

EDUCATING
THE NEXT
GENERATION
OF EMIRATIS:

A MASTER PLAN
FOR UAE HIGHER
EDUCATION



UNITED ARAB EMIRATES
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
OFFICE OF HIGHER EDUCATION POLICY AND PLANNING



H.H. Sheikh Khalifa Bin Zayed Bin Sultan Al Nahayan
President of the United Arab Emirates



H.E. Sheikh Nahayan Mubarak Al Nahayan
Minister of Higher Education and Scientific Research

Foreword

I am pleased to introduce the new Master Plan for higher education: "Educating the Next Generation of Emiratis." It expresses a vision for higher education and the nation's future that emphasizes excellence and opportunity. This Master Plan builds on the fine work of earlier planning groups and on the country's impressive achievements in higher education. It envisions a world-class higher education system that will prepare our citizens for social and economic leadership and for informed and intelligent personal lives.

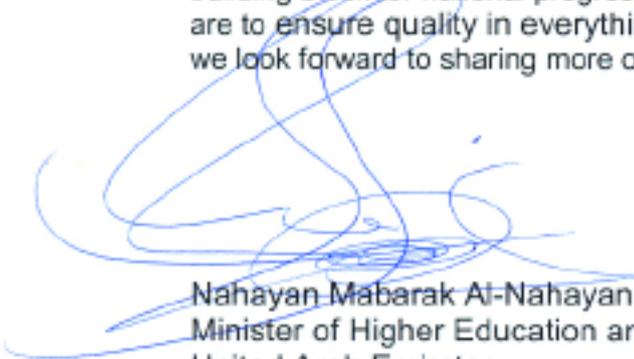
I am committed to a future for our colleges and universities that enables all qualified national students to enroll in outstanding programs that will prepare them to meet the requirements of the labor market and to participate actively in national development while they lead satisfying personal lives. I am equally committed to higher education that conducts useful and relevant research and enhances the cultural and intellectual life in the country. The true test of our success is how well our students understand the place of the UAE in the world and how well the United Arab Emirates itself competes and cooperates in the global community.

To achieve the vision set forth in "Educating the Next Generation of Emiratis," we must address a number of issues:

- We must assure that our programs satisfy demanding international standards.
- We must assure that we appoint highly accomplished faculty.
- We must provide students with every opportunity to learn well.
- We must accommodate significant enrollment increases.
- We must at the same time sustain and improve the quality of our programs.
- We must develop strong and extensive continuing education.
- We must build strong research programs to serve the country.
- We must meet the challenge of financing our ambitious plans.

This Master Plan sets out a broad vision for the future of federal higher education in the UAE that should inspire every national citizen. We are confident that under the wise leadership of the President, His Highness Sheikh Khalifa bin Zayed al Nahayan, we will meet the challenges and fulfill our vision.

We are justly proud of our accomplishments in higher education and its role as a critical building block for national progress. And yet, we know that more is required of us if we are to ensure quality in everything we do. This is tremendously exciting work, and we look forward to sharing more of our plans with you in the future.



Nahayan Mabarak Al-Nahayan
Minister of Higher Education and Scientific Research
United Arab Emirates

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"The wealth of any nation is its intellectuals and the progress of peoples and nations is judged by the level and extent of education they reach."

HIS HIGHNESS SHEIKH ZAYED BIN SULTAN AL-NAHYAN

STRATEGIC DIRECTIONS

The United Arab Emirates (UAE) higher education system through the Ministry of Higher Education and Scientific Research, and the campuses of the United Arab Emirates University (UAEU), the Higher Colleges of Technology (HCT), and Zayed University (ZU), has accomplished a great deal and has a sound foundation as it enters its fourth decade, but serious challenges now exist in financing higher education, providing access for all Emiratis, and contributing to moving the economy forward.

UAE HIGHER EDUCATION HAS MANY STRENGTHS: The UAE has succeeded in building adequate public facilities, having quality faculty, providing quality programs, admitting men and women, providing scholarships, expanding campuses, serving Emiratis, and gaining a regional and international reputation.

YET, UAE HIGHER EDUCATION FACES CHALLENGES: The UAE has not succeeded in providing funding needed to meet growing student enrollment or maintain per student support at international levels of quality. Additional funding, new programs and instructional space are needed for the future in order to meet the goals of social and economic progress for Emiratis.

NEAR-TERM RESPONSES: An urgent priority is to secure funding for student access to college. A second priority is to preserve quality education. In the near term, without new funding, in order to maintain the quality of instruction, total enrollment will need to be capped. This will result in students being turned away and programs being discontinued as new ones are added. Also, new technology must be adopted to sustain current capacity.

UAE COMMITMENT TO HIGHER EDUCATION: Maintaining the UAE commitment to offer Emiratis a place in a higher education system that reflects UAE values is part of the social fabric of the nation. This is linked with the need to provide the educated workforce of the future to expand and diversify the growing economy of the country and employ more Nationals in the private sector.

STRATEGIC GOALS FOR THE FUTURE: The higher education system must establish national policies, build on its strong foundations and expand access for students to quality institutions. Over the long term, to enrich the quality of life in the UAE, the nation must prepare for substantial growth in the number of college-age, 18-year-old citizens. The college-age population will experience moderate growth over the next five years and then significant enrollment pressure will begin in 2016 as total campus enrollment grows toward 50,000 students. Decisions must be made now to invest in and fund higher education to preserve the quality of the federal institutions, provide college opportunities for all qualified students, meet the needs of the national economy, and serve the next generation of Emiratis.

Synopsis

The national system of higher education faces a looming crisis which threatens to undermine the achievements in higher education made by the United Arab Emirates over the past 30 years. A decade of static funding, rising costs, and increasing enrollments means that the level of quality of higher education reached by the national institutions may soon begin to recede. This comes at a time when higher education has never been more important to the continued growth and vitality of the economy and society of the UAE. An immediate and substantial infusion of resources and commitment is urgently needed to raise academic quality and expand the contribution of our national colleges and universities to the nation's economic and social development. Over the next decade, they must be provided with additional resources if they are to meet a sharply increased demand for access to a world-class education by a growing number of Emirati students who will be reaching college age and the return of adult learners to higher education. Absent any change in the current fiscal situation, the only alternative for most campuses will be to sharply limit future enrollment to preserve academic quality.

Three Decades of Progress in Higher Education

Under the leadership of His Excellency Sheikh Nahayan Mubarak Al Nahayan, the UAE has made headway and history in higher education, the national colleges and universities are now regarded as a model in the Middle East and beyond.

"Distinguished Education is the fundamental instrument to fulfill society's goals."

HE Sheikh Nahayan

Since its beginning 30 years ago with UAEU's campus in Al Ain, the national higher education system has grown to include the Higher Colleges of Technology, with 14 campuses in six emirates and Zayed University, with campuses in Abu Dhabi and Dubai. The number of degree programs has grown steadily and the quality of programs offered has been widely recognized at home and abroad. Many programs have been approved by major accreditation bodies and more will receive this type of recognition in the future if they have the resources needed to maintain program quality.

The national commitment to higher education has created educational opportunities and provided high quality programs for thousands of Emiratis. UAE leaders and citizens can take pride in this nation's significant accomplishments that have their roots in four outstanding policy decisions that were made in the 1970s. The key decisions were:

- ❖ The UAE would build and operate its own universities.
- ❖ Qualified faculty that meet international standards would be employed.
- ❖ Instruction would be predominantly in English.
- ❖ Education was to be for all qualified Emiratis, and would include women.

This historic and continuing commitment to higher education means that UAE citizens enjoy an educational system of high quality that is accessible to all qualified students, and provides people with the skills and knowledge they need to participate in a modern economy.

As a result of these decisions, the national system of higher education now enrolls over 35,000 students, awards more than 6,500 degrees each year, and annually sends hundreds of students overseas for advanced education. To maintain quality and sustain the commitment to higher education for Emiratis, national action is urgently required.



The Current State of the National Higher Education System:

The Demand for Educational Opportunity and the Need for Quality

This section of the report outlines the pressures that are affecting all federal colleges and universities, and describes the trends which are likely to impact the performance of these institutions over the near term until 2013 and the long term (2020).

Two Pillars of Educational Policy in the UAE: Opportunity and Quality

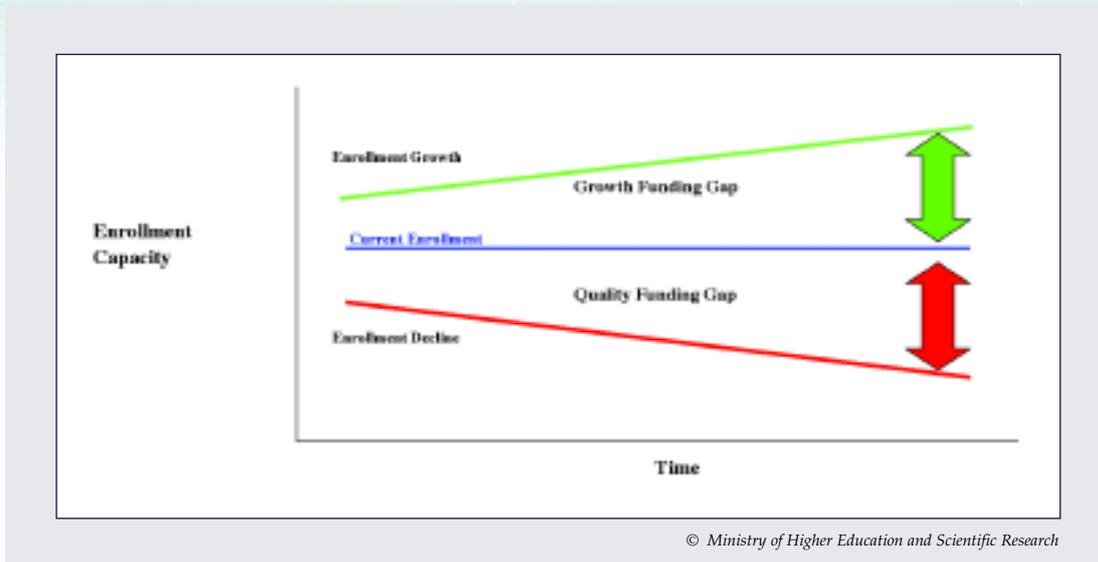
The first section of this report has described the historic trends and educational policy decisions taken by the leadership of the UAE over the past 30 years. In sum, the foundations of educational policy have been to assure that there is opportunity for higher education for all qualified Emirati students and that it will be of high quality. Education is to be free to Emiratis, and opportunity will be provided at both the university and college levels to both men and women.

These enduring policies have led to a fine record of achievement during the past three decades. They have led to a rise in educational standards and qualifications throughout the Emirates. However, sustaining these policies has become a serious challenge for the nation's colleges and universities. The forces of growing enrollment, rising costs and inflation have significantly eroded the capacity of our higher educational institutions to provide both opportunity for education and ensure that the education is of high quality.

The Interplay of Enrollment Growth, Funding and Quality

As the diagram below suggests, the nation's colleges and universities are facing a growing differential between their available resources and what is actually required to meet the growing demand for access to education, and the demand that it be of a quality that will equip graduates with the knowledge and skills needed to participate in the emerging global economy. At current enrollment levels, static funding means that educational quality declines. As enrollment increases, the gap between actual funding and the support that is needed grows wider, putting additional pressure on institutions' capacity to maintain academic quality.

Figure 1: The Relationship Between Enrollment Growth, Funding and Quality



The implications of the diagram are very evident. If there is no additional funding, then institutions must limit current enrollment to protect long-term quality. Any additional growth in enrollment adds to the educational deficit and quality will decline even more steeply. Thus, institutions are now facing options that are not acceptable for UAE higher education. They could accommodate growth and sacrifice educational quality, which would shortchange students. Or, they can reduce enrollment to match current capacity, depriving Emirati students of access to higher education. As the following discussion illuminates, enrollment pressures will intensify over the next 15 years, and will have a substantial impact on higher education in the UAE.

Immediate Actions

The need for action is urgent. The nation's colleges and universities must be able to position themselves to meet the needs of over 50,000 students toward the end of the next decade. Key actions and decisions must be taken and implemented now if an orderly transformation of the higher education system is to be successful. These actions are outlined in the following section of the strategic plan. A major function of this plan is to enable the higher education system to cope effectively with a large increase from its current size. The seriousness of the financial situation means that many of the long-term actions needed to maintain quality and access to higher education for Emiratis must be deferred until the financial condition of the nation's colleges and universities is rectified. In the interim, measures must be taken that will allow the system to continue to provide quality education.

In the near term, the colleges and universities must ensure that academic quality is protected in the face of the current funding situation. To protect quality, access to higher education must be limited to the number of students that can be accommodated within the existing financial constraints.

Beginning in 2007, in order to maintain academic quality, system-wide total enrollment must be limited to 28,000-30,000 students. This limit should be reviewed annually to ensure that it enables institutions to maintain academic quality.

Any proposed new academic program that requires additional resources must identify budgetary offsets in existing programs.

These actions are necessary; however, they do not provide a long-term solution. Rising costs and inflation will mean that in the very near future, absent sufficient funding, institutions will have to reduce their program offerings to match available resources. Additional reductions in total enrollments are also likely, as the need to maintain academic quality limits the number of students that can be accommodated.

The following sections of the report describe the current situation in more detail. It describes the impact of the pressures of rising enrollment and inflation-eroded funding on the historic policies of providing educational opportunity and ensuring quality in the near term and for future generations of Emirati students.

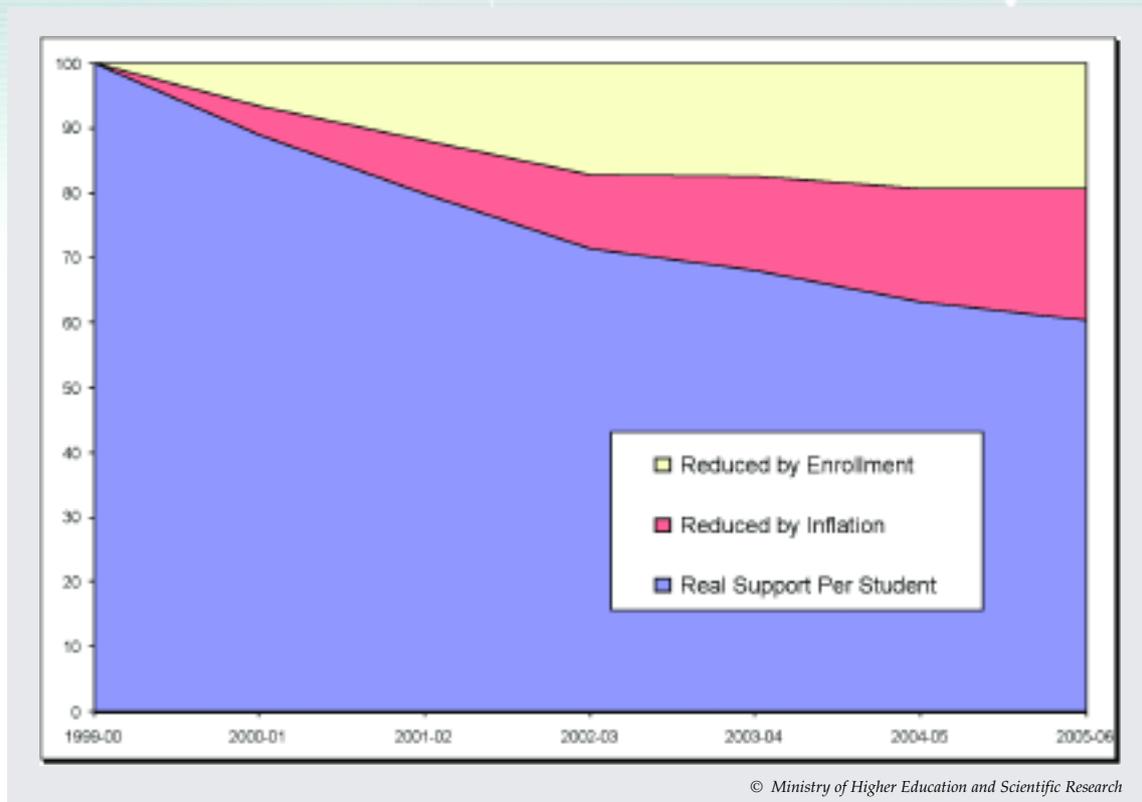
A System Already Under Fiscal Stress Faces an Impending Enrollment Crisis

It is clear that the national system of higher education faces unprecedented challenges over the next decade. Meeting these challenges will require more resources for higher education so that it can maintain educational opportunity and ensure a level of educational quality that meets the most rigorous international standards. To respond effectively requires transforming the current system from a group of institutions pursuing varied and at times duplicative missions, to a system with a crisp delineation of missions and mutually supportive objectives. This will advance the broad goals of higher education in the Emirates. In the near term, additional funding will be urgently needed to avoid turning away students and prevent a decline in academic quality.

An Educational Deficit Has Developed: Chronic Underfunding Limits Student Access and Threatens Academic Quality

The most immediate threat to the long-term integrity of the UAE higher education system is financial. Over the past decade, student enrollment and the costs of education have increased dramatically. However, the higher education system's budget has grown little since 1996. Over the past several years, funding has failed to keep pace with inflation, rising enrollment and increased costs. In real terms, per student financial support at the nation's campuses has declined by at least 20% since 1999.

Figure 2: Decline in Per Student Support Due to Increases in Enrollment and Inflation



All of the institutions that make up the higher education system are experiencing a rise in the number of students applying for admission. If present trends continue, there will be a need to accommodate 5,000 more students by 2013. Every year, a larger proportion of these applicants must be turned away, their expectations unmet. One unit, the Higher Colleges of Technology, could turn away over 3,000 students in 2007 in order to maintain quality in its programs, unless specialised training and education programs are established and funded.

Maintaining Academic Quality Has Become a Constant Struggle

Inadequate funding means fewer students can be accommodated, and it also can mean that the quality of education declines. This means that laboratories go unequipped, that information technology programs do not have state of the art equipment, and students must settle for less than first-rate instruction and facilities. Existing funding levels also make it difficult to attract and retain the best qualified faculty. In many academic disciplines that are vitally important to continued economic growth, the nation's colleges and universities are unable to attract top-flight faculty because, preliminary data strongly suggest, the salary and benefits packages offered are no longer competitive. Earning a reputation for providing a high quality education is difficult for institutions, maintaining a reputation for quality becomes even more onerous in the face of a decade-old pattern of resources being diminished by inflation and growth.

Reduced Access and Lowered Quality Will Affect the UAE Economy and Emirati Participation

The World Economic Forum's Global Competitiveness Report for 2006-2007 notes that while the UAE is the leader among the Gulf countries in terms of overall competitiveness, it also observes that the major factor constraining the UAE's global competitiveness is education.

As the UAE economy continues to grow, it will need not only highly trained workers, but also many kinds of theoretical and applied research. UAE leaders from the public and private sectors expect the national colleges and universities to strengthen, diversify, and support the country's economic development. If the higher education system cannot meet these demands, the economy will suffer and the national goal of raising Emirati participation in the workforce will be threatened.

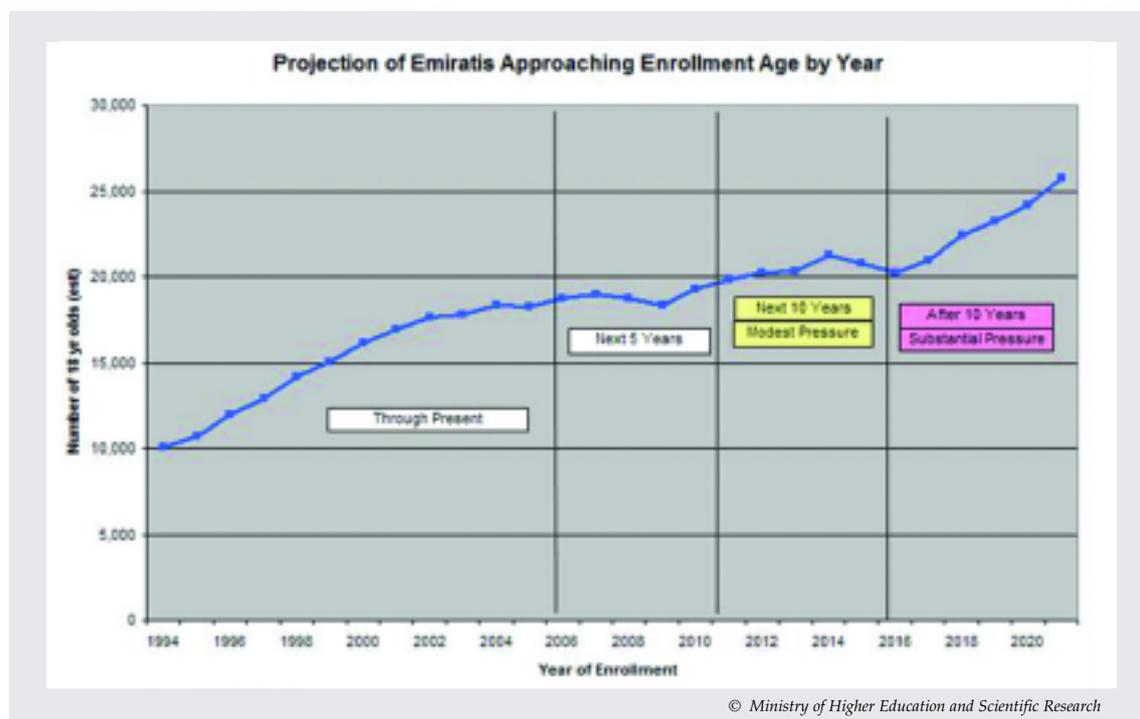
The Next Decade: A Tidal Wave of New Students

The Office of Higher Education Policy and Planning has projected that the number of students that could demand a place in the higher education system will increase dramatically beginning in 2016. While the UAE birthrate has declined over the last two decades, the total number of women of childbearing age has increased dramatically; meaning that pattern of fewer births per family has been offset by an increase in the number of families with children. This "wave" of children is now moving through the UAE primary and secondary education system and will begin to reach college age in 2009, three years from now. After 2015, the number of college-age students will begin to rise dramatically, with a projected 50,000 students able to enroll. This will place substantial stress on the nation's higher education system.

As Figure 3 illustrates, the higher education system can anticipate a rise in enrollment beginning after 2009 that will begin to gradually accelerate for approximately seven years and then rise steeply after 2016.

Decisions about higher education that must be made now will profoundly influence the capacity of the higher education system to meet the needs of the class of 2020.

Figure 3: Future Demand for Higher Education in the UAE



A New Stressor: Continuing and Returning Students

A student population of 50,000 may actually represent only a substantial fraction of the total enrollment that the nation's colleges and universities could be confronting by 2020. In advanced economies, such as the United States, the percentage of adult learners, those students whose careers or other interests motivate them to enter or return to higher education, is approximately 45%. If only 10% of the potential adult learners in the UAE's cohort of 25 to 29 year olds decide to enroll in the nation's higher education system, it would add 13,000 new students to the projected student body of 50,000 in 2020.

This level of growth will require the national system of higher education to add the approximate equivalent of a new UAEU campus and the entire HCT system to accommodate the enrollment projected for 2020.

Educating the Next Generation of Emiratis: An Agenda for Action

The education of Emiratis is one of the most important pillars of UAE society and the development of the country. These goals and objectives are an agenda for action to sustain and improve this critical component of UAE society and prepare the next generation of students for positions of leadership in all sectors of the economy and society.

The Challenge of the Class of 2020 for Higher Education in the UAE

Since the establishment of the UAE University in Al Ain in 1976, the United Arab Emirates has made outstanding progress in higher education, expanding educational opportunities and providing high quality programs for Emiratis. Decisions made during this time were oriented toward the future and helped to lead the UAE into the 21st century and serve as a model for other developing nations. Throughout this time, the importance of higher education has been widely recognized as a key to future growth.



A recent report by *The Economist* observed that two large trends – internationalization and competition – are affecting higher education throughout the world. These trends are being keenly felt in the UAE, where the forces of globalization and internationalization are creating an environment which requires that UAE citizens possess a sophisticated array of new skills to be able to function effectively in the new millennium. These transformations are affecting all facets of education in the UAE, placing heavier demands on students, straining existing facilities, and challenging the nation’s colleges and universities to respond to the increasingly diverse expectations from society. A systematic approach, a national plan, will be required if the UAE is to continue to enjoy the full benefits of higher education.

When developing a plan for higher education for the UAE, a perspective that looks toward the year 2020 is useful. Our understanding of what the class of 2020 will look like should influence educational policy choices. What will the class of 2020 look like? What will it expect from the UAE higher education system? Further, many actions need to be taken now to ensure that the nation’s colleges and universities are ready for students in 2020.

The Class of 2020: A Capsule View

The Class of 2020 will be bigger than any of the classes that come before it. It will enter college or university in 2016 and if current application rates hold steady, the class of 2020 would have approximately 10,000 students. However, a number of factors might significantly raise the percentage of high school students seeking admission. These factors include:

- ❖ A greater recognition of the importance of education would mean that a greater percentage of students would choose to enter college or university immediately.
- ❖ Older students might recognize the need for lifelong learning in the global economy and join the cohort, adding to its size.
- ❖ A slowing economy might reduce job opportunities and make higher education an attractive choice as students opt to raise their skills before entering a sluggish job market.

The class of 2020 will have lived all of its life with the internet, information technology, and a sense of being connected to a world that extends far beyond the physical borders of the UAE. Maintaining and enhancing their technical literacy will be a minimum expectation they have for their education.

Students entering college in 2016 as part of the class of 2020 will have a much more acute perception that they are part of a global economy that, while vibrant, is extremely demanding. They will also have a good understanding of what skills and abilities will be needed to succeed in the global economy of 2020. Language skills may be particularly valued because of their visible connection to professional success.

How can the nation's colleges and universities meet these kinds of expectations?

In the fall of 2003, His Excellency Sheikh Nahayan Mubarak Al Nahayan, Minister of Higher Education and Scientific Research recognized that these kinds of issues were to become of vital national importance, and launched a special national level planning group, which he tasked with advancing national educational policy in the UAE.

The Planning Group recommended creating a Steering Committee to guide what was envisioned as a very broad and sustained effort at reviewing national education policy. On March 28, 2004, the Steering Committee issued a report titled "Higher Education and the Future of the UAE", which addressed the most urgent subjects that the Committee reviewed. The report contained a series of findings and recommendations relating to higher education policy that are the basis for developing a comprehensive plan for higher education in the UAE.

In the important area of education policy coordination, the committee found that

"There are no Federal policies or practices requiring broad coordination of missions, degrees, organizations, or programs between or among federal institutions." While there is coordination of application processes, "...there is no coordination function or position at the Ministry for the federal institutions."

These issues and other considerations led the Committee to recommend the creation of an Office of Higher Education Policy and Planning for federal institutions within the Ministry of Higher Education and Scientific Research. The Office was established in July of 2004 and was tasked with accomplishing the effective coordination of higher education policy and the development of long-range plans to improve the Ministry's capacity to implement effective policies that will meet the changing needs of the UAE.

The Need for a National Master Plan

The Steering Committee report discussed issues that must be addressed by the higher education system if UAE citizens are to meet the challenge of participating in a fast paced, global economy. The issue areas that must be addressed by the higher education system are how it can best:

- ❖ Promote Educational Opportunity for All Emiratis
- ❖ Assure High Quality Education
- ❖ Contribute to UAE Economic Development.

The nation's colleges and universities will need a strong plan that specifies how to address these issues, and the plan must be in place soon, if the demands of future enrollment represented by the class of 2020 are to be met.

To begin developing a general plan for higher education, the Office of Higher Education Policy and Planning has used the findings and recommendations of the Steering Committee report as a starting point and has organized an agenda for action that addresses the policy issues that will be crucial to the future success of higher education in the UAE.



A Shared Vision and Mission for Higher Education

A shared vision and focused mission are essential if the higher education system is to have a comprehensive and cohesive approach to addressing the higher education needs of Emiratis. The new vision provides a common framework that reflects Emirati expectations about what the higher education system should be striving towards; the mission underscores campus teaching and student success, and the leadership of the Ministry in advancing higher education through its colleges and universities, using accountability standards, as well as accrediting private higher education institutions, and providing educational services.



A Vision for the Future

The federal universities and colleges will be the preferred path for Emiratis who desire an outstanding educational experience that retains an Arab identity while equipping students with the intellectual attributes and technical skills needed to participate in the advancement of UAE society. Our campuses will contribute to the growth of knowledge and will be regarded as an indispensable resource for the economy. Our colleges and universities will be wellsprings of culture and ideas that enrich Emirati lives.

The Mission of Higher Education

The mission of the higher education system is to advance educational opportunity and access, teaching and research, and assure that the quality of higher education in the UAE is achieved and maintained to the highest international standards. The education and graduation of Emirati students from the diploma to graduate degrees is the focus of institutional effort. The Ministry of Higher Education and Scientific Research advances national goals, policies, and accountability for tertiary education.

New Goals and Objectives for the Higher Education System

From the new Vision and Mission for the national system of higher education, a brief set of fundamental goals follows which reflects the vision and advances the mission. These goals focus on promoting access and opportunity, assuring educational quality and contributing to the UAE economy and apply to the higher education system in its entirety. They embody the historic pillars of our nation's policy for higher education – that it be freely available and of high quality. Specific sub-goals and actions have been developed under each of the broad goals. Achieving a specific goal or action in one area may also contribute to the accomplishment of a goal in another, and the grouping of actions under a particular goal should be regarded as preliminary. Some actions reach beyond the Ministry to other national agencies, other levels of government or the private sector. The actions extend out to the middle of the next decade, when the number of students demanding access to higher education is projected to increase dramatically.

1. Expand Access to Educational Opportunity for Emiratis

Every Emirati secondary school graduate shall have higher education opportunities in UAE universities, colleges, workforce preparation or other programs and shall have the academic preparation needed to maximize these opportunities.

2. Assure High Quality Education

Emirati students entering the higher education system shall have college readiness skills, and higher education institutions shall be known for the demonstrated quality of their faculty, programs, and graduates.

3. Contribute to UAE Economic Development

The academic programs and research efforts of the UAE system of higher education shall better link to national needs of the economy, prepare Emiratis for participation in the private sector, and expand leadership in energy production and economic development research.



System-Wide Objectives for Higher Education

To achieve these goals, the higher education system must accomplish the following ten system-wide objectives:

- 1. Obtain funding to eliminate the gap between the projected enrollments and the resources required to support them.*
- 2. Improve college readiness skills of secondary school students and assist in raising the institutional capacity of the secondary school system.*
- 3. Improve the participation and persistence of Emirati males in higher education.*
- 4. Acquire funding to assure educational quality.*



5. *Clarify the mission of each institution.*
6. *Articulate the role of the non-federal education sector.*
7. *Develop academic databases for improved management decision making.*
8. *Forge new linkages between academic research and the private sector.*
9. *Clarify research roles of the higher education system institutions and develop a new approach to funding national research.*
10. *Establish durable relationships between the higher education system and leading sectors of the economy that lead to increased productive employment of Emiratis in the private sector.*

Each of the objectives identified above has one or more action steps that are intended to accomplish the objectives and enable the higher education system to contribute to the progress of the United Arab Emirates. Together, they comprise the strategic actions that must be taken to advance higher education in the Emirates, and their scope requires a new role for the Ministry that focuses on establishing broad, effective policy for the entire higher education system and monitoring performance and progress.

Goal 1: Provide Educational Opportunity for All Emiratis

Every Emirati secondary school graduate shall have higher education opportunities in UAE universities, colleges, workforce preparation or other programs, and shall have the academic preparation needed to maximize these opportunities.

1.1 Fund educational opportunity and access for UAE citizens

The number of Emiratis is growing and more UAE citizens have recognized the importance of education. This has led to a steady increase in the number of applicants for admission to national higher education institutions. A decade ago, the consequences of this trend were noted by the Advisory Committee for Planning for Higher Education in the United Arab Emirates, and the concerns expressed by the Committee now appear to have been well founded. Over the next 10 years, enrollment is expected to increase by approximately 10,000 students. Thus, the current funding situation means that there is a growing gap between the number of Emiratis wanting an education and the capacity of the system to accept them.

A significant number of students will be eligible for admission to federal campuses; however, many of the students will not have the qualifications for academic success. Students should be placed in a program in which they can succeed and develop skills and abilities for participation in the workforce.

If allowed to continue, the present situation is likely to have significant consequences for UAE society. Frustrated students, unable to meet their educational goals, may opt for other activities that will underuse their capacities. Students that are unable to achieve their full academic potential in the higher education system are likely to be marginalized in the sophisticated knowledge-driven economy that the UAE is creating and become disconnected from the society. Programs for each skill level should be available and pathways of upward mobility should be established for motivated students.

Action: The Ministry has developed a report which outlines the full range of vocational and developmental programs needed by the nation's colleges and universities to serve the diverse needs of students over the next decade. Financial federal investment shall be sought for long-term support.

1.2 Assure that incoming students are prepared to work at the university level

While the qualifications of graduates are important to the success of the UAE higher education system, another important factor that must be considered is the capacity of incoming students to complete what should be a demanding curriculum. It is clear that a large number of new students are not ready for work at the university level. Scores on the CEPA (Common Educational Proficiency Assessment) test show that far too many students do not have the necessary competencies in English to do college-level work. CEPA was developed through a cooperative effort on the part of educators at UAEU, ZU and HCT and CEPA scores are a strong predictor of future academic success and every effort must be made to provide students at K12 with the tools that ensure success at the university level. Of those students who took the CEPA exam in 2006, slightly more than 4% achieved a score that would allow them to challenge developmental education English courses at UAEU. The remainder of those choosing to enter college or university had first to begin their studies with developmental education coursework. This situation means that resources which should be used to advance higher education have been diverted to shore up student skills that should have already been developed during their secondary education experience. System-wide, it is estimated that over 30% of higher education resources are devoted to preparing students to work effectively at the college or university level. Because of the need to provide additional preparation for many students, what should normally be a four-year baccalaureate program becomes a five- or six-year program as students take developmental education classes for one or two years.

When asked to explain the success of their world-class secondary education institutions, an educator in Finland was reported to have replied simply “teachers, teachers, teachers”. Clearly, in the UAE, greater effort must be devoted to raising the capacity of secondary school teachers if the higher education system is to be able to successfully reorient its energies and resources away from developmental education and towards first quality undergraduate and graduate education. The Ministry of Higher Education and Scientific Research has a significant stake in successful educational outcomes for secondary education and should assist in developing and implementing policies and programs which raise the institutional capacity of secondary education.

The quality of K12 education poses a significant problem for the nation and has attracted the attention of a number of institutions including the Abu Dhabi Education Council and the Dubai Education Council.

Action: Establish a Ministerial level task force to identify concrete alternative approaches and policies for improving college readiness skills of secondary school students and recent secondary school graduates so that the percentage of students entering the higher education system at the higher diploma and baccalaureate level in 2010 is doubled from the 2006 baseline. Such approaches might include:

Working with the Ministry of Education and emirate-level education councils to develop an assessment for teachers of English in K12, enriching existing professional development programs for these teachers, providing additional English teaching capacity in K12 to reduce the number of students requiring developmental education, and; conducting CEPA workshops for secondary school teachers.

Developing educational programs to improve basic skills and employability of secondary school graduates.

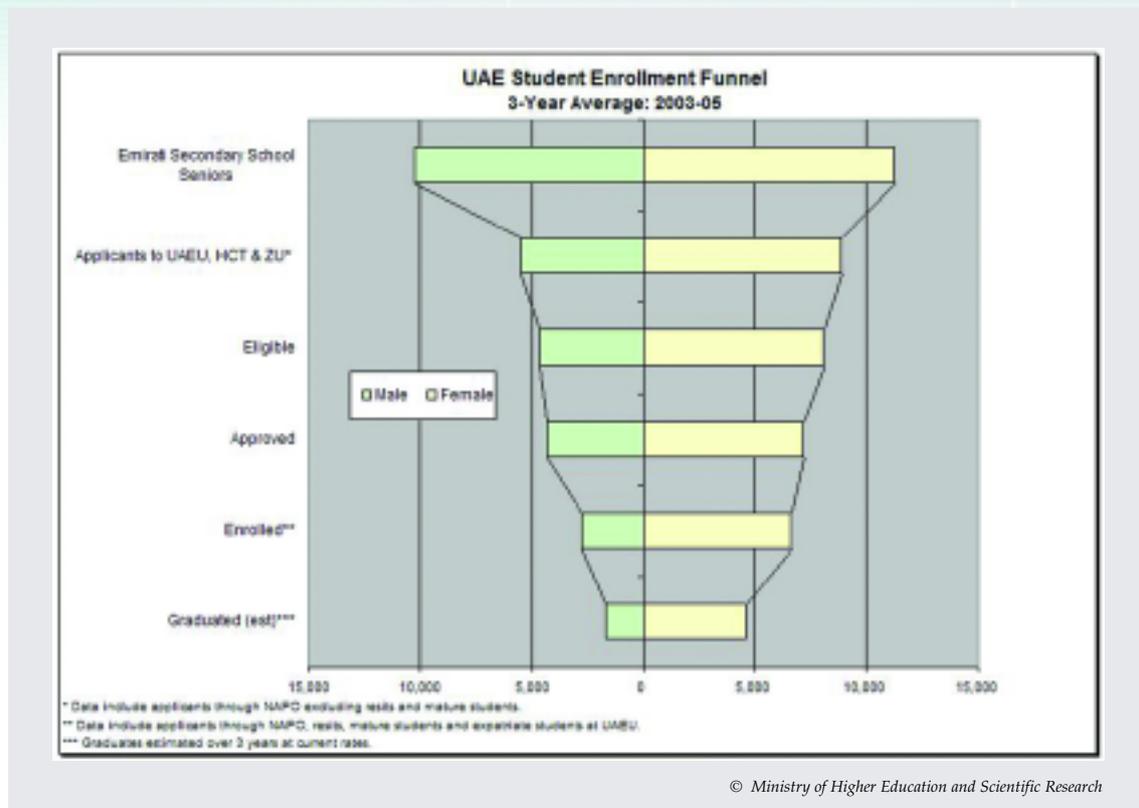
1.3 Expand the participation and persistence of males in higher education

Data developed by the Institutional Planning Unit and the Admission and Registration Department of UAEU indicate that male enrollment has lagged behind female enrollment for the past 20 years. A 2005 survey conducted by the National Admissions and Placement Office (NAPO) at the Ministry of Higher Education and Scientific Research showed that about half of the male students (current school leavers) who have been approved for admission at UAEU and HCT over the last seven years did not show up for registration.

It appears that there are many reasons for the relatively low rate of male enrollment in national institutions. Young males have more opportunities, including joining the military or police, participating in a family or other business, working in some capacity for the government or attending a non-federal educational institution. Young men perceive that it takes a long time to complete a higher education program. The requirement for competency in English may also act as a deterrent, because many students spend a year gaining the level of proficiency needed to successfully pursue college work and lengthening the time required to complete a degree program. Academic progress requirements have also been identified as a possible hindrance to male enrollment. Failure to make satisfactory progress leads to dismissal from the program and opportunities to resume studies are very limited.



Figure 5: Higher Education Funnel from K12 to College or University Degree



This lack of persistence is a serious policy concern for the UAE and needs to be addressed immediately by the Ministry and its institutions. As the figure above illustrates, only one out of five baccalaureate graduates of the higher education system is a male. More males must be recruited into the system and provided with the educational skills and attitudes that will foster their entry into the UAE workforce.

Action: *By the beginning of calendar year 2008, the Ministry should develop a plan of action to raise the percentage of males enrolling in the federal higher education system; and identify strategies that by 2013 will raise the number of degrees awarded to males by 50% from the current 2007 baseline.*

1.4 Increase the opportunities for international scholarships for Emirati students

Globalization requires that the UAE economy have a wide variety of specialized skills in place to maximize the growth and diversification of the economy. A great many of these specialties are currently available only in other countries and are uneconomic to replicate in the UAE. To ensure that the UAE has the necessary skills available to advance the economy requires a larger number of qualified Emirati students to have at least part of their education overseas.

Action: By 2008, double the number of scholarships from the 2006 baseline. The Ministry's Scholarship Division should identify the five highest priority skills or educational areas that are not currently adequately supported by national or private institutions in the UAE.

Action: The Scholarship Division is revising and will expand its data system so that scholarship students and their progress toward degrees can be tracked and their eventual career paths and employment choices can be illuminated.



Goal 2: Ensure High Quality Education

Emirati students entering the higher education system shall have college readiness skills, and higher education institutions shall be known for the demonstrated quality of their faculty, programs, and graduates.

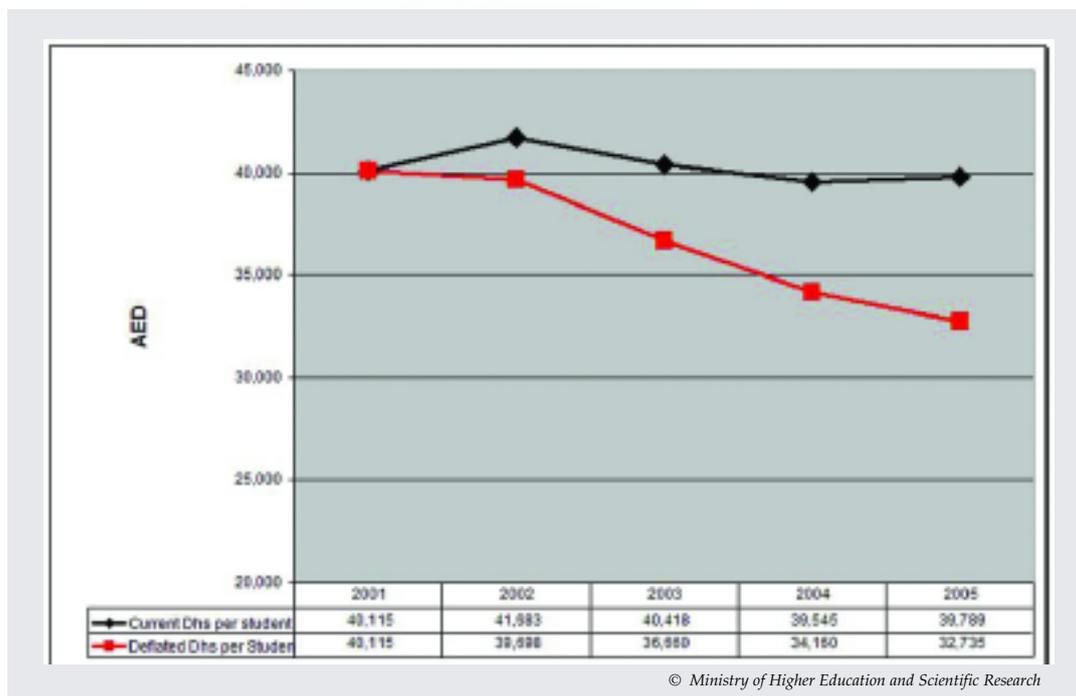
2.1 Eliminate the quality gap and assure long-term capacity

Ensuring that Emiratis have a high quality education will require additional funding. In terms of student needs, the UAE's national system of higher education does not provide adequate funding to assure academic quality throughout the system, particularly when the projected long-term growth in enrollment is considered. Current levels of funding mean that our nation's colleges and universities have difficulty attracting the very best professors to conduct significant research and transmit knowledge to the next generation of Emiratis. Over time inadequate funds make for institutions that are less and less able to maintain vital support facilities, such as libraries and laboratories, to a world class standard. In the constantly changing world of information technology that plays such an important role in modern higher education, our higher education system faces the challenge of keeping their students at the leading edge of this important field. Preliminary data suggest that faculty compensation is below GCC norms, and this is especially true for high demand fields such as engineering and information technology.

As outlined earlier in this report, there is currently a substantial funding deficit that will dramatically affect educational opportunity and quality if allowed to persist.

As the figure below portrays, inflation has greatly diminished the real student support over the past five years. Per student support is estimated to be at approximately 40,000 AED in 2001. That figure today would only buy 32,000 AED worth of support, a reduction of approximately 20% in five years.

Figure 6: The Effect of Inflation on System-Wide Per Student Funding 2001-2005



To correct this problem, stable, long-term funding is needed to sustain quality in higher education.

The needs of the higher education system for additional financial support were outlined in the report “Funding Students First”, developed for the Ministry by the Office of Higher Education Policy and Planning with the cooperation and assistance of the system’s colleges and universities. The report described the need for funding to bring the nation’s colleges and universities to the desired level of capacity and quality. Since its publication in 2004, funding needs have increased due to continued inflation.

Action: In the near term, establish institution-level and system-wide limits on enrollment to be put in place by the beginning of the 2007 academic year to protect academic quality. In the aggregate, total enrollment should be between 28,000 to 30,000 students. This level should be reviewed annually to assure that it advances the goal of assuring quality education.

Action: Identify alternative funding options that may be used to provide financial support for the national higher education system. The Ministry should establish a special committee to explore ways to create stable, long-term funding conditions for the nation’s colleges and universities. Along with other alternatives, the committee should explore possible solutions which include:

- ❖ *Creating a trust of high value land or similar assets that would be dedicated to the Ministry for support of higher education;*
- ❖ *Identifying specific revenue streams that would provide secure long-term funding for higher education;*
- ❖ *Charging tuition and/or fees to expatriate students and allowing them to enroll in national colleges and universities.*

Action: Establish a system-wide task force to identify and prioritize funding levels needed to raise educational quality and capacity for each institution through 2020.

2.2 Assure quality higher education programs and accountability in the UAE

Funding higher education at an appropriate level will maintain and improve quality and it will also be important for the Ministry to have regular feedback on program quality, student success and program accomplishments in the national institutions.

Action: The Ministry should implement a plan for conducting regular program review at the institutional level.

Action: The Ministry should implement an accountability program for the institutions and report on student outcomes to the Ministry on a regular basis.

2.3 Clarify campus missions and develop a comprehensive higher education policy that establishes distinct roles for each institution while promoting institutional collaboration and cooperation

A review of the mission statements of the national colleges and universities indicates a great deal of similarity in institutional missions. In the current and future academic marketplace in the UAE, it will be important for UAEU, HCT and ZU to offer a more distinctive mission that differentiates them from other institutions. At the same time, it is important for the national institutions to find new ways of collaboration and cooperation to maximize the breadth of the educational experience they are able to offer Emiratis and to take advantage of opportunities for synergy.

Action: Develop a comprehensive educational policy statement which outlines and differentiates the mission of each institution and clearly articulates their respective roles and relates them to the new mission of the Ministry and its Master Plan for Higher Education.

Action: Define the mix of programs for UAEU that will enable it to meet the needs of traditional students, maintain and advance its position as the primary university for graduate education, and conduct significant research.

Action: Clarify the mission of ZU to highlight information technology and other academic programs of excellence and to identify public service education priorities that are clearly linked to national needs.

Action: Clarify the mission of HCT to highlight its technical and workforce education role as established in its approved mandate, and support improved linkages with UAE labor market needs.

Action: Identify opportunities for expanded institutional collaboration in research and academic program delivery.

2.4 Monitor and maintain quality in the non-federal sector

The UAE's economic growth and development has contributed to the growth in the number of private institutions offering educational programs. In addition to the institutions in the national system, local institutions at the emirate level and private institutions operating throughout the country have created a climate of competition for the best students. As of January 2007, 42 institutions were recognized by the Commission for Academic Accreditation (CAA) at the Ministry of Higher Education and Scientific Research and every indication suggests that the UAE will continue to be regarded as a "target of opportunity" by foreign education providers.

In the aggregate, these schools enroll more students than the national higher education system. Preliminary data indicate that nearly 15,000 Emiratis are now studying at private institutions and the number of Emirati male students in these institutions is at parity with their female counterparts.

Through the licensing and accreditation system of the CAA, the UAE makes a concerted effort to provide quality assurance and consumer protection when non-federal institutions seek licensing or accreditation from the Ministry. However, existing policy provides no authority for CAA to screen institutions that operate in educational free zones to assure that they meet quality standards.

Action: Develop a comprehensive policy for non-federal educational institutions that establishes parameters within which they must operate.

Action: Establish a task force to determine what legal changes must be made to provide authority for the CAA to promote quality and foster consumer protection in the educational free zones.

2.5 Improve higher education data for better decisions

As the Steering Committee noted in its report, a complex and growing system of higher education requires accurate and timely information. The Ministry will need to organize and manage data so that they are useful to program managers, enjoy the confidence of top policy makers, and illuminate the higher education system for UAE citizens.

A comprehensive higher education database will support better decision making and promote accountability for achieving goals and objectives. Data are already being generated by many components of the higher education system. Campuses have databases developed through institutional research, the National Admissions and Placement Office (NAPO) generates considerable data relating to student admissions and enrollment, and all schools generate data for budget and financial management purposes. Developing a more integrated database will be a significant step in creating a modern management information system for the Ministry.

Because of the growing impact of non-federal institutions in the higher education sector, the government must also be able to effectively monitor trends and conditions in this area and should take steps to establish more comprehensive data regarding these institutions.

Action: The Office of Higher Education Policy and Planning is implementing a comprehensive, integrated national database for higher education in the UAE, which includes information on federal and non-federal institutions.

Goal 3: Contribute to UAE Economic Development

The education programs and research efforts of the UAE system of higher education must address the needs of the economy, contribute to improving the UAE quality of life, prepare Emiratis for effective participation in the private sector, and expand leadership in energy production and economic development research.

3.1 Foster productive relationships with the private sector and expand institutional collaboration to include emirate-based educational efforts such as the Abu Dhabi Education Council and the Dubai Education Council

UAE citizens have become more aware of the value of education and the relationship that education has to general economic development and personal well-being. To promote individual and social development, the higher education system must have a close and durable relationship with the private economic sector. The effort to establish and maintain relations with the private sector must become part of the daily activity of all national institutions. The



long-run success of the higher education system clearly depends on the acceptance of its graduates by public and private organizations who value them for the skills and knowledge they possess.

To become valued members of the UAE workforce, workplace skills must be developed by UAE nationals. Graduates of UAEU, HCT and ZU, from the diploma to graduate level must possess the skills needed to be productive members of a public institution or private organization. These skills include:

- ❖ *Teamwork*, contributing continuously to the success of the team and working well with others,
- ❖ *Communication*, having the ability to communicate orally and in writing,
- ❖ *Problem-solving*, having the capacity to understand, analyze, synthesize, evaluate and solve problems,
- ❖ *Computer literacy*, having the ability to use productively the latest advances in IT,
- ❖ *Productivity*, demonstrating time on task, and commitment to the success of the organization.

"We want education that is an instrument for helping the society move forward in continuous development."

HE Sheikh Nahayan

These skills, together with knowledge gained through higher education, will enable UAE citizens to contribute more fully to the economic future of the country.

Almost all elements of UAE society are becoming part of a global economy and global network. It is important for the higher education system to reflect this new reality in many of the activities it undertakes and in the kinds of educational experiences it offers its students.

Action: Each component of the UAE higher education system will identify additional opportunities and sources of support for broadening the international experiences of its students.

3.2 Improve the placement of graduates in the UAE economy

The number of Emiratis in the private sector workforce is very low. Major efforts must be undertaken to raise the number of nationals employed in the private sector to support emiratization. Of particular concern is the need to increase the number of Emirati graduates in the fields of science and engineering.

Action: Establish a task force to identify educational, attitudinal or skills barriers to the employment of UAE graduates in the private sector and make recommendations for eliminating these barriers and promoting the development of workplace skills and behaviors needed to function effectively in the knowledge economy.

3.3 Conduct research relevant to the needs of the UAE

Sustaining economic growth is a priority for the country and its higher education system. The higher education system can contribute to research in energy production, petroleum engineering and many other areas.

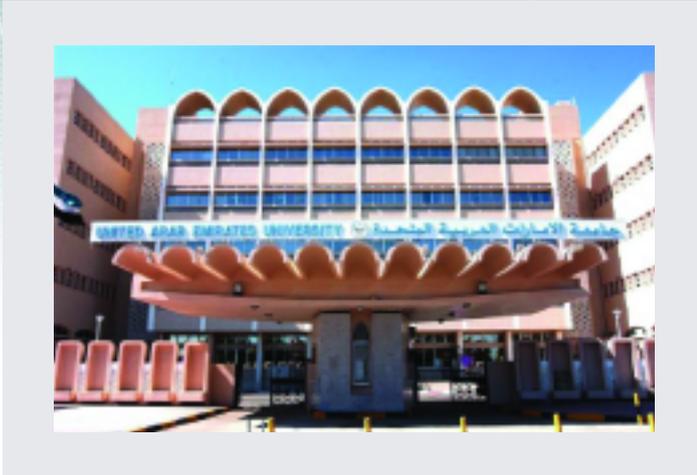
Investments in university research provide a number of benefits to the general economy. These include:

1. Producing new information
2. Training skilled graduates
3. Supporting new scientific networks and stimulating interaction
4. Expanding the capacity for problem-solving
5. Producing new instrumentation and methodologies/techniques
6. Creating new firms
7. Providing social knowledge
8. Enabling industry access to unique university facilities.

Clearly, these benefits flow through to the society as a whole and make a compelling case for universities to engage in publicly-funded research and seek research partnerships with firms in the private sector.

Higher Education and Research

A review of the vision and mission statements developed as part of the strategic planning process undertaken by these universities reveals a strong emphasis on research as an important component of each university's mission. While research goals are not fully articulated, the mission statements speak directly to the need for a pronounced research presence in UAE higher education.



Active programs of academic and scientific research add significant value to a nation's economy. They produce new knowledge, forge linkages between universities and other sectors of society and foster career and professional development opportunities for Emiratis. In his preface to the recent report on research affairs at United Arab Emirates University, His Excellency Sheikh Nahayan Mabarak Al Nahayan observed that "Scientific and technological capacities are the primary stock of knowledge and vital for the progress of society." He further stated that a

country's "...place in the world is determined on their capacity to reach new horizons in scientific research."



A visible research presence is thus a key element in promoting academic quality, advancing human knowledge and linking the talents and expertise of the university with the broader society. The national colleges and universities undertake a wide variety of pure and applied research that contributes to

national development and provides international visibility for UAE education. Energetic research programs advance the mission of higher education and help build their academic reputations.

At both universities, stronger research support in targeted areas is needed to provide a basis for quality graduate programs at the master's and doctoral levels. As the country continues to develop, such specialized graduate programs – based on strong, strategically targeted and sufficiently funded agendas – will be needed to provide postgraduate opportunities for Emiratis. As more students pursue postgraduate studies, they will themselves contribute to research in critical areas and will help to position the UAE as a regional leader in research.

The United Arab Emirates could foster increased research and development through a targeted grants program in the Ministry of Higher Education and Scientific Research. Expanded partnerships with private industry would add to this capability for research.

HCT participates in applied and cooperative research activities and has a vital role to play in the progress of research in the UAE. Research of any kind requires substantial technical support that draws upon the capacities that HCT is developing in many of its students. The quality of trained technical support available will be an important factor in the future development of research in the UAE.

The Ministry of Higher Education and Scientific Research should establish a process of campus coordination to take advantage of faculty expertise and maximize the number of national priorities that can be addressed.

Action: Link research projects to national needs including sustaining the capacity of the UAE as an energy exporter, and the diversification of the economy.

Action: Establish a Ph.D. program at UAEU which conducts advanced research and builds expertise in a field that is critical to UAE development.

Action: Determine the need for a Ministry office for identifying national research priorities, and raising and allocating funding among research programs, and develop a model for accomplishing this objective which includes collaboration with emirate-level institutions.

Action: Improve dissemination of information on the total amount of funding for research.

Action: Establish a basis for strategically targeted graduate programs at the universities that will position the country for a leadership role in the region.



Conclusion: Critical Choices

The nation's colleges and universities have made great strides in the past 30 years. More Emiratis are being educated in more fields than ever before, on modern campuses that are found in most of the emirates. UAE campuses have a sound foundation to build on for the future. Emirati graduates are contributing to national pride and national growth.

The UAE's higher education system is now at a critical juncture. Citizens' expectations about its level of performance have been raised, and a globalizing economy is demanding that it be more efficient, more effective, and more responsive. This is difficult to achieve under conditions of inadequate budgetary support and growing enrollments that now threaten academic quality.

The number of Emiratis who will be seeking access to a quality higher education is expected to grow steadily over the next decade and then will begin to rise dramatically beginning about 2016. When adult learners who wish to continue their education as a part of "lifelong learning" begin to demand access to higher education, they will add to the pressure on our nation's colleges and universities.

The next generation of young Emiratis will require a high quality education if they are to participate fully in all sectors of society and contribute to the growth of the UAE economy. This Master Plan outlines the actions to be taken and the resources required to accomplish those actions.

The Master Plan is a proactive effort that, when implemented, will ensure that the nation's colleges and universities are prepared to educate upwards of 50,000 Emiratis beginning in 2020. The plan focuses on three major goals that are most important to achieve – *ensuring opportunity* for all qualified Emiratis to receive a *high quality education* that will enable them to *contribute to the Emirati economy and society* in their chosen fields.



- ❖ The new vision and mission for the national colleges and universities will help to promote a coordinated, integrated approach to meet the higher education needs of Emiratis.
- ❖ The Master Plan's activities will include determining where new programs and new campuses are most needed.
- ❖ The Master Plan calls for providing substantial new annual funding to protect and enhance academic quality in the nation's colleges and universities.
- ❖ The plan provides for collaboration between the Ministry and its colleges and universities, and cooperation with other significant stakeholders in UAE higher education.
- ❖ The future growth and development of the system contemplated by the plan requires that financial support include both the increases in the number of students that will be enrolling and also the effect of rising costs and inflation on institutional capacity.
- ❖ Accomplishing the planned objectives will raise the rate of male participation in higher education, provide linkages to the economy for our colleges and universities, and provide a foundation for long-term growth in higher education that meets the needs of the nation.

"Education is the lamp that illuminates the path forward for our nation"

His Highness Sheikh Zayed Bin Sultan Al-Nahyan

By 2020, system-wide enrollment will rise by a minimum 37% from the current level to a level that may approach 50,000 students. It is important to recognize that the current funding level is inadequate to meet the enrollment level that the system currently has. To meet future demands, decisions must be made now to invest in and fund higher education at a level that preserves the quality of the federal institutions, provides college opportunities for all qualified students, meets the needs of the national economy, and serves the next generation of Emiratis. The horizon is sufficiently distant that commitment and energy can lead to a positive educational outcome for the young Emiratis born in 2002 who will be applying to the federal colleges and universities in 2020. If the nation is to respond effectively to the coming generation of students, it must develop a sense of urgency concerning the needs of its system of higher education.

Our current students, and the next generation of students in the United Arab Emirates deserve no less than the finest education that can be provided.





MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

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