions (HEI), the Ministry of Manpower (MOM) through its vocational training centers, and the colleges of technology, the MOH through the nursing schools, and the health sciences institute, and the Ministry of Social Development (MOSD) through its early childhood education programs. Policies affecting basic and post-basic education are typically developed through a process involving two main bodies: the MOE's main policy committee, and the Technical Office for Studies and Development (TOSD). These entities work in coordination with relevant Director Generals and other stakeholders assigned by the Minister of Education. There is frequent involvement of the Education Subcommittee of the Shura Council and the Education Subcommittee of the State Council in the development of education policies; however, the system lacks a central policy development or policy review mechanism.

The absence of a central mechanism makes coordinated policy development difficult, especially where problems to be addressed require cross-ministerial input.

Problem areas include the following:

- Lack of equal opportunities in funding for various levels and types of education and training;

- Inability to transfer academic credits among institutions under different ministries; and

- Inconsistency in quality assurance and accreditation procedures across education institutions under different ministries.

In policy development for basic and post-basic education, the MOE's main policy committee, PFET, and TOSD work in coordination with relevant Director Generals and other stakeholders assigned by the Minister of Education.

However, while some policy-making structures are in place, it does not appear that the MOE has a tested, clearly established and well understood process in which various units can develop coherent educational policies together. For instance, there does not appear to be clear procedures for when and how TOSD and PFET get involved in the process. At times, they are involved more on the "front end" of the process and work with proposing units to develop policy proposals; whereas at other times, the policy committee asks them to review proposals that have been already submitted. Furthermore, the MOE lacks a well-defined time frame, as well as an approved format and procedures for the submission of policy proposals.

There are several different models for coordinating policy development in the world.

Many countries locate education policy making within one ministry or have separate bodies to represent all stakeholders. This ensures representation of all interests in national-level policy making, in harmonization and/or arbitration among contending claims, and in resource allocation balance. In Kuwait, for example, one ministry has responsibility for both general and vocational education, while in Tunisia the responsibility is shared by two separate ministries. In Sri Lanka, a National Education Commission was established to make recommendations to the President on education policy in all its aspects, with a view to ensuring continuity in education policy and enabling the education system to respond to changing needs in society (appendix AB).

The Directorate General of Information Technology facilitates planning with data collection, including data provided by the MOE's electronic education portal or E-Portal.

The E-Portal is part of MOE's effort to create a link to the community and to help improve information services. The education database in the E-Portal contains information obtained from centralized and regional sources, including basic school-level data (details on students, personnel and school inventories) and MOE-wide data. It also includes the following elements:

- Information and news for local and national stakeholders;

- Details of multiple interaction channels, including the web, phone, and mobile devices, as well as learning assistant software to help students in self study;

- Reporting system to monitor student progress; and

- Resources for teachers and students to interact beyond the classroom.

The E-Portal also includes data on (1) public and private schools; (2) number of classes in schools; (3) number of students in basic and post-basic classes; (4) number of students in special education; (5) number of learners in literacy and adult education classes; (6) human, knowledge and technological resources; and (7) education finance. The annual MOE publication "Educational Indicators" prepared by the Statistics and Indicator Department is a product of this system (MOE 2009a). E-Portal is a worthwhile effort that will need ongoing support and capacity building to increase its usefulness to all stakeholders. Experience in other countries highlights the importance of sustained MOE commitment, the danger of an overly complex system and unnecessary information, and the potential failure to appreciate the information needs of users, especially policy makers (box 8.1).

The demands of the knowledge economy, which require changes in teaching, learning and assessment, present a series of challenges for the MOE.

The knowledge economy concept involves a paradigm shift in thinking about education's role. Instead of viewing education as a means to gain employment or do a specific job, education in the knowlege economy should be viewed as an enhancer of student employability — the ability to adapt acquired knowledge and skills to new working environments. Drucker (1966), who is credited with creating the background for the knowledge economy concept, used the comparison of manual workers and knowledge workers to clarify the term. The former use their hands to produce goods and services, and the latter use their brains to produce new ideas and information. Proponents of the knowledge economy argue the following points:

- Teachers will be expected to assume roles as facilitators, encouraging students to become more active and to assume more responsibility for their own learning.

- Teachers will be expected to change their pedagogical approaches with schools offering ready access to information and knowledge resources beyond the material in assigned textbooks.

- Students will be expected to acquire skills in framing issues and solving nonroutine problems, especially those related to the broader world outside of schools.

- Schools can help students prepare for the requirements of life in a globally competitive world, which differs greatly from the work world of the recent past.

- Schools can strengthen their links to the outside community.

Box 8.1
Ten Lessons in Design and Use of Management Information Systems

The following lessons are based on a literature review of E-Portal and education management information system (EMIS) systems use and on insights and experiences of professionals.

■ **Sustained commitment of leadership:** The sustainability of an EMIS system is directly tied to the commitment of education leadership. As initial "champions" become distracted or disenchanted, the odds of the EMIS effort stalling increase.

■ **Incentives and rewards:** EMIS users tend to contribute and use information when there are incentives and rewards for participation.

■ **Overestimating client demand for E-services:** Misconceptions include "The demand for good management information is always there," or "If given the information, decision-making will be rational."

■ **Overdesigned systems:** EMIS systems tend to be overdesigned. Systems with the highest use and downstream adaptation tend to be simple and modest in scope.

■ **Information overload:** In most cases, more information is collected than actually analyzed and applied toward decision making. EMIS reform could focus first on information that directly informs priority decisions.

■ **Use of existing databases:** Effective systems tend to be based on existing databases, taking advantage of current data collection routines. Maintaining familiarity while enhancing efficiency builds confidence and increases the likelihood of long-term success.

■ **Importance of existing organizational processes:** Most EMIS interventions — assessment, design, and implementation — focus on technical solutions created by technical teams and overlook the organizational processes and institutional incentives that drive information use.

■ **Stakeholders' consensus:** Large-scale EMIS efforts require stakeholder/user consensus. New information tends to create "losers" who may actively resist implementation. Broadening information use at all levels increases the likelihood of ownership.

■ **Impact on planning:** EMIS systems have their greatest impact on planning and policy support, the stage where policymakers have the greatest latitude to respond to new information.

Source: Chapman 1990.

The knowledge economy challenge will require a new set of approaches to be developed.

These include intensive pre- and in-service courses for teachers, supervisors, principals, and regional- and national-level staff, as well as support for curricular adaptations and new forms of assessment, including public examinations and school materials. As management plans for the future, it should understand that the knowledge economy concept is quite recent and that few education systems have developed comprehensive programs to address these new challenges. Oman can draw on other countries' experiences of attempting to adapt their education systems in response to the knowledge economy.

Oman does not have a comprehensive system or framework for comparing educational and training qualifications.

A qualifications framework is a set of principles and guidelines that provides a vision, a philosophical base and an organizational structure for a national qualifications system. Establishing a national qualifications framework (NQF) involves developing a set of principles and guidelines through which records of learners' achievement are registered. NQFs facilitate an easy transfer of credits across various school types and across levels of the education system. A recent conference on European experience with NQFs (Bologna Expert Conference 2010) noted that a single NQF, which emphasized learning outcomes, had made it easier to bring about change in curricula and programs. The conference also noted that to be successful, close cooperation was required among framework developers and the agencies and departments involved in qualification recognition. In Oman, the MOHE has established a qualification framework for higher education; it does not, however, include post-basic qualifications or technical and vocational qualifications. Experience in other countries (such as Australia, England, Ireland, New Zealand and Scotland) suggests that a well-structured NQF can incorporate almost all major education and training awards, certificates or qualifications into one national framework. Box 8.2 presents some details of the Irish National Framework of Qualifications system, and box 8.3 summarizes the findings of a recent ILO study that warns about excessive expectations regarding NQFs and highlights some of the pitfalls to avoid when setting up such frameworks.

A well-functioning Omani qualifications framework could include the following elements:

■ Integrate different levels and types of education, such as basic, post-basic, technical education and vocational training (TEVT) and higher education;

■ Facilitate national recognition of acquired skills and knowledge;

■ Organize qualifications into a single comprehensive system of levels, titles and standards;

■ Develop greater parity of esteem between academic and vocational qualifications;

■ Help harmonize and enhance quality standards across the system; and

■ Encourage lifelong learning.

Furthermore as students appreciate that they have opportunities to advance through various levels of education and training, there is an increased likelihood that they will improve their knowledge and skills and in the process improve their employment opportunities.

Box 8.2
Features of the Irish National Framework of Qualifications

(1) The National Framework of Qualifications (NFQ) was developed as a means to compare training and qualifications among educational institutions at all levels.

(2) The national authority does not give awards. It establishes the policies and criteria on which the framework of qualifications shall be based.

(3) Its primary targets are award councils at various levels of the system and providers of education and training generally.

(4) The framework consists of ten levels, ranging from basic certificates to doctoral level (as shown in the following diagram).

(5) NFQ aims to promote and facilitate access, transfer and progression through the education system's various levels.

(6) NFQ emphasizes what a person with an award can do rather than time spent on a program.

(7) NFQ promotes lifelong learning and learning relevant to learners and other stakeholders, including business and industry.

Source: National Qualifications Authority of Ireland 2009.

Box 8.3
Lessons on National Qualifications Framework (NQF): Experience of 16 Countries

There are two central messages to emphasize on NQF: there is no single right NQF model and NQFs do not provide quick fix or simple solutions to the complex problems facing countries in education, skills development and employment. Ill-founded expectations exist that qualifications frameworks can achieve the ambitious policy objectives in relatively limited time periods. Research found little evidence that NQFs have substantially improved communication between education and both training systems and labor markets.

Clearly, NQFs are not "magic bullets" as instruments for reform. Countries most successful in implementing NQFs are those which have treated the framework development as complementary to improving institutional capability rather than as a substitute for it or as a way of reshaping institutions. NQFs are more likely to be successful if training outcomes and inputs are seen as related to each other, and policy attention is focused on both.

In this study, the framework that emerges as the most successful, the Scottish Credit and Qualifications Framework, had relatively limited ambitions. It may be the most difficult to replicate because it was part of a very long-term incremental policy reform process and the educational institutions in Scotland are relatively strong.

The research suggests that serious consideration of policy priorities and sequencing of policies are important to NQF success.

Three key objectives of qualifications frameworks are differentiated and lead to three suggested types of frameworks:

(1) The first way of understanding NQFs is as an attempt to make the relationships between existing qualifications more explicit. The focus here is on qualifications systems rather than individual qualifications.

(2) A second way of understanding the introduction of an NQF is as an attempt to make the relationships between occupational entry regulations (such as those of the state or professional bodies, which define who can and cannot enter specific occupations and professions) and qualifications more explicit.

(3) A third way of understanding the introduction of NQFs is as an attempt to use independently specified outcomes or competency statements to drive a range of different educational reforms. Although all NQFs use the terms like "learning outcomes" or "competencies," here the development of learning outcomes is seen as the focus, and the mechanism through which all the goals of NQFs will be achieved.

Beside the practical problem of getting employers involved, researchers have also suggested that employers may not always be able to articulate their requirements and certainly are not always able to predict what skills and knowledge will be required in the future.

Source: Allais 2010.

8.2 SYSTEM MANAGEMENT

International experience suggests that decentralization of many aspects of education's decision making and management can yield benefits.

In the early 1970s, Oman adopted a centralized education system initially to ensure that common national standards were applied. At this point, the MOE believes that the system has sufficiently matured to allow decentralization of management functions to the regions. Some features of the current system in Oman have been decentralized. These include some public examination functions, teacher appointments and some in-service teacher training.

Decentralization can have both positive and negative consequences.

Positive aspects of decentralization include improving the relevance of education programs, greater local access to schools, increasing efficiency in allocation and utilization of resources, relieving the central government of some local political pressure, increasing political legitimacy, augmenting revenues for local governments, and enhancing local government capacity and credibility with local populations. Decentralization is not without risk. Perceived limitations include a possible loss of the intended message transmitted from central to regional administrative units. Other limitations include regional decision making, which is at variance with central government policies, and local political pressures, which can be hard to resist in aspects such as school construction and staff appointments.

School-based management (SBM) is a form of decentralization that makes the school the center of educational reform and quality improvement.

SBM relies on the redistribution of responsibilities as the primary vehicle for bringing about improvement. As in other countries, Oman is moving toward greater school autonomy and enhancing the school leadership role. In recent years efforts have been made to grant more autonomy to schools and to assign a greater leadership role to the principal. The degree of school autonomy in Oman, however, remains limited. A recent ministerial decree (No 21/ 2009) granted some autonomy to selected schools in the system. School principals are now expected, among other duties, to supervise teachers at least once a year, organize school efforts to improve teaching, and develop an action plan based on the whole-school evaluation report. Problems and issues are likely to vary across regions. Some problems seem common to all regions, for example, principals dealing with issues of teacher absenteeism either for course attendance, maternity leave or some personal reasons. With increased autonomy, principals and schools will be expected to accept increased accountability.

The current civil service progression system may not be in the best interests of promoting good quality teaching.

In theory, each teacher's performance is evaluated annually by a team of supervisors, which includes school principal input. The result of the evaluation determines the teacher's progression through the ranks of the 14-level civil service employee system, as teachers are civil servants. They are appointed at an entry level corresponding to level 6 (Level 1, the highest, corresponds to the position of supervisor). Teachers normally progress through the ranks at one level every four years, provided they get a "satisfactory" annual evaluation. In theory, teacher promotion is meant to link teachers' incentives and rewards to performance. In reality only 1 to 2 percent of teachers are denied automatic progression through the ranks.

The MOE has embarked on the development of a regional accountability framework

that will require each region and its schools to set goals, measure progress, undertake improvement projects and report results on an annual basis. The initiative is based on a set of outcomes, impacts and associated performance indicators, which allow regions and their schools to be compared on common key performance indicators. As part of the school performance evaluation project, grade 12

examination results are assessed and schools that are not considered to be performing well are sent letters by the MOE. Monitors from the Finance and Administration Directorate go to each region to audit the schools and the regional offices. The general administrative supervisor receives reports from each region twice per year.

Most MOE staff hold graduate-level qualifications in a variety of disciplines.

Staff with postgraduate degrees (PhDs and Masters) are more likely to be located in the minister's office. About two-thirds (65 percent) of the staff in the DG for Curricula and Development had bachelors-level qualifications; comparable figures were 61 percent for the DG for Human Resources, 75 percent for the DG for Educational Evaluation, 38 percent for the DG for Finance and Administration, and 55 percent for staff in the regional directorates. Most degrees were in education and humanities. About one in eight MOE staff possessed first degrees in business or management. Discussions during workshops conducted by this study highlighted the shortage of expertise in business and management-related disciplines.

As is frequently the case in other countries, many MOE senior personnel arrived in their current positions without having up-to-date policy planning and management skills.

The data in table 8.1 provide limited evidence to suggest that key leadership skills are unlikely to be developed in MOE training programs. The vast majority of these programs were, as expected, directed at teachers and schools. Comparatively few courses were offered on topics related to leadership, financial management and administration. Out of a total of 323 programs with 11,153 participants, as few as 54 programs with 572 participants targeted leadership and management issues; it is not clear how many of these courses would have been relevant to senior-level MOE managers. Discussions with senior MOE personnel indicated that many senior-level staff have not had opportunities through professional training courses to develop managerial skills.

MOE leaders have many responsibilities.

Leaders are expected to provide necessary education system oversight, to monitor overall program outputs and outcomes against national objectives, and to authorize appropriate actions at central, regional and district levels Other important leadership responsibilities include (1) providing direction to staff, (2) mobilizing and energizing personnel through effective targeted communication, (3) ensuring that directorates or departments are on track and providing ongoing follow up and monitoring, and (4) coordinating initiatives with the other ministries and establishing effective links between the education and political systems.

Table 8.1

Distribution of Training Programs at MOE, 2008

Discipline	Percentage	Discipline	Percentage
Education and Curricula	36	Training and HR Development	5
IT	8	Financial Management	4
English	7	Leadership	4
Public Relations	7	Legal Affairs	2
Administration	7	Planning and Engineering	2

Source: MOE 2008d.

The MOE and its regional and local operations are overstaffed by prevailing international standards.

In 2009 the public education system served the needs of approximately 540,000 students using the resources of approximately 43,000 teachers and 6,400 nonteaching staff (MOE 2009a) in schools, resulting in a student-teacher ratio of 12.5 and an overall student-staff ratio of 11, lower than counterpart ratios for most transition economies. Further, there was 4,441 staff in MOE central headquarters and regional directorates. MOE staff account for approximately 50 percent of all Omani civil service employment, and while this is typical for Gulf countries[92] with relatively new education systems, it is rather high compared to Middle Eastern countries with older education systems, such as Egypt and Syria, or Asian and African countries at the same stage of development. The root cause of this situation seems to be a conscious decision by the Government to address unemployment through employment in the civil service, even if this means overstaffing and inefficiency.

The Projects Directorate faces some problems in managing construction of new or expanded schools.

Over the last five years the MOE has constructed about 60 schools to serve over 40,000 students. The Projects Department, which manages and oversees construction and furnishing of new schools, finds it difficult to attract qualified and experienced engineers to supervise its various construction projects. The average monthly salary of RO 500 compares unfavorably to engineer pay in the private sector. Of the 11 engineers and architects currently employed, five are female and have limited ability to supervise construction in remote sites. Analysis of the school construction process was carried out in a workshop as part of this study, during which particular attention was focused on the decision to either (1) expand and/or refurbish an existing school or (2) build a new school. This usually involves a cost/benefit analysis of the two options before a decision is made. Workshop participants identified a number of constraining factors in making construction-related decisions, which include

- Availability of adequate land with access to services in some remote areas;

- Pressure from some parent groups about the location of schools in their districts;

- Lack of experience in the Directorate of Projects with construction contract types, which do not have clearly defined penalties for contractors for lack of compliance;

- Limited capacity in the Directorate of Projects to monitor and control the construction of new schools, often resulting in the award of expensive contracts to consulting firms to perform this basic service; and

- Lack of a well-documented construction projects database.

The Government has encouraged the establishment of private schools in Oman in an effort to increase access to education, as well as to improve the overall quality of education in the system.

In 2008/09, there were 200 registered private schools enrolling 28,999 students. This represented 16 percent of all schools but only 5 percent of all students (table 2.1).[93] More than 80 percent of private schools are concentrated in four regions: Muscat, Al-Batinah (North), Dhofar, and Al-Sharkiyah (North). The majority of private schools are small in size.

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92   In the UAE the comparable level is over 60 percent.
93   These calculations exclude the 33,108 students in the 33 international schools.

8.3   POLICY IMPLICATIONS

The MOE could consider adopting a structured framework for coordinated policy development.

A logical framework can help ensure that policies identified have been selected through a rigorous process and subjected to scrutiny using evidence-based criteria and indicators. This process involves many stakeholders and consideration of a large range of pertinent issues. The framework could include (1) policy selection from a number of policy options; (2) development of selected policy implementation plans; (3) implementation of selected policy; and (4) evaluation of policy implementation. Further details about a structured framework and about the activities required at each stage are presented in appendix AC.

The Government of Oman could consider establishing a National Council of Education (NCE).

Its mandate would encompass the education system as a whole and would be broader than that of the Council of Higher Education. It would address all of Oman's key relevant policy issues related to education, training and human resources development. The proposed council could have a secretariat in which the MOE's Technical Office for Studies and Development (TOSD) could play a key role in providing technical support and resources for policy development, feasibility studies and comparative analysis as needed.

An Omani Qualification Agency (OQA) could be established to manage an Omani Qualification Framework (OQF).

The agency would represent relevant government ministries, employers and key educational stakeholders. The terms of reference and related framework of the proposed OQF could be managed and controlled by the OQA. It would help provide a vital link among all sectors of the Omani education and training system. It would also facilitate lifelong learning through increasing the mobility of learners across institutions and levels in the system and making the process transparent for students and employers. It could help encourage cross-sectoral cooperation.

On balance, the current MOE policy to decentralize more functions to the regions seems to be on the right path.

In Oman, decentralization could lead to increased efficiency in resource allocation, more timely intervention when required and more sensitivity to regional conditions. As the move toward decentralization gathers pace, the MOE could require regular evaluations of regional initiatives and account audits to ensure that national laws, policies and procedures are being followed. It could also be sensitive to initiatives that have national potential. At this stage, MOE could consider decentralizing a number of sections and transferring more authority to regions in the areas of budgetary implementation, in-service training, teacher recruitment, appointment and transfer, and school design and construction. Other current MOE functions, such as the grade 12 national public examinations and overall program monitoring and evaluation, might remain national-level priorities. Similarly curriculum and textbooks, which impart a strong national unifying force in terms of skills and values, could continue to be administered at the national level.

Enhanced school autonomy and leadership responsibility will require capacity building.

At this stage of system development, the SBM concept is relatively new for principals, teachers, parents and community leaders. Autonomy, even limited autonomy, will not happen automatically; it has to be planned, developed over time and supported by the MOE. In-service training is required for principals and senior staff. It could cover a wide range of topics designed to provide knowledge and develop leadership skills likely to contribute to the development of a school environment strongly supportive of student learning. Without training, it is unlikely that SBM will become a functioning feature of the Omani education system. Box 8.4 outlines five priority areas for capacity building related to SBM.

Box 8.4
Capacity Building for School Leaders

Improving the quality of teaching: School leaders require training in how to adapt the teaching program to local needs, improve their skills in monitoring and evaluation teacher work, and promote teamwork and professional development of teachers both inside and outside of normal school hours. School leaders would be expected to work with teachers to help reduce (where warranted) the range of school tasks that currently occupy teachers outside of the classroom (chapters 4 and 5).

Human resource management: School leaders should acquire skills in managing and motivating teaching and nonteaching staff; be able to address problems related to teacher behavior, including nonattendance; encourage staff to become involved in extracurricular activities; and over time, become competent and involved in teacher recruitment and transfer decisions, as well as in teacher promotion (chapter 5).

Financial management: As SBM becomes more established, some of the budget currently assigned to the regions for in-service teacher training could be earmarked for school-specific capacity development based on needs determined by the principal in consultation with the staff and with the approval of the regional office. In a similar manner, funds could be set aside for ongoing school maintenance. The principal or another senior staff member would be required to receive training in basic aspects of financial management of school accounts.

Collaborating with other schools and subject associations: Principals and other senior staff need to develop skills and awareness of how to provide leadership to raise the overall general quality of educational experiences in their schools. School leaders could be required to take the lead role in promoting cooperative links with other schools in their localities. Cooperation could take the form of a shared agreed approach to in-service teacher education, sports or cultural events. They could also encourage and support teachers to establish and participate in teacher subject associations meetings (chapter 5) designed to improve curriculum knowledge or in pedagogical approaches specific to their subject areas or in general aspects of education.

Goal-setting, assessment and accountability: School leaders could have greater discretion in setting a strategic direction for their schools and in developing realistic school plans to address their particular situations. Plans, which could be a follow up to the whole-school evaluation (chapter 4) report, could be prepared, reviewed by regional officials and updated on a regular basis. They could cover curriculum, staff in-service training, use of space, facilities and equipment, policies regarding school closures, as well as administrative and organizational issues. Principals who could receive training in how to develop a school plan would be held accountable for the drafting of the school plan and for the quality of leadership efforts to implement the plan.

Source: Authors.

Use national assessment results to help identify teacher in-service training.
Chapter 4 included details of how a national assessment of educational achievement can be used to identify teachers' perceptions of their weaknesses in aspects of pedagogy or in specific content areas. In a similar manner, a national assessment can help identify the training needs of principals and senior school leaders. In Argentina and Uruguay, for example, following a national assessment, workshops were organized to address the specific issues of head teachers in addition to workshops for teachers and supervisors (Benveniste 2002). Box 8.5 outlines details of how questionnaires administered as part of national assessment can provide valuable input into identifying the training needs of principals. For a more extensive treatment of SBM, see appendix AD.

Box 8.5
Using a National Assessment to Identify the Training Needs of School Principals

Background questionnaires administered in a national assessment can help identify in-service needs of principals. The data can help prompt education authorities to organize courses to address one or more of the following (1) head teachers' skills in managing school resources to provide a safe, efficient, and effective learning environment; (2) leadership skills to sustain a school culture and instructional program that support student learning: (3) assist teachers develop their knowledge and skills; (4) analyze and address problems of discipline, school attendance and staff morale; (5) develop strategies to collaborate with families and communities in the work of the school (in particular, if the community holds negative perceptions of the school); and (6) understand, respond to, and influence the larger political, social, economic, legal and cultural context.

Source: Murphy et al. 2000.

Recruiting some staff with formal qualifications in management-related disciplines can strengthen the MOE's overall efficiency.
Core staff involved in disciplines such as accounting, auditing, procurement, and recruitment, could be supported to update their skills by participating in periodic courses and programs related to their specific disciplines.

The MOE could reflect on the current system of including teachers in the civil service scale where promotion tends to be linked to years of service.
In particular, it could consider whether or not virtual automatic promotion of teachers is in the best interests of promoting good quality teaching.

The MOE could provide short courses and programs for senior managers and leaders to participate in over a period of years in areas designed to develop their skills in aspects of leadership and management.
Training might include, but not be limited to, courses in strategic planning,[94] leadership, mission identification, business process management, and results-based monitoring and evaluation (Kusek and Rist 2004).

The MOE could consider the value of requiring candidates for senior-level staff positions to complete a specifically designed course of studies leading to a diploma in leadership and management.
The course could be jointly designed and delivered by the Public Administration Institute of Oman and the Sultan Qaboos University (SQU) for leaders and top managers from the MOE, as well as from other government ministries, especially those dealing with human resources development. It could be offered in a variety of flexible modalities, including in-class lectures, group projects and on-line delivery. Topics to be covered could include (1) leadership training; (2) methods of feasibility assessment; (3) strategic planning and strategy implementation; (4) business process management; (5) soft skills (such as competence in effective communication, motivation, change management and conflict resolution); (6) human resources management; (7) cost estimating, budgeting and financial management; and (8) communication and dissemination mechanisms and programs to ensure an effective and on-going flow of information. Box 8.6 provides an example from Finland.

[94] Methodologies might include approaches such as the Balanced Score Card, situational SWOT analysis (method of evaluating Strengths, Weaknesses, Opportunities, and Threats) and business process management (BPM). Appendix AE presents brief summaries of approaches towards strategic planning and business processing management.

Box 8.6
The Finnish Institute of Educational Leadership

The Finnish Institute of Educational Leadership (FIEL) was established to be at the forefront of developing research and university-based training in educational leadership for ten years. Today, the institute offers the whole range of university-level programs in educational leadership from preparation for principals to advanced leadership programs for senior education managers and school principals.

The Finnish Ministry of Education has designated the University of Jyväskylä as a university of excellence in adult education for a second three-year period, covering 2007–2009. The criteria for this nomination include the university's orientation in education research, high quality, a multidisciplinary approach to education management, and the development of adult education pedagogy.

The University of Jyväskylä and the Institute of Educational Leadership are jointly establishing a two-year program leading to a certified Master's Degree in Educational Leadership. The basic qualification requirement for application is a Bachelor's degree in education or in a related field. Finnish applicants who also have a relevant Master's degree in education qualify for application. The University of Jyväskylä and the Finnish Ministry of Education agreed to fund a new project, *Developing an International Master's Program and PhD Program in Educational Leadership*. This project resulted in launching the first Master's Degree Program in Educational Leadership in 2007 and the second program in 2008.

Source: Authors.

While the increase in emphasis on student performance data for policy making is to be welcomed, the MOE could interpret these results with some caution.
Care could be taken not to "blame the victim" and to make allowance for students and schools with relatively poor or educationally impoverished backgrounds or from regions without ready access to resources, such as well-trained teachers with longevity in their appointed schools (chapter 5).

MOE could consider taking steps to define norms and standards for the performance of key finance-related functions.
Steps might include (1) requiring specific items in the recurrent budget for capital investment be set aside for school maintenance; (2) improving accounting procedures and practices, particularly those related to the monitoring and external auditing of internal expenditures; (3) rules for cash management; (4) methods to ensure transparency of budget allocations and audits of expenditure; and (5) performing cost-benefit analyses of resources and programs.

MOE staff recruitment and development is an ongoing process, which requires planning, training, and monitoring and evaluation.
To have a systematic approach toward recruitment, deployment and development, the concerned directorate could consider the following actions:

- Developing job descriptions specifying the mix of skills and levels of competency required for each position;
- Establishing norms and standards for human resources deployment, linking deployment to operational requirements;

Box 8.7
Possible Lessons from Civil Service Reform Initiatives in Jordan

Key elements of the Jordanian reform initiative could be relevant to Oman:

- Right sizing: Adjust the size of MOE employment to more acceptable efficient levels;
- Business process analysis and re-engineering: Encourage managers to think "outside the box" to redesign and simplify some heavy bureaucratic processes;
- Measure and monitor all MOE program outcomes, including the degree of stakeholder satisfaction;
- Performance budgeting: Translate MOE's global budget into budgets for individual directorates and departments based on unit's stated subobjectives that identify and use performance indicators and establish an internal auditing framework to monitor the budget implementation and outcomes;
- Performance appraisal: assess each unit's performance and reward good performance.

Source: http://mirror.undp.org/magnet/Docs/psreform/jordan_ten_best.htm.

- Conducting skills' surveys among existing staffs; comparing skill levels with the job descriptions to help identify the skills gaps; developing and implementing training programs to address skill gaps and assigning responsibility for ensuring that skill shortages are addressed to specific units and managers;
- Analyzing workload and staffing to determine areas of staff shortages and surpluses; adjusting staffing levels through redeployment, recruitment, consulting with the Ministries of Finance and Civil Service or through a program of early retirement of some staff; and increasing the workload and management expectations as appropriate where there is overstaffing.

As the Government embarks on a program of civil service reforms, it should reflect on what has worked to improve the general management of education systems.
The lessons learned and best practices adopted in other countries in the region, especially those introduced in Jordan (box 8.7) in the last decade, can serve as a guide to structured and manageable reform in Oman.

The MOE could incur considerable savings by strengthening its staff working on school construction with technically qualified personnel.
It could also organize short intensive training courses in areas such as procurement of goods and services, contracts and project management. Other initiatives worthy of serious consideration include requiring service agreements for all office equipment to take effect beyond warrantee periods, earmarking maintenance budgets, developing and introducing computer-based asset management systems interfaced with the E-Portal, monitoring resource utilization, and formulating and implementing stocking policies.

The MOE can help improve the quality of school buildings and facilities in a cost efficient way through a preventive maintenance policy.

The relatively poor condition of equipment, furniture and buildings in some schools could be attributed in great part to carelessness and to the lack of a preventive maintenance culture. The MOE could help improve the situation by leading and supporting an awareness campaign to encourage school staff, parents and students to take appropriate care of buildings, furniture and school facilities. It could also develop standards in relation to buildings and facilities. The MOE could assign a percentage of the current budget directly to schools for routine school maintenance, thereby saving both time and funds necessitated by the involvement of staff who sometimes may have to make a number of trips to address a relatively minor problem, which could be tackled by competent locals. It could also develop an incentive scheme for schools to encourage efficient use of equipment and facilities. In the UK for instance, the majority of Local Education Authorities' grants for schools can be used as schools see fit (Funding Education 2010). Schools can also apply for additional grants to the Government, trust funds, charities and private groups. Grants can be used to purchase equipment, materials, expand school buildings and grounds and promote certain subjects.[95]

Strengthening the E-Portal requires, at the outset, a detailed analysis of the informational needs of users and potential users, the extent to which they use E-Portal information, and the perceived value and accuracy of this information.

This could be followed by an analysis of the skill levels of current staff and suppliers of information. This latter analysis could lead to the identification of training programs needed by relevant staff in all directorates, including regional directorates and schools. To increase usage of the E-Portal, the MOE cannot assume that information will be used simply "because it is there." The MOE could offer or support short courses for all staff in how to access the information and how to use it effectively. It could also require that routine operational reports (such as annual reports on in-service training and on school supervisors) are placed on the portal at predetermined regular intervals.

Establishing a Business Process Management (BPM) framework would be beneficial for the MOE to consider for improving the effectiveness and efficiency of its operations.

BPM is a management approach focused on aligning all aspects of an organization with the needs of its clients and stakeholders. It is a holistic management approach that promotes business effectiveness and efficiency while striving for innovation and flexibility. BPM attempts to improve processes continuously, and enables organizations to be more efficient, more effective and more capable of change than a functionally focused, traditional hierarchical management approach.

An example of process mapping in the MOE is provided in figure 8.1, which maps the process of school expansion and its various options.

It is critical to establish the capacity and know-how within the MOE for mounting an effective BPM program. This might involve the appointment of an experienced external consultant with relevant and successful experience in other countries. The consultant would be mandated to select and train a team of qualified Omanis in the principles of process improvement that includes the following phases:

- Initial mapping of the process under consideration;
- Analysis of the critical success factors of the process;
- Defining the key information elements that need to be collected to monitor the outcome of the process;

95 http://www.fundingeducation.co.uk/grants-for-schools.html

- Integrating the process information in a subset of the EMIS;
- Monitoring the outcome of each process against set objectives;
- Assessment of the performance gap and analyzing the root causes of these gaps;
- Optimizing the process to close the performance gap; and
- Updating the EMIS.

Figure 8.1

Business Process Map for the Construction and/or Refurbishing and Expansion of Existing Schools
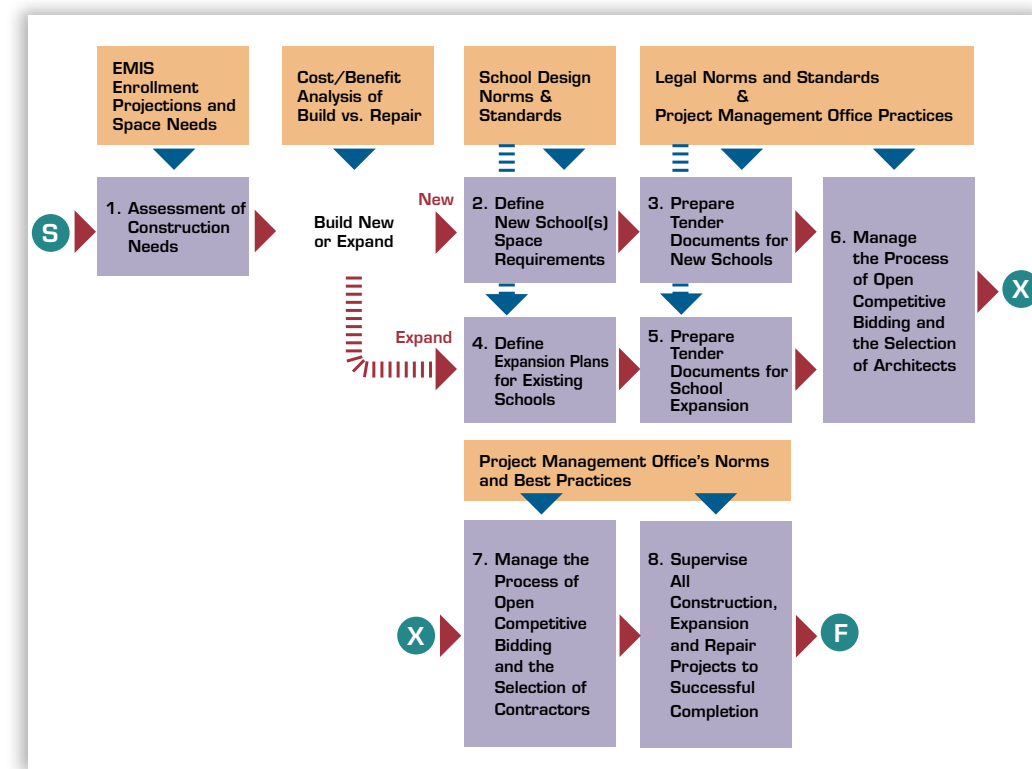
Source: Authors.

MOE may consider undertaking BPM initiatives that include defining norms and standards for the performance of key finance-related functions including the following:

- Defining norms and standards for relating specific items in the recurrent budget to capital investment, such as basing the flow of infrastructure projects on the ability to allocate sufficient funds for maintenance and developing full-fledged binding allocation formulas wherever possible;
- Improving accounting procedures and practices, particularly those related to internal expenditure monitoring and external auditing;
- Introducing rules for cash management, and providing incentives for compliance and disincentives for noncompliance;
- Ensuring that budget allocations and audits of expenditure are transparent;

- Performing cost-benefit analyses for all resources and all running programs, identifying programs where the delivery cost is too high relative to the benefits received at destination and taking corrective action;

- Improving the capacity to mobilize funds in the governorates' education offices: train staff to analyze information, perform cost analyses, develop project budgets and write better budget justifications; and

- Consider strategies to address overstaffing including (1) adopting a more realistic student-teacher ratio of 20 instead of the current 12.5 and improving teacher training to ensure the quality of teaching and learning, and (2) increasing the volume of work and improving nonteaching staff productivity by providing more effective training and professional development opportunities, without contravening the prevailing civil service regulations and codes.

Applying the BPM methodology to the concerned departments may involve the following reform initiatives:

- Conduct workload and staffing analyses, determine shortages and surpluses, adjust staffing levels through redeployment and recruitment, and conduct negotiations with the Ministry of Finance and Ministry of Civil Service to facilitate early retirement of some staff;

- Develop norms and standards for human resources deployment, linking deployment to operational requirements;

- Deal with overstaffing due to political considerations by retaining staff but increasing workload and management expectation;

- Develop job descriptions specifying the mix of skills and levels of competency required for each type of job; and

- Conduct skills' surveys among job holders, compare with the job descriptions to determine the skills gaps, and develop and carry out training of MOE staff, assigning them where possible to specific units and managers.

Similarly, the concerned departments may consider the adoption of BPM with the following measures:

- Institute a maintenance culture in the directorates and all schools;

- Integrate and upgrade the organizational homes for the provision and management of physical resources both at the head office and in the regional education offices;

- Train managers in asset management and ensure that they have sufficient and adequately trained staff;

- Develop policies/strategies for provision, deployment and use of physical resources based on operational requirements;

- Require service agreements for all office equipment to take effect beyond warrantee periods;

- Develop and introduce computer-based asset management systems, and earmark maintenance budgets;

- Monitor systematically both the use and utilization of resources, and hold staff accountable for improvement; and

- Formulate and implement stocking policy.

There may be scope to promote the expansion of private school provision.
The private education sector is relatively small in Oman compared to many other countries. Expanding private school provision could offer parents greater choices for their children's education and share the cost responsibilities with the state for those who can afford it. However, care should be taken to ensure that the expansion of private schools does not create a two-tier system, which disadvantages those who attend public schools. To that end, the following measures may be considered:

- Develop specific, clear and objective criteria (physical, financial and pedagogic) for the establishment of private providers, and make them publicly available;

- Include incentives for the establishment of private schools in remote/underserved areas;

- Ensure that the state's support of private institutions is conditional on the commitment to admit at least a certain percentage of students from low income families;

- Conduct regular assessments of the conditions of teaching, the quality of education, and the enforcement of the quota admission requirement.

CHAPTER 9

THE WAY FORWARD
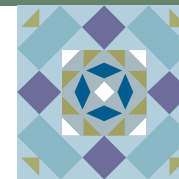
This is a strategic review of the education sector in Oman intended to assist in the next phase of education system development. Education is one of the primary functions of any state, as it plays a key role in shaping society, transmitting culture and values, and developing skills and capacities that influence the lives of its citizens. Given the significance of education for society, the economy and the people, education policies require regular review to enable the sector to adapt to changing context and demands. This study, coming after a period of rapid and sustained growth of education participation, is a policy-focused review of the sector. Based on the available information and data, international comparisons and discussions with stakeholders, the study aims to identify key challenges and propose future policy directions for Oman in its efforts to build on past success and further advance its education system. It should be noted that this study examines the outcomes of the general education system that has now been replaced by the basic education system, and the outcomes of this new system may be different.

Since the 1970s, Oman has achieved an impressive increase in education access.

Building on a long tradition of family and community education, the country moved rapidly to increase enrollment in a modern education system aligned with international norms. Enrollment grew from only 909 students in 1970 to over 600,000 in 2008/09. By 2008/09 the gross enrollment ratio (GER) in basic education (grades 1–10) exceeded 97 percent while the enrollment rate in post-basic education (grades 11–12) was 86 percent. In parallel, the capacity of the higher education sector has grown rapidly with the opening of Sultan Qaboos University, colleges of technology, colleges of applied sciences and other providers, as well as the growth of private universities. Currently more than half (55 percent) of those completing grade 12 progress to higher education, of whom 92 percent study in Oman (figure 2.4).

As a result of this rapid growth, education participation in Oman is now at a higher level than the average for middle-income countries but still lags well behind the leading high-income countries.

The gross enrollment ratio (GER) for upper secondary education was 90 percent for Omani nationals in 2008/09, significantly above the average for middle-income countries of 54 percent but lower than the average of 99 percent for high-income countries (appendix D). At tertiary education, Oman's GER of 35 percent was higher than many Middle East and North Africa (MENA) countries but well behind the 70 percent average of OECD countries.

As Oman seeks to develop a strong internationally competitive economy based on the skills of its people, it is important that the success in expanding education access is matched by the development of high standards in education.

At present, there are a series of challenges to learning quality. First, learning outcomes in Oman, while similar to those in neighboring countries, lag well behind some other high-income countries, such as the Republic of Korea and Singapore. Second, Oman has a very significant gender gap with girls outperforming boys. Third, there are some concerns about education's relevance to the needs of young people and employers.

There is evidence from a variety of sources that learning outcomes lag behind expectations and behind the leading countries internationally.

The UNESCO/UNICEF Monitoring Learning Achievement studies conducted between 1993 and 2004 found low student achievement, particularly in grade 6 mathematics. The 2006/07 and the 2008/09 national assessments of student achievement levels for grades 7 and 4, respectively, found that students did not generally reach the Ministry of Education's (MOE) expected standard. Oman participated in the Trends in International Mathematics and Science Study (TIMSS), which provided a rigorous international comparison of standards at grade 8. The majority of items in both tests were considered appropriate, according to the review panels established by the Tests and Examinations Administration Department (TEAD) for this study. Yet in mathematics, Oman was ranked 41st of the 49 countries participating with an average score well below the overall average. The Omani students did better than students in neighboring countries, including Kuwait, Qatar and Saudi Arabia. The scale of the performance gap between Oman and the leading countries in the study (Chinese Taipei, the Republic of Korea, Singapore and Hong Kong), however, is a cause for some concern. A top student in Oman (better than 90 percent of students) would have been placed no higher than the bottom 15 percent of students in Singapore. In science, the average performance of Oman's students placed them in the middle range of Arabic-speaking countries and below the high-scoring countries. Oman was ranked 36th out of the 48 participating countries. Their rank placed them above five and below four other Arabic-speaking countries.

School leavers are not always adequately prepared for tertiary education.

The majority of students entering higher education institutes are required to take a foundation year to bring them up to the required standard to complete their studies successfully, particularly in English language. At Sultan Qaboos University (SQU) for example, in 2007/08 there were 13 students in foundation year for every 10 in first year. In focus groups conducted for this study, academics expressed the view that new entrants from the general education system are not "college ready" and that their high scores from secondary schools do not truly indicate a high level of abilities and skills. Despite competitive selection at entry to higher education, graduates from secondary school appear to lack the basic skills and attitudes that are required to undertake university-level studies and to perform to standards at this level.

Girls as a group substantially outscore boys on measures of student achievement.

In the 2009 grade 12 examination, 92 percent of Omani girls achieved a pass compared with 83 percent of boys. On each of the national assessments, girls outperformed boys. In the TIMSS study, girls outperformed boys by an average of 54 points in mathematics and 60 points in science. Analysis of teacher ratings in grade 1 suggests that the gender difference is apparent from the earliest grades. The scale of these differences is very significant. Based on TIMSS data in mathematics, if Omani boys performed at the same level as girls it would lift the country from 41st place to 30th place of the 49 participating countries. The TIMSS study found that Oman's gender gap was greater than the gender gap in any of the participating countries, including the neighboring GCC countries. Analysis of teacher ratings in grade 1 suggests that because gender differences in ratings are apparent from the earliest grades, their origins may lie in childrearing practices before the child enters school. The extent of the gender gap has resulted in the imposition of quotas on girls' entry to universities. Analysis of the HEAC offers in December 2009 suggests that the number of girls offered places in engineering courses would have increased by 82 percent if there had been no quota imposed.

Although girls are performing better than boys in the education system, they are underrepresented in the workforce.

The majority (61 percent) of graduates in the population are female but only 25 percent of females over the age of 15 are active in the workforce, compared with 77 percent of males (2003 data). The Labor Force Survey (2008) found that one-fifth of job seekers were unwilling to accept work in the private sector. The reluctance to accept private sector employment was particularly strong among female job seekers.

At present, public sector employment dominates the Omani labor market, but national strategy envisages a shift to greater private sector employment, a transition that will place new demands on the education system.

In 2003, public administration and education together accounted for 38 percent of the labor force, while manufacturing employed only 9 percent. In the transition to a more competitive economy, it is expected that the proportion in private employment in the manufacturing and service sectors will increase. This transition is likely to have an impact on skills profiles required of employees. In the service sector, small and medium enterprises (SMEs) dominate, and more than 85 percent of registered Omani companies have less than 100 employees. In such small enterprises, there are fewer layers of management and a greater demand for employees to be able to carry out multiple functions, be flexible, solve problems and act on their own initiative.

There are indications that Oman's young people are not always well prepared for employment.

There is high unemployment of young Omanis. The Labor Force Survey indicates that approximately 40 percent of the economically active population is seeking employment, and unemployment is highest among the youngest age groups. At the same time, Oman is heavily reliant on expatriate workers. Expatriates make up 36 percent of the population but account for 75 percent of the labor force. Expatriate workers are concentrated in the private sector where they make up 85 percent of all workers. In a focus group discussion in November 2009, employers expressed a general dissatisfaction with the employability of Omani graduates. The employers tended to prefer hiring expatriates or Omanis educated overseas rather than Omanis educated domestically. The employers argued that graduates from Omani higher education institutions were not in general well prepared for work. In academic disciplines, they were perceived to be good at memorizing but weak on understanding, suggesting that courses at higher education should concentrate more on understanding. In the more generic skills, Oman's graduates exhibited poor skills in teamwork, public speaking, problem solving, and critical thinking, and they lacked a strong work ethic and willingness to take responsibility.

The expectations and self perception of young school leavers and graduates may be very different from those of employers.

While employers expressed concern about the employability of recent graduates, most young job seekers believe that the education system has prepared them adequately for work. Teacher assessments of students tend to be optimistic and may provide students with unrealistic opinions of their academic performance. Further, young graduates tend to expect desk jobs with relatively short working hours.

9.1   FACTORS CONTRIBUTING TO THE QUALITY AND RELEVANCE CHALLENGE

The issues of quality and relevance are closely interconnected. The data on learning outcomes suggest that despite high passing rates in school-based tests and national examinations, the level of student achievement appears low, as judged by the performance of grade 8 students in TIMSS. Students may be leaving school with unjustified levels of confidence in their own abilities and with insufficient skills to meet the demands and expectations of an increasingly competitive global labor market.

Children in Oman start school relatively late.
Children normally start school at age 6. They are required to be at least 5 years and 9 months old by the end of September to enter public schools; this is later than the norm in most high-income countries. In the absence of universal public preschool provision, only 39 percent of 4–5 year olds were enrolled in preschool in 2008/09 (chapter 2). International evidence suggests that early childhood education makes a significant contribution to school readiness and is particularly important for children coming from the least educated families.

Time on task is limited by the relatively short school year.
While the official target of a 180-day school year is similar in length to that of many countries, in reality the school year is attenuated by the grade 12 public examinations and by special events. These examinations are held twice a year, resulting in cancelled classes. This has an impact even on junior classes, as cycle one teachers are used as examination invigilators. The cumulative effect of absences and cancelled classes for public examinations is estimated, based on focus group discussions, to be a school year as short as 110 days for boys and 126 days for girls. In effect, the number of actual days that students spend in school can be as low as two-thirds of the expected or officially approved number of days.

For boys, there is relatively little use of out-of-school time for educational purposes.
The TIMSS survey revealed that boys tended to spend less time than girls on homework and reading for enjoyment. Girls also tended to spend less time watching television or videos or playing computer games.

Curricula and examinations allow success through memorization.
At grade 12, a tradition of past examinations dictates instruction, and teachers tend to "teach to the test." The two-semester examination system, which is currently being reviewed by the MOE, may also encourage this approach, as it enables students to study for only a portion of the curriculum for each examination. The gap between school examination results and TIMSS performance (which emphasizes problem solving) illustrates the extent of this phenomenon. The relatively high subject load in grade 12, in which students take eight core subjects along with three elective subjects and a project, also encourages superficial engagement with each subject. The MOE has begun to address these issues; changes have been made to the examinations with the aim that at least 20 percent of questions require higher-order thinking. The post-basic education cycle is being evaluated, and the number of subjects is under review.

Teacher preparation is not adequately focused on pedagogical skills development.
To teach for understanding, teachers need a repertoire of pedagogical skills, which can be developed and refined with practice. Current systems of initial teacher education include limited teaching practice and a relatively high proportion of theoretical content. Student teachers expressed concern that they were not well prepared for classroom reality.

Teachers seem somewhat complacent about current academic standards.
Although Oman's performance on TIMSS was relatively poor, the TIMSS data indicates that the majority of teachers felt that their grade 8 students were very well prepared for the science test. Teacher-awarded grades reflect this optimistic view of standards: in science, 32 percent of students were awarded an A or B grade by their teacher.

9.2   THE WAY FORWARD

Focusing on Quality of Educational Outcomes

Improving the quality of educational outcomes is perhaps the single greatest challenge facing the education sector.
Better educational outcomes in Oman will enhance its competitiveness and assist in attaining its economic goals. Improvements in educational outcomes for all citizens will increase the opportunities available to them, particularly for those with lower household incomes or from homes with less education. While improving quality is a complex, multifaceted task requiring a sustained effort, there are a series of measures that are recommended as priorities.

The MOE could seek to increase the time that students spend engaged in meaningful learning tasks to be in line with the international norm.
The OECD countries participating in the Programme for International Student Assessment (PISA) average over 900 contact hours per year, which could be achieved by 180 school days of five contact hours each. A series of measures could increase time on task. The school year could be extended to reach the official target of 180 school days. Erosion of time from examinations could be reduced by ending class cancellation during examinations, by not allowing grade 12 students to be absent for extended periods in advance of the public examinations, and by reverting to one examination period per year. Loss of instructional time to festivals, sports events and other functions could be reduced by strict enforcement of a policy of a minimum number of teaching days, leaving schools free to extend the term at will to incorporate other events.

There is a need to develop a culture of high standards of student learning.
This involves a coordinated values change within the system, driven by realistic monitoring and reporting of standards. Key actions include setting clear and realistic learning targets for each grade, encouraging teachers to monitor learning regularly, and aligning curricula and examinations with the aim of improving quality. Public examinations could be reformed to increasingly assess higher-order skills, and to become less predictable. A focus on standards may be encouraged by regular and realistic feedback to parents, showing how children are doing relative to national and regional norms. Examination results could be analyzed and used to identify and address learning difficulties.

There is a need to examine and address the underachievement of boys.
Boys' underachievement represents one of the major threats to education quality in Oman and in the long term may undermine national competitiveness and productivity. This is a complex and multidimensional problem, which extends beyond the education system. A good deal is already known about the gender gap. As early as grade 1, teachers rate girls higher than boys, which suggests that part of the gap arises from preparation before entering school. TIMSS data suggests that girls at grade 8 spend more of their out-of-school time on educationally supportive activities, such as reading for enjoyment

and doing homework. Within schools, grade 12 girls receive over 10 percent more days of schooling than grade 12 boys, due to the nonattendance of boys immediately prior to public examinations. Yet the TIMSS measures of confidence suggest that boys are as confident as girls about their ability in mathematics. Taken together, these suggest that parents and schools have lower academic expectations for boys and contribute to giving boys an unjustified level of confidence in their academic progress. Addressing these issues will be a slow process and will involve increasing parent awareness of the gender gap, setting higher expectations for boys, and providing them with realistic and valid assessments of their performance.

Efforts could be made to increase the involvement of parents and the wider community in education.
Parental involvement in schools is likely to increase their monitoring of and support for student homework and to increase student perception of the relevance and importance of their studies. At a national level, efforts could be made to impress on parents the importance of their roles in enhancing their children's learning (promoting reading, monitoring homework, organizing extracurricular activities, reducing student absenteeism). At the school level, each institution could seek to encourage meaningful parent involvement in school life through parent and teachers committees.

Expanding Access in Specific Areas

Consideration could be given to the expansion of early childhood education (ECE) provision.
Omani children start school relatively late, and international research points to the importance of ECE in laying a good foundation. There is strong demand for preschool education, as demonstrated by the growth of private preschools. This private provision is regressive and benefits mainly the better-off and best-educated families. Expansion of publically financed preschool education is one of the most promising ways to enhance educational outcomes, particularly for the poorest and least educated sections of society. Preschool provision could be expanded rapidly by either (1) attaching preschool classes to existing schools, or (2) using a voucher scheme to finance participation in private preschool education at agreed rates, although this mechanism is currently subject to debate in the professional literature. Whichever route is followed, the provision could initially be targeted in areas of poor educational performance. With the involvement of all relevant ministries, the Government could develop a comprehensive and implementable ECE strategy that links to an overall education vision.

In collaboration with relevant ministries, the MOE could seek to ensure adequate coverage of special needs education, particularly in rural areas.
A coherent national strategy for special needs education developed by the MOE in cooperation with the Ministry of Health and the Ministry of Social Development could be considered. This would include establishing mechanisms for identifying and evaluating children with special needs; collecting reliable data to determine the need; and appropriately training teachers in public schools who have responsibility for integrating students with special needs.

Adult literacy courses could be examined with a view to improving their relevance and coverage.
Conducting an evaluation of the literacy program curricula and of the needs of potential adult learners will be the first steps toward improving literacy education provision. In particular given low rates of participation for males, examining program relevance will be important. Identifying steps to improve program quality and availability should follow. This includes developing a policy to attract and retain suitably qualified teachers for literacy courses.

Developing an Appropriate Teaching Force with Strong Pedagogical Skills

To ensure teaching quality in school, there is a need to develop an adequate supply of teachers.
In the short term, there is an imbalance of teacher supply with shortages in some specializations but an oversupply in many others. Oman's teacher education institutions operate within an overall cap on numbers but more could be done to guide the numbers in each specialty. Publication of projected teacher requirements, if approximate, could send a signal to parents and those wishing to enter the profession. This could result in greater demand for the subject areas where there is likely to be more employment and may have some impact on the choices of Omanis who study abroad. Looking forward, teacher supply could be adjusted to the long-term needs of the Sultanate. This will mean scaling the initial teacher education capacity to the expected long-term demand for teachers and ensuring that there is an adequate supply (slightly more than the projected requirements) in each area. In particular, the closure of many teacher preparation courses for basic education cycle one is a cause for concern, as it may lead to renewed reliance on expatriate teachers in this vital area.

Deployment of teachers will need to be addressed more vigorously to reduce reliance on expatriate teachers.
Three actions are suggested. First, a more substantial additional allowance could be paid to teachers in carefully targeted remote schools. Second, the duration of stay in school before requesting a transfer (currently one year) could be extended to increase supply and improve continuity in remote schools. Third, greater preference could be given to candidates from remote areas at point of entry to teacher education courses and in recruitment. It may be desirable to reserve a certain number of special places in teacher training for applicants from remote areas, linked with a bonding system requiring them to return to work in those areas for a period after graduation.

The quality and consistency of teacher education could be enhanced through a system of regulation.
This could be used to ensure that (1) teacher preparation is well matched to the curriculum they are expected to teach and (2) pedagogical skills development is given an appropriate priority within the teacher education program. Such a system of teacher recognition could help to ensure a closer alignment between the teacher education programs and the school curriculum, reducing the risk of out-of-field teaching. Further efforts may be needed to enhance the quality of pedagogical preparation of teachers. At present the practical component of teacher education courses is relatively small, is late in the program and carries relatively little weight in the final mark. Measures could be taken to ensure that practical teaching skills are given greater weight and better integrated into initial teacher education. As many of the academic staff engaged in teacher education have limited school teaching experience, it may be beneficial to develop a system of temporary secondment of experienced teachers to teacher education institutions.

Teachers' work could be refocused on teaching quality and student learning.
At present, teacher teaching time is relatively low, yet teachers complain of an overload of paperwork and reporting. Reporting and evaluation systems could be simplified, and teacher contact time increased to rebalance teachers' work in favor of teaching. Supervision, monitoring and appraisal systems could be similarly rebalanced to prioritize teacher performance in the classroom over the paperwork. Within the classroom, teachers' work could prioritize the teaching of curricular topics, using after-class time for extracurricular activities. Teacher specialization in the early grades, which tends to impede teachers' ability to get to know their students and address their individual needs, could be avoided wherever possible.

The provision of in-service continuing professional development could be used to enhance the focus on teaching and learning.

Priority could be given to in-service courses related to teaching and learning, particularly to those involving practical classroom skills and delivered by experienced teachers. The cascade model of delivery is unlikely the optimal method for changing teachers' classroom practices. As teacher-peer activities are a promising way to enhance classroom practices, activities that bring teachers together to develop their teaching skills could receive support. Consideration could also be given to forming regional teacher subject associations where interested teachers of the same subjects have opportunities to share experiences and discuss practices.

Improving Education Relevance

The linkages among the education system, higher education and employers could be strengthened to improve education relevance.

This could begin with sharing information on employer and university requirements and on the expectations of the basic and post-basic education system. The National Career Guidance Center (NCGC) is well placed to play a key role in this task. In the longer term, curricula and standards may need to be revised to improve labor market relevance. Employers are likely to require a mix of academic and practical skills. The education system could seek to reduce the separation between the academic and vocational streams, so that more students emerge with good quality academic and technical skills. This could be achieved by introducing some technical or vocational subjects into post-basic education, thus allowing individual students to study a blend of academic and vocational content. In addition, it may be possible to encourage some schools to build specific specialist areas, allowing them to become centers of excellence in these subjects (box 6.4). Perhaps more importantly, employers are likely to value the metacognitive skills (beyond simply knowing) of the young people they employ. These skills include the ability to learn new skills quickly, attitude to work, ability to solve problems, and working well with a team. As curricula are revised, content could incorporate the acquisition of these key skills, along with academic subject matter. Incorporation of work experience into school programs could be considered, as part of the adjustment of school curricula to life skills.

The key to education relevance remains quality, particularly in the higher-order skills of thinking, analysis and problem solving.

Improving education quality will enhance the employability of school leavers. Standards of English are important in the private sector and, in particular, in the export-driven sectors. Expertise in mathematics and science is also highly valued by employers and is a prerequisite for many of the technology-related jobs in the industrial sector. Improving post-basic education quality is likely to require a reduction in the number of subjects studied and a greater focus on understanding of concepts within those subjects. In collaboration, the MOE and Ministry of Higher Education (MOHE) could analyze the main weaknesses of grade 12 graduates in terms of readiness for higher education to address these weaknesses, so that a "foundation year" is no longer necessary.

It may be necessary to review the selection system for entry to higher education.

The current system seems to provide perverse incentives, encouraging students to take subjects of little interest in order to gain the points required to get a place in university to study their subject of interest. This may be addressed by ensuring consistent standards across subjects or by adjusting the selection mechanism to ensure that relevant subjects for particular courses of study get priority weighting in calculating the selection points.

As the education system seeks to become more responsive to the needs of the learners and the labor market, it will be necessary to improve the flexibility within the system.

Mechanisms that enable learners to delay specialization into specific tracks, to change track after specialization and to return to learning after work experience all help to build a flexible education system, which promotes lifelong learning and allows individuals to adapt their education to their needs. As part of the process of developing such a system, consideration could be given to the development of a national qualifications framework.

9.3 MANAGEMENT AND FINANCIAL IMPLICATIONS

Strengthening the Sector's Vision and Planning

Planning to ensure alignment of education outcomes with national needs will require enhanced interministerial collaboration.

As education is a key national priority, the major focus of public expenditure and an important determinant of Oman's economic future, its scope stretches beyond the MOE alone. The national strategy for education involves the Ministries of Education, Higher Education, Manpower, Social Development and, of course, Finance. In building a coherent integrated strategy for education, close cooperation among the relevant ministries will be needed. A high-level body with representation from these ministries and a variety of other stakeholders, including the private sector, could help to guide the sector. The proposed National Council for Education could be developed to fulfill this role. Close interministerial and interagency collaboration will be needed in areas such as aligning teacher supply with requirements and revising curricula for the changing needs of both society and the labor market.

The collection and usage of data to guide system planning could be improved.

Limitations of the data available in certain areas of the education system could be addressed to support decision making. The policy relevance of financial analysis could be enhanced by reclassification of budgetary data in line with objectives. Key education indicators could be produced and tracked if accurate population data for non-Omani children were available. Relevance and labor market demand could be better monitored if detailed data tracking school leavers and graduates were available. Oman has already invested heavily in the ICT infrastructure in the education sector, including the E-Portal and the associated databases. There is now an opportunity to enhance the data emerging from this source and to use it in shaping the sector.

A comprehensive national qualifications framework (NQF) could be developed to allow comparisons of educational and training qualifications and to facilitate movement between courses and paths.

The MOHE currently has a qualifications framework for higher education, however, it does not include post-basic education or technical and vocational qualifications. By expanding this framework to include all qualifications, a comprehensive NQF for Oman could facilitate transfers of credits across the different types and levels of education.

There is scope for the use of systematic evaluations to guide policy making.
Major initiatives, including the use of whole-school evaluation, current provision of in-service teacher training, and provision of guidance counseling could be evaluated systematically and rigorously with a view to guiding their future development. In developing a strong culture of evaluation in education, a National Education Research and Evaluation Center could be established to train and develop a strong corps of expertise in educational research, program and product evaluation, test and questionnaire development, and sampling and statistical analysis to (1) conduct regular national assessments of student achievement levels; (2) coordinate involvement in international and regional assessments and studies; (3) carry out objective evaluations of programs and activities; and (4) provide technical support for standard setting for student learning.

Enhancing the Sector's Management Capacity

There is a need to develop the leadership and management skills of managers in the education sector at a range of levels.
At present, many in key leadership roles have been assigned to those positions without meaningful training and preparation. Personnel appointed to leadership roles could receive systematic training in education leadership at central, local and school levels. This could be a partnership with universities and could take the form of a postgraduate course, such as a postgraduate diploma program in education leadership and management. In developing leadership capacity, it will be necessary to define clear roles and responsibilities for MOE staff to reduce duplication of effort and enhance accountability and transparency of performance.

There is scope for further moves towards decentralization and school-based management.
School-based management could be extended to all schools, including schools teaching cycle one and two. The decentralization of responsibility to governorates and regions could be deepened and extended. These changes could be phased in gradually and in parallel with appropriate capacity building and accountability measures.

Performance Management

The key to any education system is personnel performance, and some attention could be given to structures that encourage and reward performance of teachers and administrators.
The existing performance management system allows teachers to make progress up the salary scale if they receive satisfactory ratings. Only a tiny percentage of education personnel, however, are denied salary progression (typically 1–2 percent), so the system has little impact as an incentive for excellence.

Consideration could be given to the development of a career structure where promotion is linked to performance.
For teachers, this could be a more competitive system for selection of senior teachers using a competitive interview and drawing on data, such as attendance at school, completion of recognized in-service courses and principal's reports. Such a system would provide incentives for regular attendance, positive engagement with continuous professional development and a positive professional attitude within the school. This system would be easiest to accomplish in the context of a broader reform of civil service pay scales and promotion structures.

Reviewing the Financial Structure

In further expanding education coverage while developing quality and equal opportunities, it will be necessary to review education system financing.
Oman currently allocates a high proportion of its civil ministries' resources to the education sector. Recurrent expenditure in education (including the MOE, MOHE, SQU and Ministry of Manpower) accounts for 37.2 percent of all civil ministries' recurrent expenditure or 17.5 percent of all government recurrent expenditure. Education costs have been increasing in real terms and at a faster rate than the increase in student numbers. Since Oman already allocates a high proportion of civil ministries' funds to education, further developments are likely to rely more on efficiency gains and on private financing. Efficiency gains might include, for example, improving the budgeting system, reviewing the remuneration and staffing policies and conducting a public expenditures tracking survey (PETS) to precisely identify bottlenecks.

A move from input-based financing to an output-based approach could enhance the use of the budget as a financial control mechanism and a policy instrument.
This would involve linking resource allocations to specific outputs and functions, thus providing a transparent financial incentive to promote performance. Output-based budgets could be determined in the context of a medium-term expenditure framework, which provides stability and predictability within the sector (box 7.3). As a first step, the MOE could commission a PETS to examine the existing resource flows.

There is some scope for efficiency in teacher allocation and utilization.
Currently staff costs account for over 90 percent of recurrent education expenditure, higher than the 63 percent average in the 22 countries for which data is available. High staffing levels in schools drive these relatively high staff costs. Nationally in 2008/09, the average student-teacher ratio was 12.5, compared with the OECD average of 17 (in primary schools). These very favorable staffing levels are not reflected in improved class sizes; in fact the average class size of 27 is larger than the OECD average. Relatively modest changes in the teaching hours of each teacher could be used either to reduce class sizes or to release resources to expand preschool education. A change from the current allocation of 2.2 teachers per class to 2 teachers per class, for example, would release 3,800 teachers—more than enough to provide a preschool class at each school.

There is some scope for increasing the share of education expenditure with private sources in higher education.
Currently private expenditure on education is low, accounting for only 4.3 percent of household expenditure (Income and Expenditures Survey 2007/08). The popularity of private education provision in preschool and in higher education demonstrates the demand for education and willingness to pay where publicly funded services are not available. Reliance on private finance, however, tends to have socially regressive effects, as the wealthier families are more able to afford education services. In principle, therefore, cost sharing with private sources is more appropriate at the upper end of the system (such as in higher education) where the private returns to education are sizeable and could be accompanied by a targeted grant scheme to ensure that the poorest families are not excluded.

9.4 IMPROVING THE QUALITY OF EDUCATION IN OMAN: A REVIEW OF POLICY RECOMMENDATIONS

This report acknowledges the tremendous achievements that Oman has made in education provision to date, and the capacity and political will that has facilitated the remarkable accomplishments. The report offers some policy recommendations on the way forward for Oman's education sector. A summary of the report's key policy findings are outlined in a policy matrix that follows in table 9.1. The matrix highlights not only the report's recommendations and their rationales but also the relevant ministries and stakeholders whose collaboration is essential for the success of each step. The challenge of improving education quality is not insurmountable for Oman, but it will require a shared vision, careful planning, focused use of resources and collaborative work involving all relevant stakeholders.

Table 9.1

Matrix of Policy Recommendations for the Ministry of Education (MOE)

Policy Recommendation	Rationale	In Collaboration With	Time Frame
A. Focusing on Quality			
A.1 Increase student time on meaningful learning			
A.1.1 Meet target of a 180-day school year. To enforce the target, the MOE should (a) Require term extension for lost official school days; (b) Keep grades 1–11 operating before and during grade 12 examinations; (c) Hold grade 12 examinations at school year end; and (d) Ensure teachers prioritize curricular topics, using after-class time for extracurricular activities.	The official annual target is 180 school days, but the actual number is substantially shorter due to school closures for events and use of teachers as examination invigilators, resulting in class cancellations.		Short
A.2 Develop a culture of high learning standards and align with curricula and public examinations			
A.2.1 Set clear and realistic learning targets for each grade and encourage teachers to monitor learning regularly.	Sharing clear and realistic targets with stakeholders can raise learning quality.		Short
A.2.2 Reform public examination content to increase assessment of higher order skills.	Predictability of public examinations can encourage rote learning rather than develop higher-order skills.		Medium/long
A.2.3 Provide regular and realistic feedback to parents and link appropriate achievement information to national norms.	A disconnect is evident between students' actual achievement and their confidence in their abilities.		Short
A2.4 Support further development of regular national monitoring of student achievement levels to produce valid, objective data for policy makers.	Policy makers lack good quality, timely data on student achievement of key learning objectives.		Medium/long

Short-term: implemented within five years.

Medium/long-term: implemented beyond five years

Policy Recommendation	Rationale	In Collaboration With	Time Frame
A.2.5 Analyze examination results to identify and address learning difficulties; determine specific subject areas for in-service teacher education focus.	Interested MOE Director Generals receive examination results, but data are not used as a learning tool.		Short
A.2.6 Support long-term research and evaluation program for Tests and Examinations Administration Department (TEAD) staff to strengthen examination system quality and to provide useful feedback to policy makers and stakeholders.	Few TEAD staff have technical training in key aspects of examination paper development, research and evaluation.		Medium/long
A.2.7 Implement a program of activities to improve continuous assessment (CA) program by establishing moderation review committees.	Moderation is an essential component of effective CA and currently lacks rigor in Oman.	Schools/teachers	Short
A.2.8 Consider global trends in curriculum development; examine national/state curricula and experience of other countries and international/national assessments to identify areas that could improve Omani curriculum quality.	The experience of other countries can enhance curriculum development.		Short
A.2.9 Strengthen technical competence of Curriculum Development Directorate (CDD) staff in curriculum development. Consider a twinning arrangement with an internationally respected center.	CDD staff recruited mostly from teaching profession so lack formal training in curriculum development and evaluation.	Ministry of Higher Education (MOHE)	Short
A.3 Examine and address boys' underachievement			
A.3.1 Increase parental awareness of the gender gap and set higher expectations for boys.	TIMSS 2007 shows Oman's gender gap is the highest. Reasons for significant performance gap for boys may lie in use of out-of-school time and child-rearing practices.	Parents and schools	Short
A.3.2 Provide boys and their parents with realistic and valid performance assessments.	Despite their poor TIMSS 2007 results, boys had unjustifiably high confidence levels in their academic progress.	Schools and teachers	Short
A.3.3 Undertake a comprehensive empirical study to identify key factors affecting boys' underachievement.	Key issues in boys' underachievement are not well understood.		Short
A.4 Increase involvement of parents and community in education			
A.4.1 Run public awareness campaign to inform parents of their potential to enhance children's development and attitudes toward learning and achievement.	Home is a critical factor in overall development. Parents can read, monitor homework, organize extracurricular activities and encourage school attendance.	Schools and parents	Short
A.4.2 Encourage meaningful parent involvement in school life through parent-teacher committees.	With involvement, parents can understand schools' expectations and can improve students' perception of schoolwork's importance.	Schools	Medium/long

Short-term: implemented within five years.

Medium/long-term: implemented beyond five years

Policy Recommendation		Rationale	In Collabo-ration With	Time Frame
B. Expanding Participation in Specific Areas				
B.1	**Expand provision of early childhood education (ECE)**			
B.1.1	Expand publicly financed preschool education.	International research shows ECE importance. Participation in ECE is low in Oman, but private preschool growth reflects strong demand.		Medium/long
B.1.2	Target areas of poor educational performance initially.	Benefits of ECE are usually substantial for children from the least affluent and least-educated families.		Short
B.1.3	Develop an ECE strategy that links with an overall education vision and includes a diagnosis, long-term vision, short-medium term strategic plan and implementation arrangement.	A national strategy coordinating all relevant stakeholders will ensure expansion and improvement of ECE.	All stake-holders	Short
B.2	**Expand special needs education**			
B.2.1	Develop a coherent national strategy for special needs education.	A national strategy coordinating all relevant ministries (including Ministry of Health (MOH) and Ministry of Social Development (MOSD)) will manage special needs education issues coherently.	MOH and MOSD	Short
B.2.2	Establish mechanisms for identifying and evaluating children with special needs.	Oman currently lacks adequate mechanisms for identifying and evaluating children with special needs.	MOH and MOSD	Short
B.2.3	Collect reliable data on demand for educational facilities to serve children with special needs.	Lack of reliable data hampers the appropriate strategy development.	MOH and MOSD	Short
B.2.4	Provide appropriate training for public school teachers responsible for integrating students with special needs.	Teachers currently receive little training to adapt teaching methods for class integration of special needs children.	MOHE	Medium/long
B.3	**Improve adult literacy education quality**			
B.3.1	Evaluate literacy program curriculum and delivery methods; conduct a literacy needs assessment for potential adult learners and dropouts from formal education system, particularly males.	The current literacy program is relatively small, has problems attracting good tutors or teachers and has a substantial under-representation of males.		Short
B.3.2	Enhance the quality of the literacy program by creating more centers for literacy courses, improving the curriculum and supporting materials, and developing a policy to attract and retain suitable teachers.	Oman's literacy levels have improved considerably but measures exist to reduce illiteracy further and to improve literacy learning quality.		Medium/long

Short-term: implemented within five years.

Medium/long-term: implemented beyond five years

Policy Recommendation		Rationale	In Collabo-ration With	Time Frame
C. Developing an Appropriate Teaching Force with Strong Pedagogical Skills				
C.1	**Develop an adequate supply of teachers**			
C.1.1	Guide teacher education institutions with specific numbers for each specialty.	An imbalance exists with shortages in some specializations and oversupply in others.	MOHE	Short
C.1.2	Publish figures on projected teacher requirements.	Requirement projections could assist students in course selection for future employment.		Short
C.1.3	Adjust long-term teacher supply to meet projected demand in each subject area.	Ensuring an adequate supply of teachers will reduce reliance on expatriates. Recent changes have reduced the output of teachers for basic education cycle one and may result in reliance on teachers trained in other countries in the medium term.	MOHE	Medium/long
C.1.4	Staff ECE preparation classes attached to basic education schools with qualified teachers who have the same employment status as basic education teachers.	Employing qualified staff will ensure high quality ECE and help retain staff.		Short
C.2	**Address issues of teacher deployment**			
C.2.1	Provide a substantial additional allowance for teachers in carefully targeted remote schools.	Teachers tend to leave remote area schools after serving relatively short periods; these areas are over reliant on expatriate teachers.		Medium/long
C.2.2	Extend teacher duration of stay in remote area schools before granting transfer.	Current duration before transfer request is one year.		Short
C.2.3	Give preference to remote area candidates when selecting students for preservice teacher education courses and for subsequent recruitment.	Teachers from remote areas are more likely to remain than those from urban areas.	MOHE	Short
C.3	**Enhance teacher education quality and consistency**			
C.3.1	Regulate teacher education courses to ensure preparation for curriculum and emphasize practical development of pedagogical skills. Increase teaching practice hours and enhance the role of the cooperating teacher. Consider accreditation of teacher education courses that meet required standards.	Teacher preparation courses do not match the current curriculum well, and practical component of teacher education courses is small.	MOHE	Short
C.3.2	Develop a system of temporary secondment of experienced teachers to teacher education institutions.	Many teacher trainers have limited school teaching experience.	MOHE	Medium/long

Short-term: implemented within five years.

Medium/long-term: implemented beyond five years

Policy Recommendation		Rationale	In Collaboration With	Time Frame
C.4	**Focus teachers on quality of teaching and student learning**			
C.4.1	To increase teaching time, simplify reporting and evaluation. Rebalance supervision, monitoring and appraisal to prioritize teacher classroom performance over paperwork.	Despite low teaching loads, teachers complain of an overload of time devoted to paperwork, recording and reporting.		Short
C.4.2	Avoid teacher specialization in early grades.	Specialization can impede teachers' ability to know students, address individual needs and integrate learning.	Schools	Medium/long
C.5	**Focus in-service continuing professional development on teaching and learning**			
C.5.1	Give priority to in-service courses related to teaching and learning, particularly on classroom skills delivered by experienced teachers.	To focus on education quality, in-service training should prioritize teaching for quality learning.	Schools and teachers	Short
C.5.2	Support teacher-peer activities, including formation of regional teacher subject associations.	Cascade model of professional development delivery is not optimal for changing teachers' classroom practices.	Schools and teachers	Short
D. Improving Education Relevance				
D.1	**Strengthen links among education system, higher education institutions (HEI) and employers**			
D.1.1	Share information on university and employer requirements and basic and post-basic education system expectations.	There is a lack of information flow between HEIs, employers, government and parents and students on skills required, recruitment plans, assessments of graduates, and so on.	MOHE and National Career Guidance Center (NCGC)	Short
D.1.2	Revise curricula and standards to improve labor market relevance.	Employer feedback suggests curricula and school standards could improve.		Medium/long
D.1.3	Analyze weaknesses of new entrants to higher education; work to address identified issues to eliminate need for a foundation year.	Most HEIs require entrants to complete a "foundation year" due to their lack of skills, particularly in English.	MOHE	Short
D.1.4	Reduce the separation between academic and vocational streams; increase vocational course value; and avoid early selection and specialization.	Employers may require a mix of academic, practical and metacognitive skills.		Medium/long
D.1.5	Incorporate work experience into school programs.	Work experience in school could focus students on necessary skills and guide course choices, aiding transition from school to work.	Schools and employers	Medium/long

Short-term: implemented within five years.

Medium/long-term: implemented beyond five years

Policy Recommendation		Rationale	In Collaboration With	Time Frame
D.2	**Improve the quality of curricula**			
D.2.1	Clarify necessary aspects of English language learning (reading, writing, oral skills or listening skills); modify the curriculum; and prioritize appropriate teaching methods.	Most HEIs instruct in English: feedback indicates new entrant English levels are low. Spoken English standards also concern employers.		Short
D.2.2	Review mathematics and science curriculum.	Evidence suggests unsatisfactory achievement in mathematics and science. Improve student learning quality in these subjects highly valued by employers.		Short
D.2.3	Reduce the number of subjects required in post-basic education.	To improve post-basic education quality, reduce required subjects and increase understanding of priority subjects.		Short
D.2.4	Improve curriculum development through training and professional development for CDD personnel, and use available appropriate objective student achievement data.	Formal training in curriculum development and evaluation lags. National and international learning assessments provide useful information for future curriculum development.		Short
D.3	**Increase flexibility within the education system**			
D.3.1	Build a flexible system that delays specialization, allows changes after specialization, and offers reentry to learning after work experience.	International experience indicates considerable benefits from a flexible education system, allowing longer participation, transitions to different levels, and transfers across courses and institutions.	MOHE	Medium/long
D.3.2	Develop a comprehensive national qualifications framework (NQF).	A comprehensive NQF allows course comparison and facilitates transitions among pathways.	MOHE	Medium/long
E. Management and Financial Implications				
E.1	**Strengthen sector vision and planning**			
E.1.1	All relevant ministries collaborate to develop and implement a national education strategy.	As a national priority, education's scope extends beyond the MOE and MOHE.	MOHE, MOM, MOSD and Ministry of Finance (MOF)	Short
E.1.2	Establish a high-level education development body coordinating all relevant ministries, stakeholders and the private sector.	A coordinating body can organize priorities to meet policy goals like revising curricula and aligning teacher training and supply.	MOHE, MOM, MOSD, MOF and other relevant agencies	Short
E.1.3	Improve data collection and usage for planning. This includes an education management information system based on more accurate, reliable, timely and publicly available data on all aspects of the education system.	Currently some key education indicators are not available or inaccurate. This hinders planning and monitoring progress of reforms.	MOHE MOM and MOF	Short
E.1.4	Centralize research and evaluation through a National Education Research and Evaluation Center; support its personnel through sustained capacity building to provide objective evidence on the educational system. For future development, evaluate major initiatives such as whole-school evaluation, in-service teacher training and guidance counseling.	Numerous bodies do education research and evaluation but lack key skills for research design, statistics and test development.		Medium/long

	Policy Recommendation	Rationale	In Collaboration With	Time Frame
E.2	**Enhance sector management capacity**			
E.2.1	Develop educators' leadership and management skills with systematic training at central, local and school levels, possibly as a postgraduate course.	Many education leaders do not have relevant training and preparation for their role.	MOHE	Short
E.2.2	Define clear roles and responsibilities for MOE staff.	Reduce duplication and enhance accountability and transparency.		Short
E.2.3	Extend school-based management to all schools; broaden decentralization of responsibility to governorates and regions.	Further decentralization to governorates, regions and schools informs decisions based on local contexts.		Medium/long
E.3	**Performance management**			
E.3.1	Consider structures to encourage and reward performance of teachers and administrators.	Current performance management system has little incentive for excellence.		Medium/long
E.3.2	Consider linking promotion to performance, for example, with a competitive selection system for senior teachers.	Linking promotion to performance could encourage regular attendance, positive engagement with professional development and professional attitudes.		Medium/long
E.4	**Review the financial structure**			
E.4.1	Examine the scope for efficiency gains: improving the budget system; reviewing remuneration and staffing policies; and conducting public expenditure tracking survey (PETS) to identify bottlenecks.	A high proportion of civil ministries' funds are allocated to education, so further development likely to rely on efficiency gains.	MOF	Short
E.4.2	Consider moving from input-based financing to an output-based approach.	Linking resource allocations to specific outputs and functions provides a transparent financial incentive to promote performance.	MOF	Medium/long
E.4.3	Review salary bill to improve efficiency in teacher allocation and utilization and to free more resources for investment in quality improvement and new initiatives.	Oman has low student-teacher ratios and high class sizes. Increasing teaching hours could release resources to reduce class sizes or expand ECE.		Medium/long
E.4.4	Consider diversifying sources of funding while rationalizing expenditures and ensuring equal access; for example, user financial contributions at post-basic level could be targeted at noncore activities with financial aid for those in need.	It will be difficult to sustain quality education relying solely on public resources.		Medium/long
E.4.5	Increase the scope of private contributions to education. This requires revamping regulatory framework and strengthening quality control mechanisms.	Opening education to more private investment would alleviate the burden on MOE.		Medium/long

Short-term: implemented within five years.

Medium/long-term: implemented beyond five years

APPENDICES
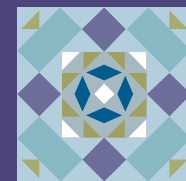
APPENDIX A.
ECONOMIC DATA

Table A.1
Selected Economic Indicators, 1998–2009

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
GNI per capita, World Bank Atlas method (current US$)	6,300	6,090	6,720	7,700	7,870	8,140	9,140	10,380	12,230	14,300	17,890	-
Nominal GDP (current RO million)	5,356	5,972	7,479	7,459	7,708	8,283	9,487	11,883	14,151	16,114	23,288	18,020
Real GDP (constant 2000 RO million)	7,191	7,147	7,479	7,895	8,058	8,087	8,362	8,696	9,117	9,794	11,052	11,176
Real GDP growth rate (%)	-	-0.6	4.6	5.6	2.1	0.4	3.4	4.0	4.8	7.4	12.8	1.1
Nominal GDP per capita (current RO)	2,342	2,569	3,113	3,010	3,037	3,538	3,927	4,736	5,491	5,875	8,123	5,677
Nominal GDP per capita (US$)	6,092	6,681	8,096	7,829	7,899	9,201	10,214	12,316	14,282	15,279	21,126	14,765
Real GDP per capita (constant RO 2000)	3,145	3,074	3,113	3,186	3,175	3,454	3,462	3,466	3,538	3,571	3,855	3,521
GDP deflator (2000=100)	74	84	100	94	96	102	113	137	155	165	211	161

Source: Authors' calculations based on MONE 2010 and World Bank Data Development Platform.

Note: The figures for 2009 are provisional.

Table A.2

Public Recurrent and Investment Expenditure by Selected Sector, 2005, 2007 and 2009

	All (Current + Capital)			Current			Capital		
	2005	2007	2009	2005	2007	2009	2005	2007	2009
RO million									
Total Government Expenditure	4,207.6	5,880.5	7,428.7	3,212.0	4,165.6	4,707.1	995.6	1,714.9	2,721.6
Total Civil Ministries	2,077.7	2,737.2	3,850.6	1,531.9	1,898.7	2,216.7	545.8	838.5	1,633.9
Education-related Ministries, *of which:*	545.9	746.2	948.2	493.2	651.1	823.8	52.7	95.1	124.4
Ministry of Education	394.3	516.9	630.0	360.6	474.5	578.1	33.7	42.4	51.9
Ministry of Higher Education	24.5	55.8	70.6	22.0	34.8	43.3	2.5	21.0	27.3
Sultan Qaboos University	89.6	110.1	142.2	84.6	99.4	127.0	5.0	10.7	15.2
Ministry of Manpower	37.5	63.4	105.4	26.0	42.4	75.4	11.5	21.0	30.0
Diwan of Royal Court/Royal Court Affairs	283.2	417.1	637.0	192.6	276.0	296.1	90.6	141.1	340.9
Ministry of Transport and Telecommunication	159.0	286.8	581.8	19.1	23.4	26.6	139.9	263.4	555.2
Ministry of Health	199.6	247.7	332.9	178.8	228.5	295.1	20.8	19.2	37.8
Pensions	61.5	180.0	119.8	61.5	180.0	119.8	-	-	-
Ministry of Housing	179.5	190.8	69.8	112.5	100.8	23.1	67.0	90.0	46.7
Percentage of Civil Ministries' Expenditure (%)									
Education-related Ministries, *of which:*	26.3	27.3	24.6	32.2	34.3	37.2	9.7	11.3	7.6
Ministry of Education	19.0	18.9	16.4	23.5	25.0	26.1	6.2	5.1	3.2
Ministry of Higher Education	1.2	2.0	1.8	1.4	1.8	2.0	0.5	2.5	1.7
Sultan Qaboos University	4.3	4.0	3.7	5.5	5.2	5.7	0.9	1.3	0.9
Ministry of Manpower	1.8	2.3	2.7	1.7	2.2	3.4	2.1	2.5	1.8
Diwan of Royal Court/Royal Court Affairs	13.6	15.2	16.5	12.6	14.5	13.4	16.6	16.8	20.9
Ministry of Transport and Telecommunication	7.7	10.5	15.1	1.2	1.2	1.2	25.6	31.4	34.0
Ministry of Health	9.6	9.0	8.6	11.7	12.0	13.3	3.8	2.3	2.3
Pensions	3.0	6.6	3.1	4.0	9.5	5.4	-	-	-
Ministry of Housing	8.6	7.0	1.8	7.3	5.3	1.0	12.3	10.7	2.9
Percentage of Total Government Expenditure (%)									
Education-related Ministries, *of which:*	13.0	12.7	12.8	15.4	15.6	17.5	5.3	5.5	4.6
Ministry of Education	9.4	8.8	8.5	11.2	11.4	12.3	3.4	2.5	1.9
Ministry of Higher Education	0.6	0.9	1.0	0.7	0.8	0.9	0.3	1.2	1.0
Sultan Qaboos University	2.1	1.9	1.9	2.6	2.4	2.7	0.5	0.6	0.6
Ministry of Manpower	0.9	1.1	1.4	0.8	1.0	1.6	1.2	1.2	1.1
Diwan of Royal Court/Royal Court Affairs	6.7	7.1	8.6	6.0	6.6	6.3	9.1	8.2	12.5
Ministry of Transport and Telecommunication	3.8	4.9	7.8	0.6	0.6	0.6	14.1	15.4	20.4
Ministry of Health	4.7	4.2	4.5	5.6	5.5	6.3	2.1	1.1	1.4
Pensions	1.5	3.1	1.6	1.9	4.3	2.5	-	-	-
Ministry of Housing	4.3	3.2	0.9	3.5	2.4	0.5	6.7	5.2	1.7
Percentage of GDP (%)									
Education-related Ministries, *of which:*	4.6	4.6	5.3	4.2	4.0	4.6	0.4	0.6	0.7
Ministry of Education	3.3	3.2	3.5	3.0	2.9	3.2	0.3	0.3	0.3
Ministry of Higher Education	0.2	0.3	0.4	0.2	0.2	0.2	0.0	0.1	0.2
Sultan Qaboos University	0.8	0.7	0.8	0.7	0.6	0.7	0.0	0.1	0.1
Ministry of Manpower	0.3	0.4	0.6	0.2	0.3	0.4	0.1	0.1	0.2

Source: MONE 2008 and 2010.

APPENDIX B.
THE ORGANIZATION OF THE MINISTRY OF EDUCATION

Figure B.1

The Organization of the Ministry of Education
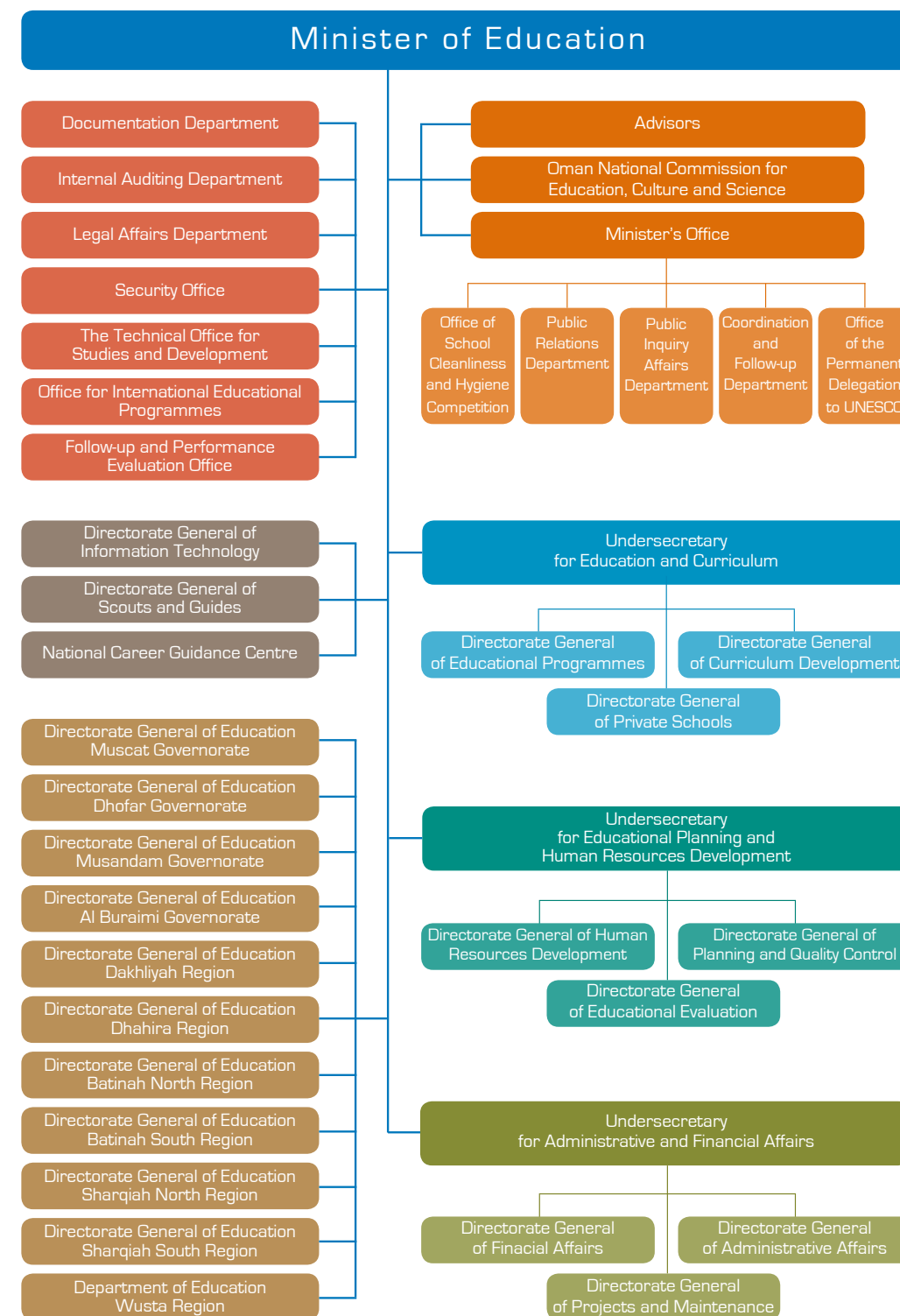
Source: MOE Technical Office for Studies and Development.

APPENDIX C.
EDUCATION FOR ALL GOALS

The Education for All (EFA) goals were agreed at the World Education Forum in Dakar, Senegal, in April 2000 (UNESCO 2000b). The following are the six goals:

(1) Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children;

(2) Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete, free and compulsory primary education of good quality;

(3) Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programmes;

(4) Achieving a 50 percent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults;

(5) Eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015 with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality;

(6) Improving all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.

APPENDIX D.
INTERNATIONAL COMPARISON
OF GROSS ENROLLMENT RATIOS

Table D.1

Gross Enrollment Ratios (GERs) in Selected Countries, 2007–2009 *(%)*

Primary		Lower secondary		Upper secondary	
Qatar (2008)	109				
United Arab Emirates (2007)	108	Qatar (2008)	113		
Bahrain (2008)	105	Estonia (2008)	102		
Korea, Rep. (2008)	105	Bahrain (2008)	101		
Lebanon (2008)	101	United Arab Emirates (2007)	101		
Estonia (2008)	100	**OMAN* (2009)**	**100**		100
Mauritius (2008)	99	Korea, Rep. (2008)	99	Estonia (2008)	97
Saudi Arabia (2008)	98	Saudi Arabia (2008)	98	Korea, Rep. (2008)	96
Malaysia (2007)	97	Mauritius (2008)	97	Bahrain (2008)	92
OMAN* (2009)	**96**	Kuwait (2008)	96	Saudi Arabia (2008)	91
Kuwait (2008)	95	Malaysia (2007)	93	**OMAN* (2009)**	**90**
		Lebanon (2008)	88	United Arab Emirates (2007)	84
				Kuwait (2008)	81
				Mauritius (2008)	81
				Qatar (2008)	78
				Lebanon (2008)	75
High income countries (2008)	101	High income countries (2008)	101	High income countries (2008)	99
Middle income countries (2008)	109	Middle income countries (2008)	83	Middle income countries (2008)	54

Source: EdStats (August 2010) and authors based on data from the MOE Statistical Department.

Notes: The GER can be over 100 percent in cases where there are students older or younger than the official age for the level, or where population estimates for the country are not accurate.

*Oman includes Omani nationals only.

APPENDIX E.
PRESCHOOL EDUCATION IN OMAN 2008/09

Table E.1
Preschool Education in Oman, 2008/09

Type of school	Type	Supervisor	Course length	Intended age	Fees	Number of students	% of students	Description
Qur'anic schools or Madrassas (two types)	Public	MARA	3 years	3-6 year olds	No	411	1	Implement a curriculum approved by the MARA, concentrating on the Qur'an and its sciences, and the principles of reading, writing, and mathematics.
	Private	MOE	2 years	3.5-5.5 year olds	Yes	14,397	35	Uses the above and a special curriculum for Qur'anic schools.
Private kindergartens (two types)	Private	MOE	3 years	3-6 year olds	Yes	11,966	29	Managed by the private sector under the administrative and technical supervision of the MOE and using the advanced kindergarten curriculum prepared by the MOE. Aims to achieve complete and balanced growth for the child physically, mentally, socially, and emotionally.
	Private	MOE	2 years	4-6 year olds	Yes			
Child Growth House	Voluntary	MOSD (in coordination with MOE)	2 years	3.5-5.5 year olds	Small fees	7,109	17	A local group initiative for rural children, to provide educational, social, cultural and entertainment services.
Child Corner	Voluntary	MOSD (in coordination with MOE)	2 years	3.5-5.5 year olds				Under the auspices of the Omani Women Associations (OWA) for children in cities and in centers of Wilayats. Provides basic educational, social, cultural, and entertainment services. Managed by the OWA and female rehabilitation centers
International schools	Private	MOE	Varies	Varies	Yes	5,403	13	Implement their own curriculum. Most students are non-Omani.
Preparation classes	Public	MOE	1 year	5 year olds	No	1,173	3	A pioneering initiative, attached to government basic education schools provided by the MOE in some remote areas. Began in 2005/06 with 14 schools.
Royal Oman Police	Public	MOE and ROP	1 year	4 year olds	Small fees	643	2	Uses MOE curriculum.
Royal Armed Forces	Public	MOE	2 years	3.5-5.5 year olds	Small fees	380	1	Uses MOE curriculum.
Total						**41,482**	**100**	

Source: Authors, using information from the MOE Statistical Department.

APPENDIX F.
GRADE 1 TEACHER RATINGS

Figure F.1
Percentage of Students Awarded an A in Grade 1 by Gender and Region, 2009 *(%)*
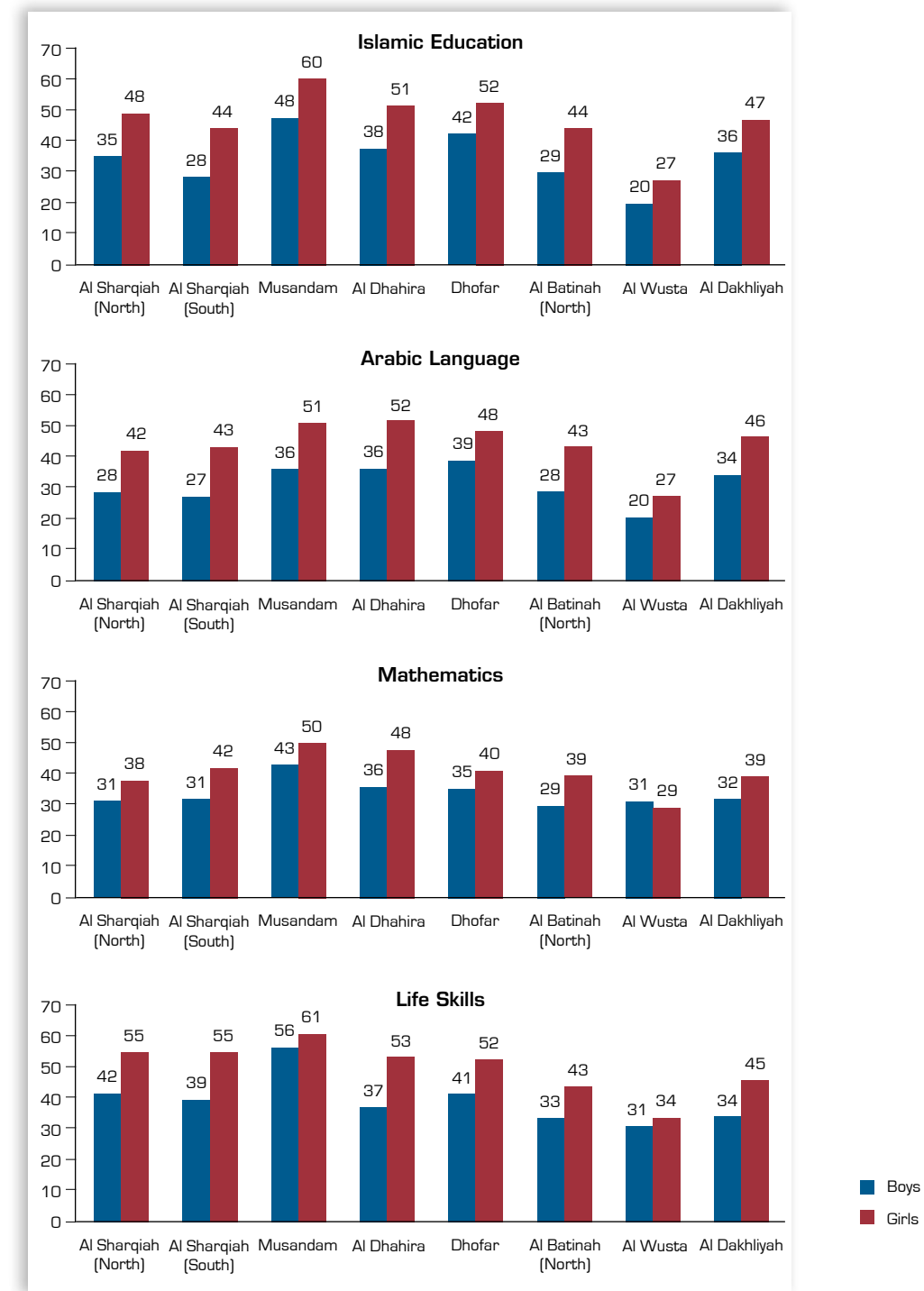
Source: MOE Statistical Department.

APPENDIX G.
NUMBER OF COURSES TAKEN IN SELECTED COUNTRIES

Omani post-basic students are required to take eight group one courses (Islamic culture, Arabic language, English language, mathematics, science, social studies, life skills, as well as a project). In addition, they are required to take three courses from a list of electives, bringing the total to 11 subjects. The number of examination courses or subjects taken by similar-aged students in other countries varies from country to country. Students in England and Wales take three to five subjects, Scotland five, while students in France, the Netherlands and the Republic of Ireland take six or more. In the United States, requirements for getting a high school diploma vary considerably across states; four to five subjects (usually reading, language, mathematics, science and social studies) are common (Center on Education Policy 2009). The full diploma for the International Baccalaureate, which is offered in many countries, requires six courses (two languages, and one from each of four categories: individual and societies, experimental sciences, mathematics and computer sciences, and the arts).

APPENDIX H.
SOME LIMITATIONS OF THE CURRENT EXAMINATION SYSTEM

The following are some challenges to improving the quality of the examination system:

1. The present system does not allow adequate time for examination preparation and for the production of papers and examination materials. Having to prepare examinations for each semester makes the preparation task particularly difficult. The 2009/10 examinations were limited to one at the end of the year due to special circumstances. The MOE plans to evaluate the impact of limiting the examinations to one examination at the end of the year as opposed to the previous mid-year and end-of-year examinations.

2. The examination system lacks a rigorous moderation system, a basic requirement for ensuring consistency of marking standards (especially for continuous assessment).

3. A tradition of past examinations dictates instruction; teachers tend to base their teaching on the expected content of examination papers and their assessment practices during the school year on the format of old examination papers. The Tests and Examinations Administration Department (TEAD) has taken some steps to familiarize teachers and students with new forms of test items by distributing sample items to all schools with grade 12.

4. The grade 12 examination effectively narrows the curriculum to those subjects that are tested in the public examination and, within each subject, to those aspects that are traditionally tested. Other subjects are tested at school level.

5. The current marking system involves an initial pilot marking of about 5 to 10 percent of the grade 12 papers from each region. The marks for individual questions are studied to see if some items are very easy or very difficult. Where this happens, marks are redistributed to other questions and a formal marking key is prepared. A similar redistribution takes place (less now than in earlier years) after the formal marking has been completed. In the past, the overall effect of this redistribution system was to weaken the ability of the examination to discriminate among students. The TEAD has indicated that redistribution of marks rarely happens now. If there is a "clear error" within a question, however, the marks are redistributed within the remaining parts of the question.

6. Examination paper writers' skills need to be developed through training in setting questions that assess higher-order thinking skills.

APPENDIX I.
ENSURING THE CREDIBILITY OF THE EXAMINATION SYSTEM

The Ministry of Education could remain vigilant and ensure that the public examination system continues to be viewed as credible. The Tests and Examinations Administration Department (TEAD) has documented procedures to address reported incidences of improper behavior by students and others. These include verbal warnings, suspensions and denial of the right to register in a school during the following academic years. Discussions with examination personnel and stakeholder groups suggest that incidences of examination malpractice, while rare, nevertheless occur in Oman as in other countries that run high-stakes public examination systems. Incidences of students giving identical answers have been reported. In particular, care needs to be taken to ensure that electronic devices (which are banned) are not used and that materials are not smuggled into the examination room. Invigilators need to be firm when supervising candidates, particularly adult candidates. Maintaining confidence in the examination system requires assigning adequate numbers of invigilators to examination sites, establishing and publicizing the penalties for students, teachers and invigilators who violate examination rules, and enforcing penalties. The TEAD could also conduct random unannounced visits to examination sites; constantly review its security measures; and keep itself abreast of findings relating to examination malpractice in other countries (Greaney and Kellaghan 1996).

APPENDIX J.
USING NATIONAL ASSESSMENT RESULTS FOR REGIONAL COMPARISONS

The results of a sample-based national assessment, using a standards-based approach, could be presented like the data for mathematics in table J.1. This shows that overall (nationally) 2.4 percent of students did not score well enough to reach level 1. At the other extreme 10.7 percent reached level 5, the advanced level. Policy makers interested in raising achievement in the poorest performing part of the country (in terms of the national assessment results for mathematics) should focus attention on region 1, as it is the region that has the lowest proportions of students in the upper levels.

Table J.1

Example of Standards Data at Each Mathematics Achievement Level, by Region *(% of students, standard error)*

Region	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
1	3.2	23.8	22.9	24.8	20.2	5.2
	(0.97)	(2.12)	(2.37)	(1.73)	(2.32)	(1.42)
2	1.1	6.5	16.9	23.8	38.1	13.7
	(0.78)	(1.79)	(2.36)	(3.01)	(4.60)	(1.88)
3	2.8	13.7	21.3	25.9	24.2	12.1
	(0.80)	(1.94)	(2.06)	(1.92)	(2.12)	(1.96)
4	2.50	13.04	21.70	25.20	25.70	11.80
	0.62	(1.71)	(2.22)	(1.83)	(2.46)	(1.55)
National	2.4	14.2	20.6	24.9	27.2	10.7
	(0.41)	(1.06)	(1.12)	(1.16)	(1.64)	(0.95)

Source: Shiel 2010.
Note: Standard errors are shown in parentheses.

APPENDIX K.
AUSTRALIAN SCHOOL REPORT:
NATIONAL ASSESSMENT PROGRAM
LITERACY AND NUMERACY (NAPLAN),
YEAR 5, 2009

Table K.1
Summary of Skills Assessed 2009

The following table describes some of the skills assessed in this year's tests. The skills increase in difficulty from the lowest to the highest band. A student assessed in a particular band is likely to have correctly answered questions involving skills in that band and in each band below it.

Year 5

Band	Reading	Writing	Language Conventions	Numeracy
8	Analyses and interprets the content of complex texts. Identifies the writer's main message by connection information across a persuasive text.	Writes a cohesive story that attempts to engage the reader. Makes deliberate and appropriate word choices to create and emotional response. Attempts to use features of recognisable text types such as fantasy or adventure stories, and devices such as humour or drama. Constructs most complex sentences correctly.	Identifies an error, then correctly spells words with difficult letter patterns (exhausted, excitement). Recognises and applies a variety of grammatical conventions. Demonstrates the correct use of punctuation in written English such as commas, speech marks and apostrophes.	Solves a word problem involving subtraction of decimals to two decimal places. Recognises different visual representations of a common fraction. Solves a complex problem involving multiplication, division and conversion between grams and kilograms. Calculates the area of rectangles given their side lengths. Visualises the number of painted faces of a composite 3D object.
7	Infers the motivation of a character in a more difficult story. Identifies how values are presented in a persuasive text. Understands how factual texts are structured and recognises the effect of slogans and the purpose of layout features such as subheadings.	Writes a story with a beginning and a detailed complication. Develops characters and setting through description or dialogue. Joins and orders ideas using connection words and maintains clear meaning through the story. Correctly spells most common words and some difficult words, including words with less regular spelling patterns and silent letters.	Correctly spells some difficult words ending with 'tion' (illustration) and with long vowel sounds (author). Identifies an error, the correctly spells some difficult words (precious) and words that contain silent letters (knitting). Recognises common grammatical conventions such as the correct tense of a verb phrase. Recognises the correct use of punctuation for direct and indirect speech.	Applies strategies such as multiplication or grouping to solve a word problem. Converts centimetres to metres. Calculates elapsed time in hours and minutes using digital am and pm times. Determines the total number of specified features of a common 3D object.
6	Makes connections between ideas that are implied and not clearly stated. Interprets figurative language to understand a character's actions and feelings. Understands how texts are structured and recognises the purpose of parts of a text such as the title.	Organises a story into paragraphs that focus on one idea or a group of related ideas. Uses accurate words or groups or words when describing events and ideas. Punctuates nearly all sentences correctly with capitals, full stops, exclamation marks and question marks. Correctly uses more complex punctuation marks some of the time.	Correctly spells words with long vowel sounds (curved) and words ending in 'ous' (dangerous). Identifies an error, the correctly spells two-syllable words (often). Recognises common grammatical conventions such as such as the correct us of adjectives, verbs and adverbs. Recognises the correct us of the punctuation such as commas in lists and possessive apostrophes.	Solves a problem involving addition and subtraction. Solves a problem involving division with a remainder. Divides whole objects into fractions. Continues a spatial pattern beyond the next term. Uses a balance to determine equivalence. Finds the width of a rectangle given the perimeter and length. Locates information in a reflex angle. Interprets a map and follows directions to locate a position.
5	Connects and interprets ideas in a story. Identifies the meaning of a word in context and the main idea of a paragraph. Connects ideas and pictures in a longer illustrated factual text. Identifies to whom a pronoun refers in a sentence.	Structures a story to include a beginning, a complication and events that are related to each other. Includes enough supporting detail for the story to be easily understood by the reader, although the conclusion may be weak or simple. Correctly structures most simple and compound sentences and some complex sentences.	Correctly spells words containing unusual vowel patterns (thought) and two- and three-syllable words ending with a 'le' or 'er' (title, publisher). Identifies an error, then correctly spells compound words (sometimes). Recognises common grammatical conventions such as the correct form of verbs. Recognises the correct use of punctuation such as question marks within direct speech.	Solves a money problem involving multiplication and rounding. Interprets data in a table to solve a subtraction problem. Selects a column graph to match information in a table. Compares volume by reading different scales. Identifies a square pyramid from its net and visualises the opposite faces on the net of a cube.
4	Makes an inference from clearly stated information and identifies the common message in two posters. Makes inferences about a character's actions in a story. Locates information in a longer illustrated factual text.	Writes a story in which characters or setting are briefly described. Correctly punctuates some sentences with both capital letters and full stops. May demonstrate correct use of capitals for names and some other punctuation. Correctly spells most common words.	Correctly spells common two-syllable words (because). Identifies an error, then correctly spells common compound words (overnight). Recognises common grammatical conventions such as the correct use of adjectives and prepositions. Identifies the structure of a question.	Adds 2 two-digit numbers. Uses knowledge of number facts up to 10x10 to determine equal values. Continues a number pattern based on subtraction. Identifies a common 2D shape made when another shape is divided and identifies a prism displayed in an everyday context.
3	Connects clearly stated information from different parts of a text. Makes connections between the words and pictures in a story. Finds clearly stated information in a story and a poster.	Attempts to write a story containing a few related events, although these are usually not elaborated. Correctly orders the words in most simple sentences. May experiment with using complex sentences but with little success. Orders and joins ideas using a few connection words but the links are not always clear or correct.	Spells common two-syllable words with regular spelling patterns. Recognises common grammatical conventions such as the correct use of adverbs and pronouns. Recognises some correct use of punctuation in written English.	Reads time and recognises the position of hands on a clock at the half-hour. Identifies a specific date on a calendar. Identifies the most likely outcome of a simple chance event.

Source: Australia Curriculum and Assessment Reporting Authority 2008.

APPENDIX L.
SUPPORTING RESEARCH AND EVALUATION OF PUBLIC EXAMINATIONS

The Ministry of Education should support a long-term research and evaluation program designed to enhance the quality of the public examination system and the effects of recent innovations. To date the Tests and Examinations Administration Department has conducted inter-rater reliability studies of 2008/09 papers in the Arabic language and pure mathematics. Such a program, which would be independent of the examination system, might evaluate key aspects of the examination system. This program could include the following elements:

■ Establish the amount of time students require to answer the multiple-choice section of each examination.

■ Evaluate the content validity of the grade 12 examinations.

■ Identify aspects of the official curriculum that have been ignored or neglected in the examination process.

■ Evaluate the quality of moderation focusing on tasks/activities, scoring criteria, weighting and teachers' understanding of marking rubrics.

■ Assess cognitive levels tested in the key subject examinations.

■ Compare marking standards and variations across subject areas and across districts for the continuous assessment and written components of the examination.

■ Monitor the effects of the examination on student enrollment and dropout.

■ Evaluate the validity and the educational merits of the student project and the extent to which it represents the student's own efforts.

■ Assess the effectiveness of the written examination and the graduation project as predictors of tertiary level performance.

■ Conduct a study of gender item bias in examination questions.

■ Assess the extent to which school-based assessment is used to give feedback to teachers and students.

APPENDIX M.
COUNTRY EXAMPLES OF USING OBJECTIVE INFORMATION FROM NATIONAL ASSESSMENTS TO IMPROVE CURRICULUM

National and some state assessment findings have been associated with curriculum changes in a number of countries. In Brazil, the findings of a state assessment on how students perform in the major curriculum domains, and the difficulties they exhibit, were used to provide guidance to teachers on their instructional strategies. In Thailand, the poor performance of students in areas of mathematics and science led to greater emphasis in curricula on teaching process skills and the application of knowledge. In Guinea, national assessment results prompted the development of a national reading initiative to promote instruction in the early grades. In Bhutan, a report prepared following the 2003 grade 6 national assessment identified curriculum overload as a problem. A strategic revision of the mathematics syllabus was recommended, as well as a suggestion "...to place less (or no) emphasis on algebra and geometry, or at least not at the level of sophistication currently expected of learners" (Bhutan Board of Examinations, 2004, p. viii). The views of stakeholders in interpreting assessment results can point to the need for curriculum reform. In Ethiopia, for example, feedback from teachers, students and parents was used in conjunction with an analysis of student performance on national assessment tests to reach decisions about curriculum change.

Source: Kellaghan et al. 2009.

APPENDIX N.
EXAMPLES OF RESEARCH AND EVALUATION CENTERS

Table N.1

Educational Research Centre, Ireland

Established	1966
Management	A functionally autonomous unit within a large College of Education. The centre has an informal reporting relationship with the Government Department of Education
Staff	25 (17 researchers, 5 in administrative/support roles but with a research component, 3 involved in the sale and distribution of tests to schools)
Income (based on 2009 figures)	Government Department of Education grant: 50% Funds for particular projects mostly carried out for the department: 33% Sales of tests: 15% Other: 2%
Research and Development Activity	Includes: Evaluations of initiatives and new programs Evaluations of services and existing provision in schools Critical analysis of issues in education Analysis of public examination results National assessments of educational achievement International assessments of educational achievement Development of assessment instruments See overview page of www.erc.ie for elaboration of activities listed.
Outputs	Research reports, conference papers, journal articles, literature reviews, books, book chapters, formulae for resource allocation based on statistical models, tests and other assessment material
Address	Educational Research Centre St Patrick's College Dublin 9 Ireland Phone 00353 1 8373789 Fax 00353 1 8308997 Email info@erc.ie
Website	www.erc.ie

Table N.2

New Zealand Council for Educational Research

Established	1934
Management	Board: Six elected members and one appointed by the Governor General on the recommendation of the Minister of Education
Staff	58 staff of whom 22 are researchers or research assistants; includes a statistics team
Income (based on 2009 figures)	Government: 18% Competitive research contracts: 47% Sales: 25%, includes tests, books and journals, and income from services such as the online marking service for schools. Other: 10%
Research and Development Activity	Includes: Assessment resource banks Assessing adult literacy and numeracy Teaching and learning Competent children Learners longitudinal study Curriculum Educational institutions and educational policy Information and Communications Technology (ICT) Mäori education Secondary transition Gender and career decision making Teachers' work Partnerships in learning between young people Student engagement in learning Building better schools through business partnerships
Outputs	Research reports, conference papers, occasional papers, journal articles, literature reviews, books, book chapters, conference proceedings and classroom resources
Website	http://www.nzcer.org.nz/default.php?cPath=21

APPENDIX O.
TEACHERS AND QUALITY OF EDUCATION

Table O.1
Percentage of Teachers Qualified by Subject, 2008/09

Subject	Grades	Number of Teachers			%
		Upper diploma	Diploma	Total	
Islamic studies	5-12	2,980	-	2,980	7
Arabic	5-12	4,644	-	4,644	11
Chemistry	5-12	1,759	-	1,759	4
Physics	5-12	2,021	-	2,021	5
Biology	5-12	802	-	802	2
Mathematics	5-12	4,428	-	4,428	10
English	1-4	897	623	1,520	
	5-12	4,051	-	4,051	
	Total (1-12)	4,948	623	5,571	13
Physical education/ sports	1-12	1,105	453	1,558	4
Learning difficulties	1-4	390	54	444	
	5-10	56	-	56	
	Total (1-10)	446	54	500	1
1st Field	1-4	2,583	4,013	6,596	15
2nd Field	1-4	2,383	1,509	3,892	9
IT	1-4	370	355	725	
	5-11	1,054	24	1,078	
	Total (1-11)	1,424	379	1,803	4
Fine Arts	1-12	1,094	280	1,374	3
Geography	5-12	1,843	-	1,843	4
History	5-12	1,364	-	1,364	3
Life Skills	1-12	1,843	333	1,176	3
Music skills	1-12	810	122	932	2
Total		**43,243**			**100**

Source: MOE Human Resources database 2009.

Note: The data in this table differs from the data in tables 5.1 and 5.2 because it was obtained from the live MOE Human Resources database at a different time in the year.

Table O.2
Specialist Teachers by Subject and Region, 2008/09 *(%)*

	Mathe-matics	Biology	Chemi-stry	Physics	English	Arabic	Islamic studies
AL-Buraimi	14	3	4	4	13	17	13
AL-Dakhlyah	14	3	5	9	13	14	11
AL-Dhahirah	13	3	4	5	13	15	11
AL-Sharqiah (North)	14	2	5	5	13	14	11
AL-Sharqiah (South)	13	2	5	5	13	14	12
AL-Wusta	13	2	4	5	13	15	11
Batinah (North)	13	2	5	6	13	16	13
Batinah (South)	15	2	5	6	13	15	12
Dhofar	13	2	5	5	12	14	12
Musandam	13	2	6	7	12	13	12
Muscat	14	2	4	5	13	15	13
Total	**14**	**2**	**5**	**6**	**13**	**15**	**12**

Source: MOE Human Resources database 2009.

Figure O.1
Intake to the College of Education at Sultan Qaboos University, 1986 to 2009
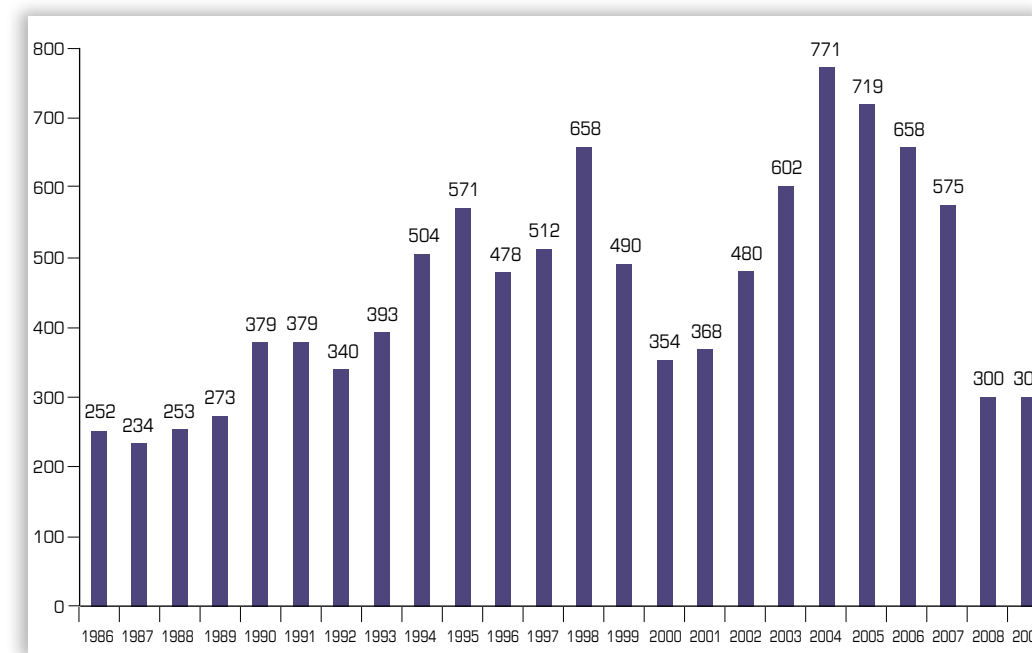
Source: MOE.

Figure 0.2

Frequency Distribution of Student-Teacher Ratios in Schools, 2009
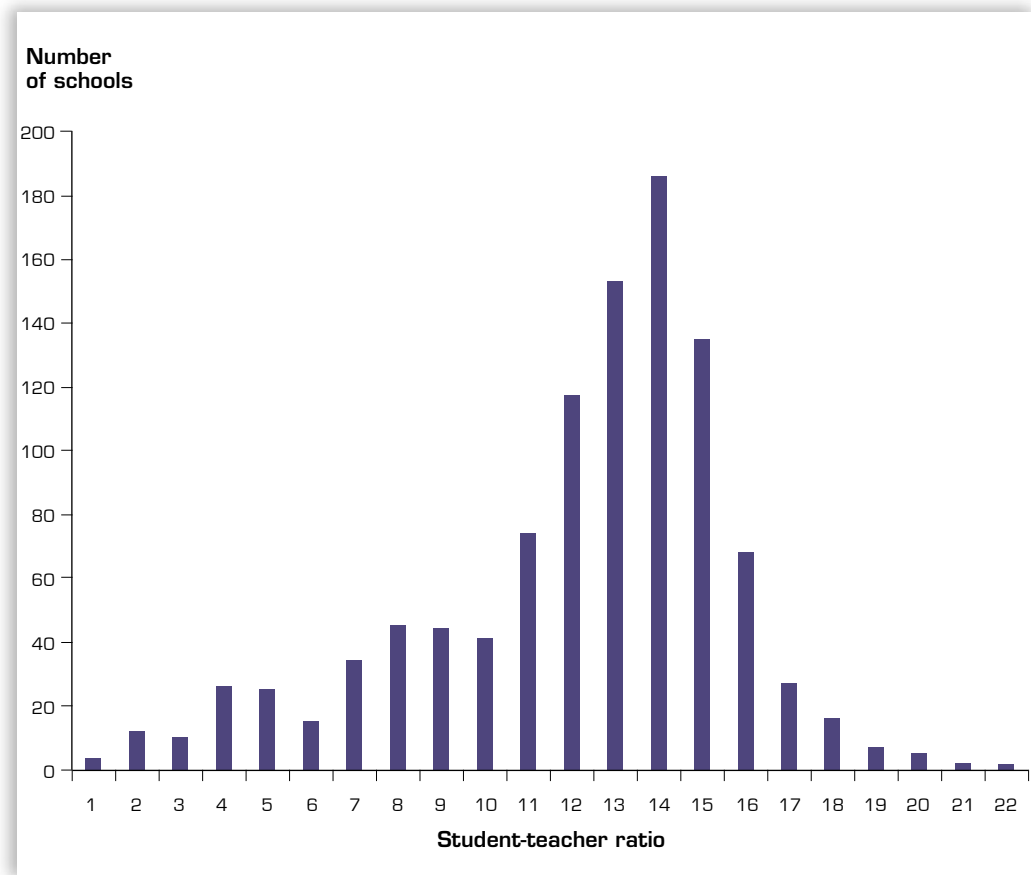
Source: MOE.

Table 0.3

Academic Staff at the College of Education at SQU, 2008/09

Department	Doctoral qualification	Master level	Total
Curriculum and teaching methods of Arabic	4	4	8
Curriculum and teaching methods of English	7	2	9
Curriculum and teaching methods of Islamic	3	0	3
Curriculum and teaching methods of Mathematics	3	0	3
Curriculum and teaching methods of Science	5	1	6
Curriculum and teaching methods of Social Studies	4	2	6
Curriculum and teaching methods of Physical Education	3	0	3
Curriculum and teaching methods of Art Education	2	1	3
Art education	8	6	14
Physical education	8	6	14
Early childhood	4	0	4
Instructional and learning technologies	6	1	7
Educational foundations and administration	14	3	17
Psychology	20	7	27
Islamic Sciences	13	3	16
Total	**104**	**36**	**140**

Source: MOE.

Box 0.1

Components of the Teacher Induction Program: Oman

1. Administrative rules and regulations
2. Teacher roles and responsibilities
3. Teacher work ethics: Employee rights and obligations
4. Teacher guide (from the supervision department)
5. Continuous assessment system
6. School education development
7. Teenagers and how to deal with them
8. Teacher problems and how to deal with them
9. Curriculum content and analysis
10. Classroom activities and evaluation.
11. Preparing educational media (audio visual aids)
12. Televised training pack (viewing recorded exemplary lessons)
13. New teaching methods
14. Classroom activities
15. Relations between the teacher, student and administration
16. Further education opportunities and how to apply for them

Source: MOE.

Table O.4

Average Class Size by Region, 2009

	Cycle one coeducational schools	Girls' schools	Boys' schools	Total
Al-Batinah (North)	26	31	31	29
Al-Batinah (South)	26	31	30	29
Al-Buraimi	21	31	30	26
Al-Dakhiliyah	25	30	30	28
Al-Dhahirah	24	29	27	26
Al-Sharkiyah (North)	26	28	28	27
Al-Sharkiyah (South)	24	29	27	26
Al-Wusta	17	-	23	18
Dhofar	17	29	25	22
Musandam	22	25	24	23
Muscat	27	32	31	30
Total	**24**	**30**	**29**	**27**

Source: MOE.

Table O.5

Average Class Size, International Comparisons, 2006

	Primary education	Lower secondary
WEI average	28.3	34.2
OECD average	21.4	24.1
United Kingdom	24.3	21.0
United States	23.1	24.3
Chile	31.2	31.8
Germany	22.1	24.7

Source: UIS 2006.

Table O.6

Official Instruction Time in Oman, 2009

	Length of period	Periods per week	Days per year	Hours per year
Basic education (grades 1-9)	40	40	180	960
General education	40	35	180	840
Double shift schools (grades 1-6)	35	35	180	735
Post-basic education	45	40	180	1,080

Source: MOE 2009a.

APPENDIX P.
DESCRIPTION OF THE VOCATIONAL TRAINING AND TECHNICAL EDUCATION SYSTEM

Figure P.1

Vocational Training and Technical Education System
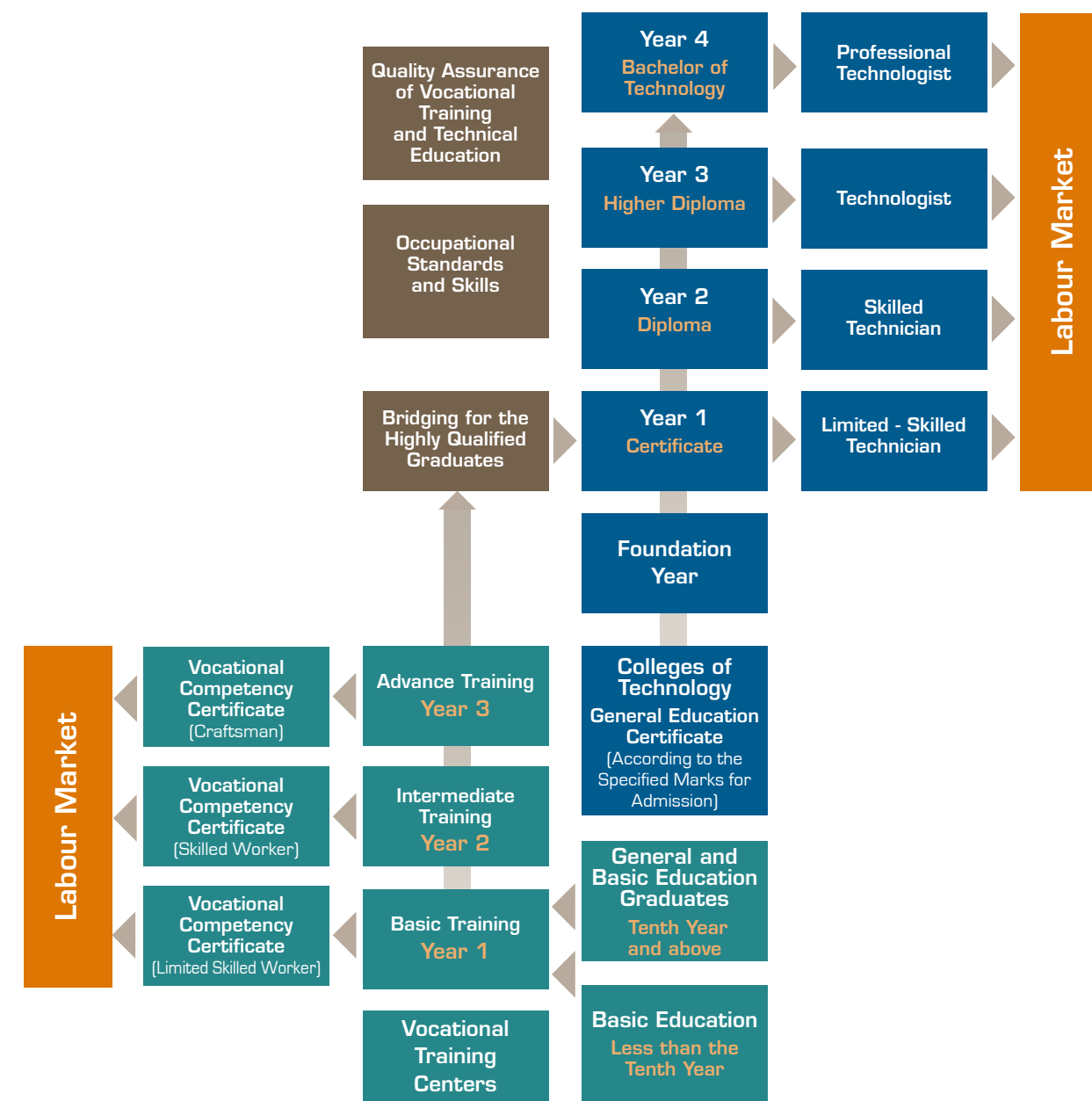
Figure P.1 (continued)

Technical Colleges

Foundation Program

Admission Exam

First Year — Certificate → Enhancement Training → Certificate 6-12 weeks → Labour Maket

GPA 2.25

Second Year (on Job Training 8 Weeks) → Enhancement Training → Diploma 6-12 weeks

GPA 2.5

Third Year (on Job Training 8 Weeks) → Enhancement Training → High Diploma 6-12 weeks

GPA 2.75

Fourth Year (on Job Training 8 Weeks) → Enhancement Training → Bachelor's Degree

APPENDIX Q.
DISTRIBUTION OF HIGHER EDUCATION GRADUATES BY FIELDS OF STUDY

Table Q.1

Distribution of Higher Education Graduates by Fields of Study, Selected Countries, 2006/07 *[%]*

	Oman	Bahrain	Estonia	Korea,Rep.	Lebanon	Malaysia	Mauritius	Saudi Arabia	UAE
	2007	2006	2007	2007	2007	2006	2006	2006	2007
Agriculture	1.0	-	2.1	1.3	0.6	3.9	0.7	0.6	0.1
Education	**40.3**	5.4	10.7	8.3	3.7	11.3	**42.9**	5.5	11.9
Engineering, manufacturing and construction	9.6	10.3	10.6	**26.4**	13.3	**28.4**	11.9	7.1	9.4
Health	8.2	9.4	10.9	12.3	11.9	3.7	-	7.1	5.1
Humanities and arts	5.9	9.1	10.4	18.2	12.6	11.4	15.9	**33.6**	13.4
Science	11.8	7.6	10.5	7.4	9.9	16.7	6.8	24.6	23.4
Services	-	5.0	8.9	6.1	1.4	2.3	-	-	1.2
Social science, business, law	17.0	**41.4**	35.8	19.9	46.6	22.2	21.8	17.8	**35.4**
Unknown or unspecified fields	6.2	11.8	-	-	0.0	0.0	-	3.7	-
Total	100	100	100	100	100	100	100	100	100

Source: UIS.

APPENDIX R.
LABOR MARKETS: ACTIVITY RATES
AND LABOR PRODUCTIVITY

Table R.1

Economic Activity Rates 15+ years, by Gender in Selected Countries, Various Years
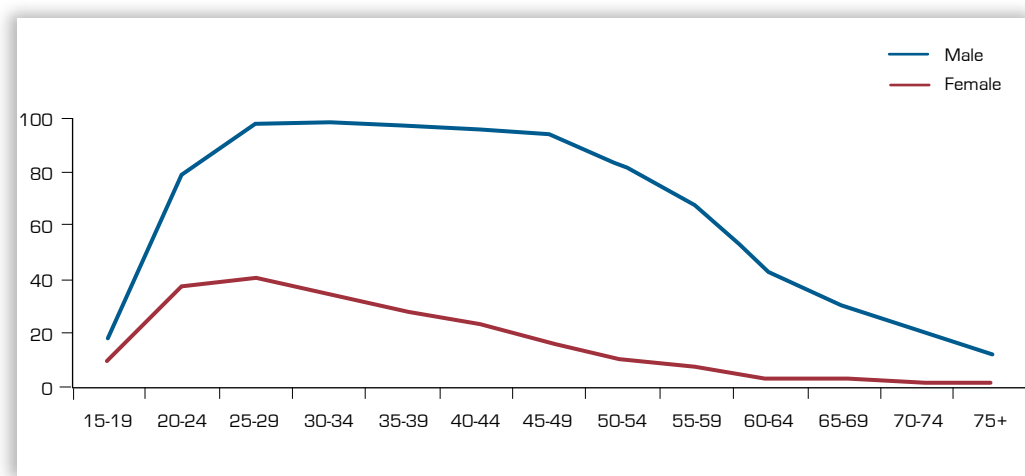*(% and ratio)*

	Total	Men	Women	Men/ Women
OMAN (2003)	**55.3**	**76.9**	**24.6**	**3**
Bahrain (2001)	65.7	86.0	35.5	2
Estonia (2000)	56.4	64.4	49.9	1
Iran (2005)	46.6	73.8	19.2	4
Hong Kong (2003)	61.4	72.0	51.6	1
Korea (2003)	61.4	74.6	48.9	2
Lebanon (2004)	44.0	68.9	20.4	3
Mauritius (2004)	58.2	77.4	39.7	2
Turkey (2003)	48.3	70.4	26.6	3
UAE (2005)	77.5	92.7	37.8	2

Source: LABORSTA.

Note: Data for Oman excludes armed forces.

Table R.2

Sectoral Share of Labor Force/Sectoral Share of GDP in Selected Countries, Various Years

	Oman (2003)	Estonia (2003)	Hong Kong (2004)	Korea (2004)	Mauritius (2004)	Singapore (2003)	Turkey (2003)	UAE (2005)
Agriculture	4.2	-	-	2.7	1.7	-	2.6	2.2
Industry	0.5	1.1	1.3	0.7	1.1	0.7	1.1	0.7
Services	1.3	0.4	1.0	0.1	0.1	1.1	0.7	0.1

Source: Authors' calculations based on LABORSTA and World Bank data bases.

Figure R.1

Economic Activity Rates for Males and Females 15+ Years by Age Groups, Oman, 2003 *(%)*

Source: LABORSTA, based on Population Census 2000.

APPENDIX S.
EDUCATIONAL LEVEL OF THE LABOR FORCE

Table S.1
Labor Force (15+ Years) by Level of Educational Attainment in Selected Countries, Circa 2000
(% of total)

Country	Year	Less than 1 year of schooling	Primary education	Secondary education	Tertiary education
Estonia	2000	1	12	46	41
Singapore	2000	13	25	25	37
Korea, Rep.	2000	0	33	44	24
Hong Kong	2002	1	33	45	21
Qatar	2004	38	24	19	19
Kuwait	2003	32	25	26	17
United Arab Emirates	2005	25	29	29	17
OMAN	**2000**	**26**	**35**	**25**	**14**
Turkey	2000	0	71	19	10

Source: ILO on EdStats (January 2011).
Note: Oman figures include Omani nationals only.

Figure S.1
**Labor Force aged 25–29 with Completed Tertiary Education in Selected Countries,
Various Years** *(%)*
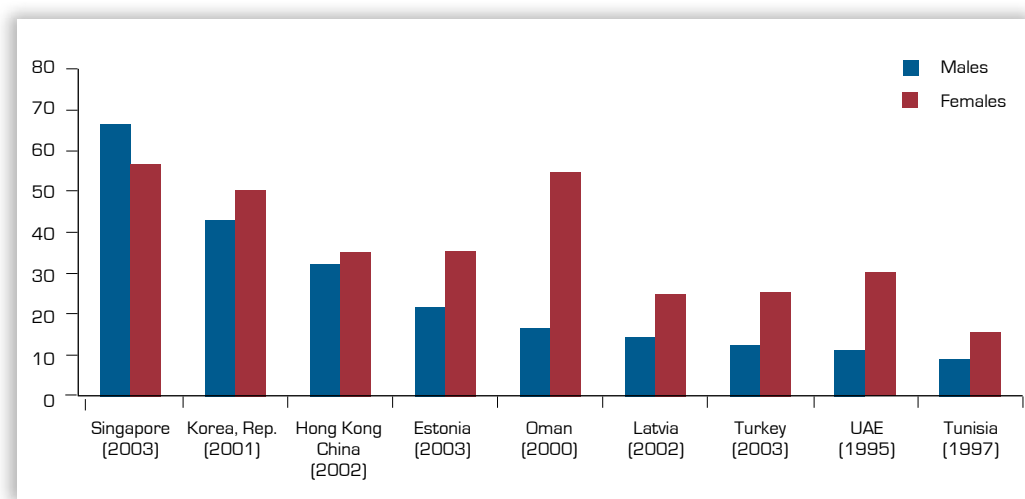
Source: Source: ILO.

APPENDIX T.
UNIVERSITY INTERNATIONAL RANKINGS

Table T.1
Number of Universities Ranked among the Top 500 in Selected Countries

	QS-Time (top 500)	Webometrics 2010 (top 500)	ARWU 2009 (top 500)
Hong Kong	4	5	0
Iran	1	-	1
Korea	10	4	9
Malaysia	4	-	0
Saudi Arabia	2	3	1
Singapore	2	2	2
Taiwan	8	11	-
Thailand	4	5	0
Turkey	4	1	1

Source: QS-Time (http://www.topuniversities.com/university-rankings/world-university-rankings/2009/results);
Webometrics (http://www.webometrics.info/) and ARWU (http://www.arwu.org/ARWU2009.jsp).
Note: Taiwan is not included in the ARWU ranking.

Table T.2

Top Arab World Universities

Continent Rank	University	Country	World Rank
1	King Saud University	Saudi Arabia	199
2	King Fahd University of Petroleum & Minerals	Saudi Arabia	404
3	King Abdulaziz University	Saudi Arabia	496
4	Imam Muhammad bin Saud University	Saudi Arabia	835
5	Umm Al-Qura University	Saudi Arabia	1,050
6	American University of Beirut	Lebanon	1,361
7	Cairo University	Egypt	1,387
8	King Faisal University	Saudi Arabia	1,527
9	American University in Cairo	Egypt	1,614
10	An-Najah National University	Palestine	1,616
11	Kuwait University	Kuwait	1,691
12	Ain Shams University	Egypt	1,713
13	United Arab Emirates University	U.A.E.	1,736
14	Qatar University	Qatar	1,886
15	King Khalid University	Saudi Arabia	2,227
16	Birzeit University	Palestine	2,255
17	Higher Colleges of Technology	U.A.E.	2,269
18	Najran University	Saudi Arabia	2,297
19	Sultan Qaboos University	**Oman**	**2,407**
20	Al Quds University the Arab University in Jerusalem	Palestine	2,561

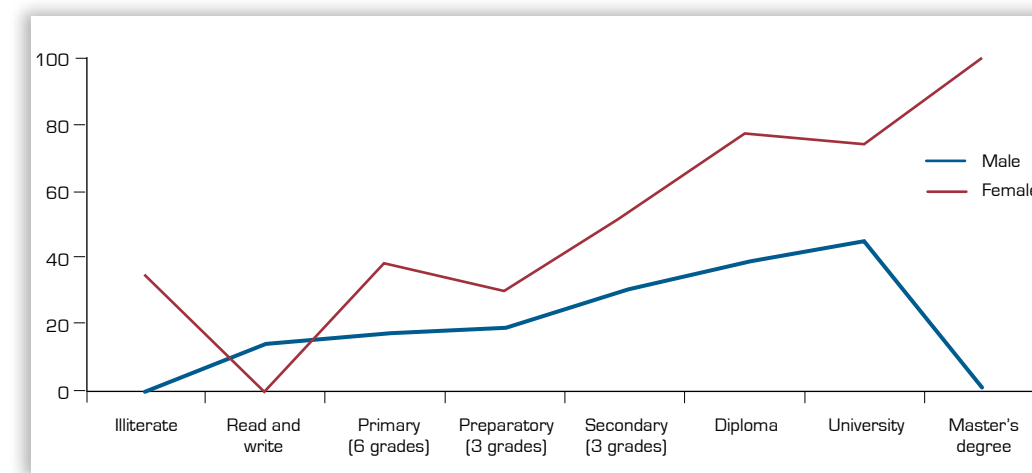Source: Webometrics [http://www.webometrics.info/].

APPENDIX U.
JOB SEEKERS' EXPECTATIONS

Figure U.1

Percentage of Job Seekers (15 years and over) Who Have Never Worked Before and Have Attended a Short-term Vocational Training
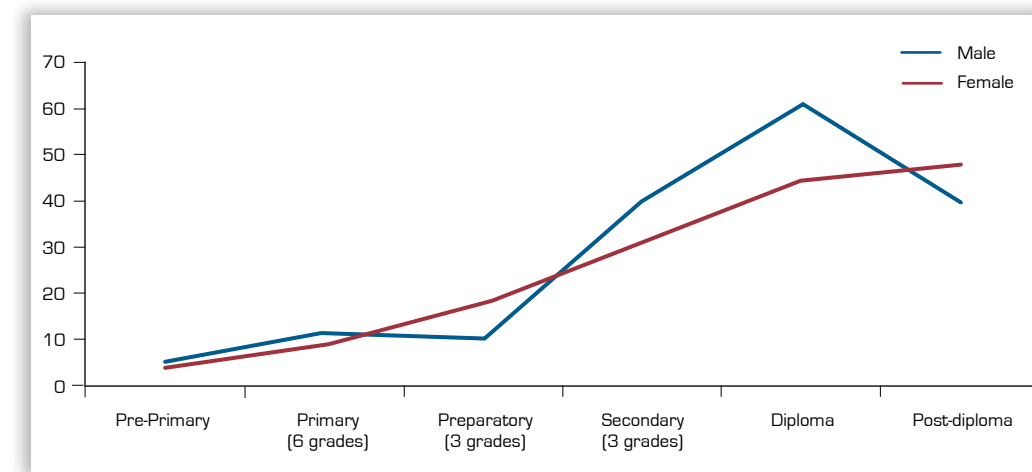
Source: LFS 2008.

Figure U.2

Proportion of Job Seekers Looking for a Desk Job by Level of Education, 2008

Source: LFS 2008.

APPENDIX V.
METACOGNITIVE SKILLS

The following abilities are metacognitive skills:

- Integrate formal and informal learning, declarative knowledge and procedural knowledge.

- Access, select and evaluate knowledge in an information-soaked world.

- Develop and apply forms of intelligence beyond strictly cognitive processes.

- Work and learn effectively in teams.

- Face, transform and peacefully resolve conflict.

- Create, transpose and transfer knowledge.

- Deal with ambiguous situations and unpredictable problems.

Source: Adapted from World Bank 2005.

APPENDIX W.
COST OF GRADUATION

Table W.1

Cost of Graduation, 2008

Grade	1	2	3	4	5	6	7	8	9	10	11	12	Total
Total enrollment	43,943	44,256	43,971	43,786	45,695	49,756	51,983	52,729	52,269	53,856	49,598	46,659	578,501
Repeaters	0	0	0	0	2,680	1,695	1,704	1,179	835	2,790	1,862	528	13,273
Total enrollment net of repeaters	43,943	44,256	43,971	43,786	43,015	48,061	50,279	51,550	51,434	51,066	47,736	46,131	565,228
Unit cost (RO)	1,137	1,137	1,137	1,137	1,137	1,137	1,227	1,227	1,227	1,697	1,697	1,697	15,594
Cost for total enrollments (RO mn)	50.0	50.3	50.0	49.8	52.0	56.6	63.8	64.7	64.1	91.4	84.2	79.2	755.9
Cost without repeaters	50.0	50.3	50.0	49.8	48.9	54.6	61.7	63.3	63.1	86.7	81.0	78.3	737.6
Difference (RO mn)	0.0	0.0	0.0	0.0	3.0	1.9	2.1	1.4	1.0	4.7	3.2	0.9	18.3
Difference (US$ mn)	0.0	0.0	0.0	0.0	7.9	5.0	5.4	3.8	2.7	12.3	8.2	2.3	47.6

Source: Authors' calculations based on MOE 2008c and 2009a.

APPENDIX X.
STAFF RATIOS BY REGION

Table X.1
Staff Ratios by Region, 2008/09

	Students per Teacher	Students per Administrator	Students per Class	Teachers per Class	Adminstrators per School
Muscat	13.8	7.0	30.0	2.2	6.6
Al-Batinah (North)	13.6	7.0	29.2	2.1	6.6
Al-Batinah (South)	13.6	7.2	28.8	2.1	6.4
Al-Dakhliyah	13.0	6.8	28.1	2.2	6.4
Al-Sharkiyah (South)	11.6	7.0	26.2	2.3	6.1
Al-Sharkiyah (North)	12.7	6.5	27.4	2.1	6.3
Al-Buraimy	11.3	7.1	26.2	2.3	5.7
Al-Dhahirah	11.3	6.1	26.2	2.3	6.1
Dhofar	9.7	5.8	21.7	2.2	5.0
Al-Wusta	7.5	6.9	17.8	2.4	4.7
Musandam	9.4	6.8	23.5	2.5	4.9
Total	**12.5**	**6.7**	**27.5**	**2.2**	**6.1**

Source: MOE 2009a.

APPENDIX Y.
DISTRIBUTION OF CIVIL SERVICE EMPLOYEES BY GRADE

Table Y.1
Distribution of Civil Service Employees by Grade, 2007

	Grade						
	A-E, Special Grade	1, 2, and 3	4, 5 and 6	7	10, 11 and 12	13 and 14	Total
Ministry of Education	103	6,473	43,084	2,280	886	4,454	57,280
Percentage (%)	0.2	11.3	75.2	4.0	1.5	7.8	100
Ministry of Health	1,263	1,676	7,145	5,078	6,265	1,387	22,814
Percentage (%)	5.5	7.3	21.3	22.3	27.5	6.1	100
All Civil Servants	2,392	6,667	16,398	7,951	15,973	7,963	57,344
Percentage (%)	4.2	11.6	28.6	13.9	27.9	13.9	100

Source: MONE 2008.

APPENDIX Z.
SHARE OF SELECTED EXPENDITURE ITEMS
IN TOTAL HOUSEHOLD BUDGET BY
EDUCATION STATUS OF HOUSEHOLD HEAD

Figure Z.1

**Share of Selected Expenditure Items in Total Household Budget
by Education Status of Household Head, 2007/08** *(%)*
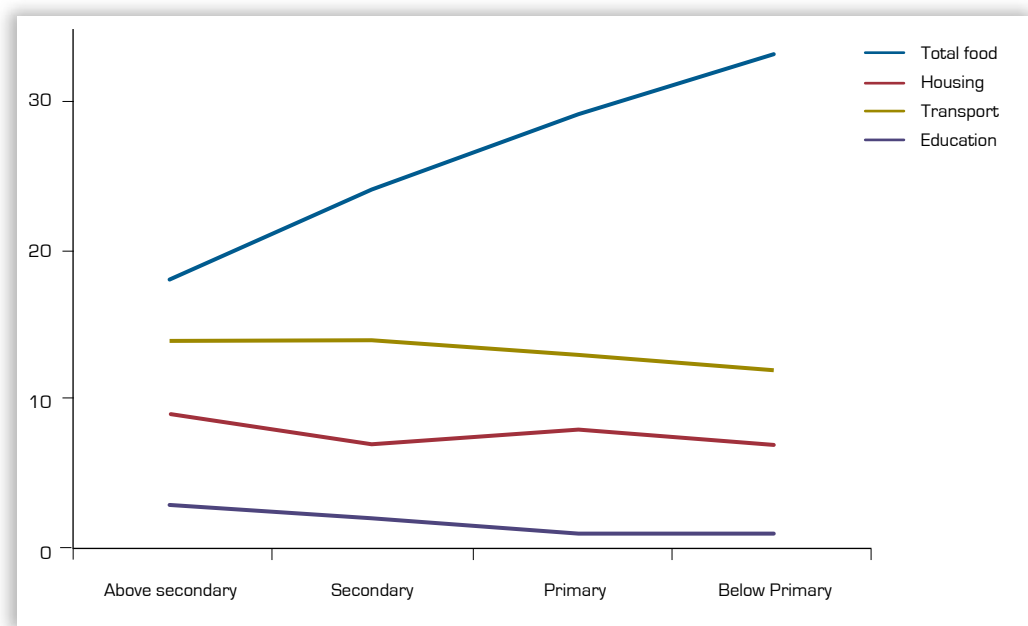
Source: Authors, based on Income and Expenditures Survey.

APPENDIX AA.
A GOVERNANCE OF EDUCATION FRAMEWORK

Good governance and management in education encompasses multiple dimensions. The concept is likely to take on somewhat different meanings in different political and cultural contexts. It generally includes the capacity of the ministry of education to formulate sound educational policies; allocate and ensure the efficient use of resources to provide good quality educational services; develop effective business processes that allow parents and stakeholders to monitor educational delivery; hold providers accountable; and ensure the acceptance and respect of citizens for the institutions that provide the educational services.

Effective governance in education requires enabling conditions: the existence of standards, information on performance, incentives for good performance and accountability. Education policies refer to all the guiding policies concerning the organization, level and methods of funding, and delivery of education services in the country, which are approved by parliament, adopted by Government, and used by the Ministry of Education to guide the processes of education service delivery. Education management processes and practices refer to the processes and practices designed to achieve the objectives set for various levels of the education system. It involves assigning responsibilities to all stakeholders in the system, defining how the various subsystems communicate with each other, and articulating how performance is evaluated and monitored

A diagram outlining the key players in an education system and the relationship among them is outlined in figure AA.1

Figure AA.1

A Governance of Education Framework

A= Accountability,
M= Management Processes
     & Practices
P= Education Policies
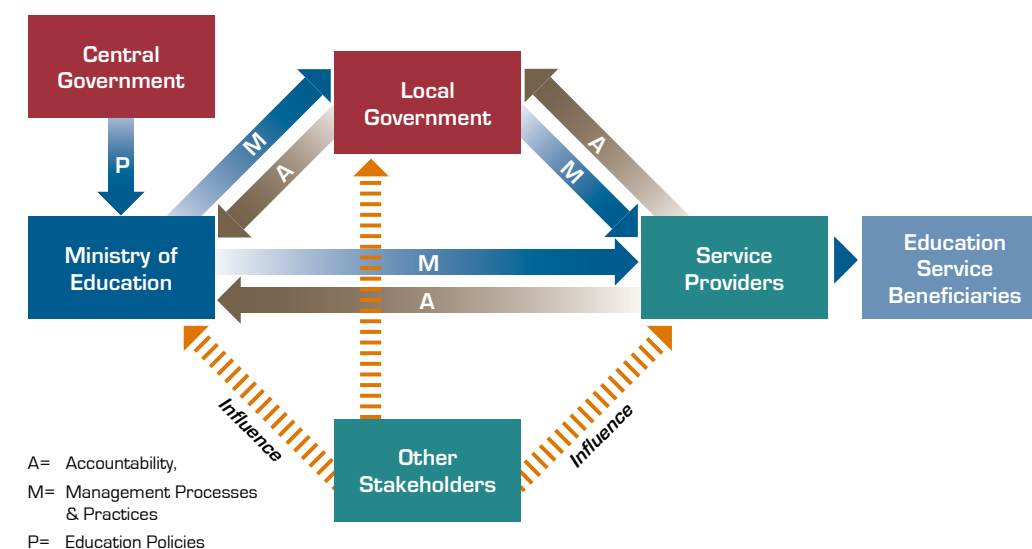
Source: Authors.

Good governance in education requires accurate system-level information. This might be reflected in clear definitions of system outputs and outcomes and its constituents combined with accurate data on performance and results collected at regular intervals. Such information enables managers to monitor and reward good performance and to impose sanctions when specified standards are not

met. Ideally it should include standards, transparent and publicly known criteria and/or benchmarks used to assess and inform education policy, service provision and performance. Some schools systems consider incentives as a key aspect of good governance. These are normally positive (or negative) financial or nonfinancial rewards (such as status, recognition or promotion) that motivate a specific type of behavior or action. Positive incentives usually encourage a certain desired behavior, while negative incentives tend to deter it. In more recent years some education systems, for example in Chile, England and parts of the United States, associate good governance with accountability. This approach, which has aroused considerable debate (Ravitch 2010), usually involves holding public officials and service providers including teachers, principals and schools answerable for outcomes defined by the standards and imposing sanctions if such outputs and outcomes are not delivered.

APPENDIX AB.
THE NATIONAL EDUCATION COMMISSION (NEC) OF SRI LANKA

The National Education Commission of Sri Lanka was established under the National Education Commission act No. 19. of 1991 to make recommendations to the President on educational policy in all its aspects with a view to ensuring continuity in educational policy and enabling the education system to respond to changing needs in society.

Vision

Supporting the development of a comprehensive national policy framework for a sound education for all, ensuring fairness and adaptability for maintaining Sri Lankan identity.

Mandate

Deliberate on National Education Policy and make recommendations ensuring continuity in all segments of the education system in the context of changing needs of Sri Lanka. A Comprehensive National Education Policy includes the following matters:

Aims and goals of education; the structure of the educational system: preschool, primary, secondary, tertiary, higher, technical, vocational, informal, nonformal, adult, special, professional and religious;

Establishment, location and distribution of educational institutions, including methods and criteria for admission of students and recruitment of teachers; content of education, including medium of instruction, diversification of curricula, text books and learning materials, the place of religious knowledge, observance and practice, assessment and evaluation;

Monitoring of the examination system, certificates, diplomas and academic awards and recognition of qualification; recruitment, placement, disciplinary control and professional growth of education service personnel, including teachers, paraeducation personnel, supervisors and administrators;

Mobilization of resources for education, including the mobilization of community participation and ancillary services for education, such as midday meals, health and dental services, physical education and sports.

Function

Make recommendations to the President on educational policy in all its aspects with a view to ensuring continuity in educational policy and enabling the education system to respond to changing needs in society, including an immediate review of educational policy and plan or plans and the making of recommendations to the President on a comprehensive National Education Policy.

Review and analyze periodically the National Education Policy and plan or plans in operation and where necessary recommend to the President changes in such policy, plan or plans.

Advise the President on any other matter relating to education, which may be referred to NEC by the President for NEC's advice.

Source: http://www.nec.gov.lk.

APPENDIX AC.
A FRAMEWORK FOR EDUCATION POLICY
DEVELOPMENT AND IMPLEMENTATION

A structured framework for education policy development and implementation is a logical systematic approach to policy development that helps ensure that the policies identified have been selected through a rigorous process and subjected to careful scrutiny using a comparative framework based on evidence-based criteria and indicators. The framework, outlined in Figure AC.1, involves the following four phases:

Policy Selection: This phase involves the following elements:

- Preliminary formation of the policy development team
- Identification of the policy domain and its dimensions
- Identification of all relevant stakeholders and their interest in the policy
- Development of a preliminary comparative framework for analysis of policy options that includes tools, such as cost-benefit analysis, SWOT Analysis (Strengths, Weaknesses, Opportunities, and Threats) and results-based analysis
- Holding of stakeholders conference to identify possible policy options
- Optimizations of the comparative framework
- Application of the comparative framework to the policy options
- Selection of the "best" policy option

Policy Planning: This phase will involve the development of a comprehensive plan for the implementation of the selected policy. The plan development will utilize accepted project management methodologies to define the policy plan and will include the following components:

- Policy scope and decomposition
- Policy implementation phases, sequencing and scheduling
- Resource allocation and optimization
- Cost estimating and budgeting
- Five-year base line
- Risk assessment and management plan
- Resource acquisition and procurement plan
- Quality assurance plan
- Communication plan

Figure AC.1

A Policy Development and Implementation Framework
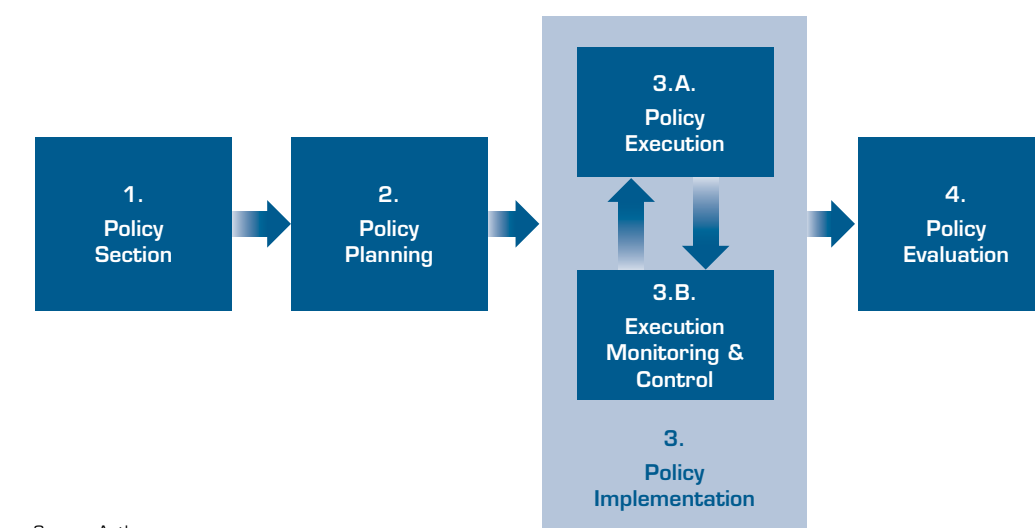
Source: Authors.

Policy Implementation: The policy implementation plan involves two major components being implemented interactively: policy execution and monitoring and control. The first involves the allocation of all the resources (financial, human, physical and knowledge resources) to execute the various programs and activities defined in the policy plan. This is obviously the most difficult phase of the process and requires considerable capacity and experience in managing projects and similar initiatives. The execution monitoring and control involves the application of methodologies to monitor the progress of policy execution against the policy plan, assess the "gap" between the planned and implemented or earned effort and take corrective actions to close the gap. These two components of the policy implementation are interdependent, and their execution requires considerable experience in policy implementation, but it is also critically dependent on starting with a realistic policy plan.

Evaluation of Policy Implementation: At the designated end of the policy implementation period (often five years in education, as is the case in Oman), an evaluation of the outcome and impact of the policy is undertaken by both an internal, as well as, by an external entity to ensure that an independent, unbiased and evidence-based perspective is provided to all stakeholders that can inform decision making about the future of the policy. The evaluation also contributes to the development of the collective knowledge base and a databank of good practices in education.

APPENDIX AD.
SCHOOL-BASED MANAGEMENT

School Based Management (SBM) involves the decentralization of authority from central government to the level of school districts and individual schools.

It is a form of decentralization that recognizes the school as the primary entity of decision making in education. It shifts the decision-making authority over school operations to the principals, teachers, parents and other community stakeholders. This shift is typically achieved through the formation of school committees, management committees and school councils. In general the adoption of SBM results in the transfer of some level of authority from the central or local bodies to school actors over one or more of the following: (1) budget allocation and control, (2) hiring and firing of teachers and school staff, (3) monitoring, evaluation and promotion of teachers, (4) monitoring of student learning outcomes, (5) curriculum development and review, (6) procurement of textbooks and other educational resources, and (7) infrastructure refurbishment.

Views on the effectiveness of SBM vary. Proponents of SBM argue that it (1) facilitates education as service, (2) improves students' achievement, (3) promotes performance and accountability, and (4) promotes transparency, and reduces corruption and poor practice. SBM's perceived weaknesses include (1) loss of clearly understood authority and changes in power dynamics, (2) potential for abuse of power by new stakeholders, and (3) changes in teachers' roles, responsibilities and workload.

The Domains of School Leaders Responsibilities

Research has shown that school leaders can make a difference in school if they are granted autonomy to make important decisions. However, autonomy alone does not automatically lead to improvements unless it is well supported. In addition, it is important that the core responsibilities of school leaders be clearly defined and delimited. School leadership responsibilities should be defined through an understanding of the practices most likely to improve teaching and learning.

The domains of school leaders' responsibilities include the following:

- **Supporting, evaluating and developing teacher quality:** School leaders have to be able to adapt the teaching program to local needs, promote teamwork among teachers and engage in teacher monitoring, evaluation and professional development.

- **Goal setting, assessment and accountability:** Policy makers need to ensure that school leaders have discretion in setting strategic direction and optimize their capacity to develop school plans and goals and monitor progress, using data to improve practice.

- **Strategic financial and human resource management:** Policy makers can enhance the financial management skills of school leadership teams by providing training to school leaders, establishing the role of a financial manager within the leadership team or providing financial support services to schools. In addition, school leaders should be able to influence teacher recruitment decisions to improve the match between candidates and their school's needs.

- **Collaborating with other schools:** This new leadership dimension needs to be recognized as a specific role for school leaders. It can bring benefits to school systems as a whole rather than just the students of a single school. But school leaders need to develop their skills to become involved in matters beyond their school borders.

A survey of SBM projects in fifteen countries in Latin America, USA, Australia, New Zealand, and Africa identified and prioritized 17 distinct functions based on frequency of occurrence (figure AD.1).

The most frequent SBM-related activities were (1) the procurement of school educational materials and supplies, (2) the hiring and firing of teachers, (3) school budget oversight, (4) school's administrative activities, and (5) maintenance of school buildings. On the other hand, the five least frequently cited were (1) establishing school fees, (2) establishing school calendar, (3) setting classroom hours, (4) funding teacher training, and (5) changing methods of instructions.

Figure AD.1

Occurrence of School Council Functions in 15 SBM Projects *(%)*
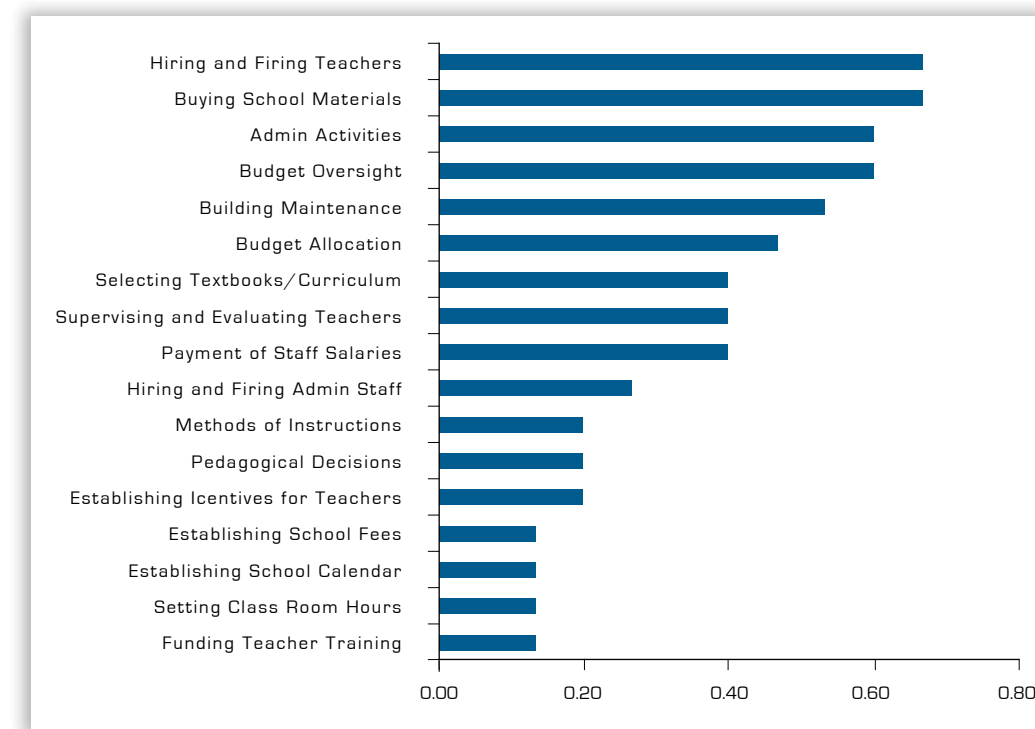
Source: World Bank 2008a.

APPENDIX AE.
FRAMEWORKS FOR STRATEGIC PLANNING
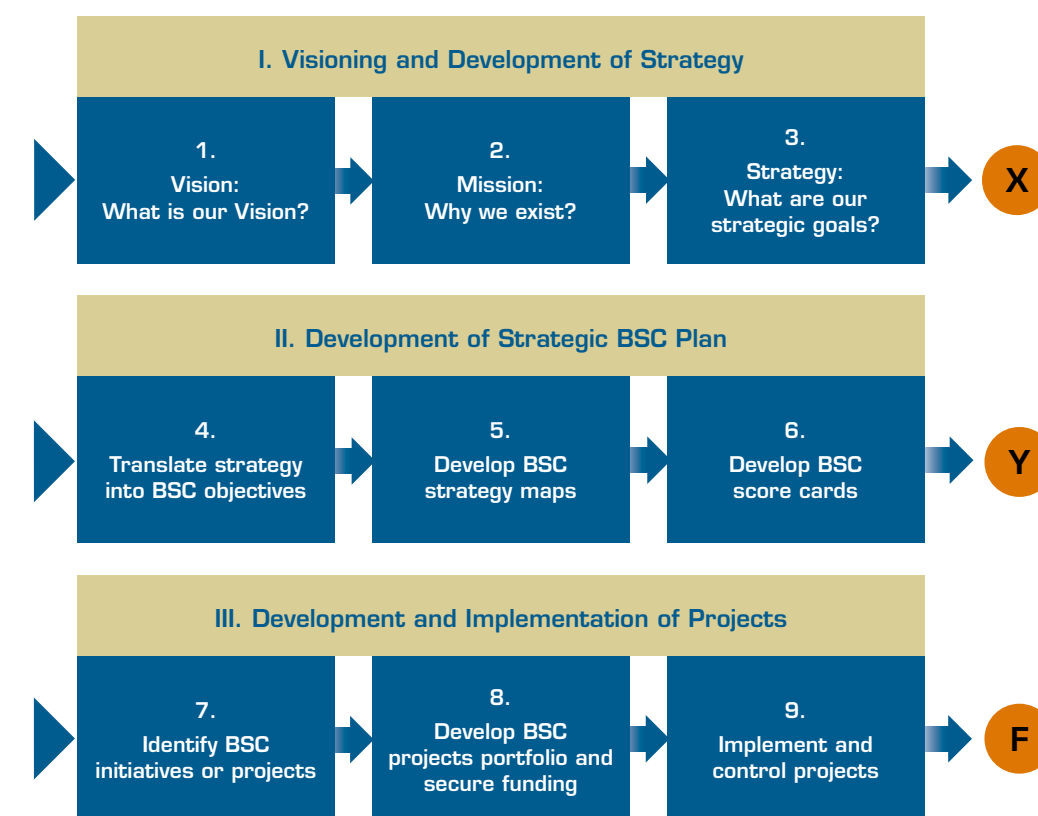# AND BUSINESS PROCESS MANAGEMENT

A) Strategic planning: The Balanced Score Card (BSC)

The Balanced Score Card (BSC) is one of a number of business-related approaches to facilitate strategic planning. The BSC methodology, originally introduced at Harvard University in the early 1990s to assess the performance of private sector enterprises in the implementation of their strategic plans, has been modified and adopted widely by public sector organizations in education, health care, transportation and other vital public sector services. For every strategic goal of an organization, the BSC framework identifies enabling objectives, measurable indicators, target for indicators and associated initiatives (projects) along four interrelated perspectives: (1) the stakeholders' perspective, (2) the internal business processes perspective, (3) the resources perspective, and (4) the financial perspective. The BSC approach allows organizations, such as a Ministry of Education, to translate a five-year strategic plan into a portfolio of relevant interrelated projects with clearly defined objectives and targets. The typical methodology for translating the strategic goals of an organization like the MOE into BSC measurable objectives and related portfolio of projects is outlined in Kaplan and Norton (1996).
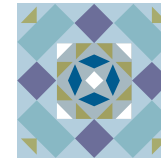
B) Business Process Management (BPM)

BPM is a management approach focused on aligning all aspects of an organization with the wants and needs of its stakeholders. It is a holistic approach that promotes effectiveness and efficiency while striving for innovation, flexibility, and integration with technology. Business process management attempts to improve processes continuously. It is argued that BPM enables organizations to be more efficient, more effective and more capable of change than a functionally focused, traditional hierarchical management approach. BPM helps organizations respond to changing stakeholders' needs and demands quickly and effectively. It also allows organizations to (1) baseline the process or the process improvement, (2) simulate the change to the process, (3) compare the various simulations to determine an optimal improvement, (4) select and implement the optimum improvement plan, and (5) monitor the improvement in real time and feed the performance information back into the simulation model in preparation for the next improvement iteration. Figure AE.1 presents an outline of the BPM approach.

Methodology for Translating Strategic Goals into a Portfolio of Projects

I. Visioning and Development of Strategy

1. Vision: What is our Vision?
2. Mission: Why we exist?
3. Strategy: What are our strategic goals? → X

II. Development of Strategic BSC Plan

4. Translate strategy into BSC objectives
5. Develop BSC strategy maps
6. Develop BSC score cards → Y

III. Development and Implementation of Projects

7. Identify BSC initiatives or projects
8. Develop BSC projects portfolio and secure funding
9. Implement and control projects → F

Source: Authors.

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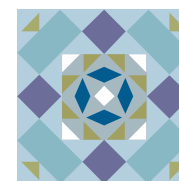
Education in Oman

The Drive for Quality

In 1970 school enrollments in the Sultanate of Oman numbered 900; today there are over 600,000 students in the country's schools. The dramatic growth in education participation rates over the last forty years has meant that, in terms of both access to and completion of education, the levels in Oman compare favorably with other countries in the Middle East and North Africa (MENA) region. The focus of the Government has now shifted from concerns about access to education, towards improving the quality and relevance of teaching and learning. The center-pieces of its reforms have been the introduction of new basic education (grades 1–10) and post-basic education (grades 11–12) systems. Among the main tasks ahead towards reaching the goal of improved education quality are to establish a culture of high standards and to develop the pedagogical capacity of the teaching force.

Aimed at policy makers and practitioners, this report draws on evidence and information from a wide variety of sources to explore the current status of the Sultanate of Oman's pre-tertiary education sector. Prepared in collaboration with the Sultanate's Ministry of Education, the report examines aspects of access to education, quality of learning, teachers and teaching methods, relevance of education to the labor market, and the financing and management of the education system. The report makes a number of recommendations for the future improvement and development of the Sultanate's education sector.