Abu Dhabi Education Reform: The Road to 2030

Overview of P-12
Overview of HE
Research Funding
HE Sample Projects
Abu Dhabi Education Reform: The Road to 2030

Overview of P-12
Overview of HE
Research Funding
Sample Projects
ADEC focuses on 6 priorities over the next ten years to elevate the P-12 education quality

ADEC Priorities (2009-2018)

1. Elevate Schools Quality in Abu Dhabi to International Standards
2. Improve Access to P-12 Education
3. Provide Students with Affordable Options of High Quality Private Education
4. Preserve UAE Culture & Heritage and Develop Successful Careers
5. Build ADEC Capabilities
6. Actively Engage the Stakeholders
ADEC targets both a fundamental long-term transformation and immediate improvements

Overview of ADEC P-12 Strategy

**Long-term Strategy**
- ADEC will pursue a long-arching strategy to achieve dramatic quality improvements in P-12 education
- The reform will address every component of the education system:
  - Elevating the capabilities of school leaders and teachers
  - Upgrading the curriculum to meet the emerging socio-economic requirements
  - Implement an ambitious students assessment system based on local and international standards
  - Implement a comprehensive schools monitoring/inspection system for public and private schools
  - Upgrading the public schools facilities
  - Attracting and expanding quality private schools
  - Targeting special needs education
  - Elevating the curriculum standards for Arabic, Islamic studies and Civics

**Immediate Improvement Imperatives**
- About 67,000 students are expected to graduate from high-school by the time the reform is fully implemented
- The performance of school graduates is unsatisfactory
  - About 35% are not able to join universities
  - Over 95% need a bridge programs
- ADEC will pursue an accelerated improvement program to ensure graduates are equipped to pursue quality higher education:
  - Enhance principals and teachers capabilities
  - Focus on improving English language and math skills
  - Help students better prepare for universities entrance exams
  - Enforce discipline and attendance
  - Adopt aggressive assessment program
- ADEC will rely on the expertise of best-in-class international operators to drive the reform
## The New School Model

### Key elements

<table>
<thead>
<tr>
<th>Arabic and English</th>
<th>Learning Outcomes</th>
<th>Classroom Resources</th>
<th>Support for Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing students’ Arabic and English skills through the use of Arabic and English teachers jointly planning and teaching classes</td>
<td>The use of learning outcomes that are consistently used, more realistic, and better meet the needs of Abu Dhabi than current standards</td>
<td>Consistently resourcing schools with instructional materials in areas of Islamic, Arabic and English literacy, Mathematics, Science, Active learning</td>
<td>Supporting teachers through curriculum guides, teacher resources and upfront and ongoing professional development</td>
</tr>
</tbody>
</table>

### The objective

- Foster a child-centered learning environment which is supported by families, teachers, and community
- Develop Arabic and English language abilities, critical thinking skills, and cultural and national identity through the consistent use of rigorous learning outcomes and pedagogy
- Standardize the curriculum, pedagogy, resources, and support across all ADEC school types

### Approaches to learning

- Social
- Problem solving
- Attitudinal
- Emotional
- Innovation

The overarching skills, abilities, knowledge and understandings required to approach learning in the school setting
The New School Model Will Be Phased in Over Six Years

**School Year**

<table>
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**Milestones:**

- TIMSS
- PISA
- Grade fully migrated to new system
- Increased English and overall teaching hours/ New assessment/ School monitoring
- Readiness assessment check
- Improved school leadership, teacher skills and facilities upgrade
- Full model implemented

**Key Improvements:**

(Students performance improvement by local assessments)

**Cycle 1:**
- Launch, Consolidate and Standardize
- Assess readiness of Grade 5-7 students (to be Grade 7-9 in 2014-2015) to assimilate new curriculum

**Cycle 2:**
- Assess readiness of Grade 9-10 students (to be Grade 11-12 in 2015-2016) to assimilate new curriculum

**Cycle 3:**

**Full Migration to New School Model**
Abu Dhabi Education Reform: The Road to 2030

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The policies for Higher Education are defined using a holistic framework built on five pillars

Education Policy Framework: Higher Education

Objectives of Higher Education System

- Governance
- Research, Innovation & Technology
- Academic Programs & Credit System
- Human Capital
- Students & Learning Environment

Intermediate Outputs (3-7 years)
- Academic Achievement apparent through individual and collective learner performance
- Labor Market Achievement is apparent in employability, labor productivity and employment
- Innovation & Technology Achievement is apparent in technological progress

Long-term Outputs (8-15 years)
- Social & Economic Gains
  - Achievement apparent at different levels: community, country, region, and the world
  - Improvements can be measured quantitatively through increased employment rate, higher per capita income, increased GDP, etc.
  - Improvements can also be measured qualitatively through more entrepreneurship, increased private sector involvement, increased public sector effectiveness, improved quality of life, etc.

Source: Abu Dhabi Education Team analysis
In Higher Education, Abu Dhabi’s mission is to lay the foundation for an innovation-based, knowledge producing society

Mission of Abu Dhabi Higher Education Strategy

Abu Dhabi's strategic plan for Higher Education is designed to lay the foundation for an innovation-based, knowledge producing society by:

- Elevating the **quality** of Higher Education to international standards through partnerships with world class universities, high licensing and accreditation standards, requirements and incentives for continuous improvement

- Promoting and incentivizing **innovation**, scholarship and discovery through major **research** funding in **areas of strategic importance** to Abu Dhabi, thereby building a strong community of scientists and scholars

- Carefully **aligning Higher Education with labor market and socio-economic needs**, guided by the Abu Dhabi Economic Vision 2030 and Abu Dhabi’s policy agenda

Source: ADEC Higher Education Team Analysis
The Higher Education system in Abu Dhabi faces four key challenges

Challenges and Root Causes of the Higher Education System in Abu Dhabi

<table>
<thead>
<tr>
<th>Higher Education Challenges</th>
<th>Root Causes</th>
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<tbody>
<tr>
<td>I  Misalignment of Higher Education Output with Abu Dhabi’s Socio-economic Vision</td>
<td>1 Low Preparation Level of P-12 Graduates</td>
</tr>
<tr>
<td>II Insufficient Quality of Graduates &amp; Faculty</td>
<td>2 Inadequate Quality Assurance</td>
</tr>
<tr>
<td>III Limited Research Activity</td>
<td>3 Limited and Unfocused Program Offerings</td>
</tr>
<tr>
<td>IV Restricted Opportunities in and Access to Quality Higher Education</td>
<td>4 Difficulty in Attracting and Retaining Quality Faculty</td>
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<td></td>
<td>5 Insufficient Funding for Higher Education</td>
</tr>
<tr>
<td></td>
<td>6 Underdeveloped Research &amp; Innovation Environment</td>
</tr>
</tbody>
</table>

Source: Abu Dhabi Higher Education Taskforce, ADEC Higher Education Team Analysis
I. Misalignment of Higher Education Output with Abu Dhabi’s Socio-economic Vision

There is misalignment between the labor market’s demands and the supply of university graduates, by discipline

Source: Abu Dhabi Statistical Yearbook; Abu Dhabi Census 2005; Annual Report 2005-2006, UAEU; ADEV 2030; ADEC Higher Education Team Analysis
II. Insufficient Quality of Graduates & Faculty

**Abu Dhabi’s universities rank relatively low in international rankings of Higher Education institutions**

UAE Universities Rankings in International Ranking Systems

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</table>

1) These reflect the home campus rankings, not Abu Dhabi campus rankings
2) ARWU or Jiao Tong ranking
3) Developed by the SESRTCIC. Rankings used are those obtained from the composite index listing top 84 universities only
4) Opened after 2006

Source: ADEC: ADEC Higher Education Team analysis
III. Limited Research Activity

UAE’s performance in research is low compared to international benchmarks

R&D Expenditure as a % of GDP and Number of Utility Patents Granted
By Country, 2005

<table>
<thead>
<tr>
<th>Country</th>
<th>R&amp;D Expenditure as a % of GDP</th>
<th>Number of Utility Patents Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>2.60%</td>
<td>47,021</td>
</tr>
<tr>
<td>Japan</td>
<td>3.33%</td>
<td>29,233</td>
</tr>
<tr>
<td>Germany</td>
<td>2.49%</td>
<td>7,745</td>
</tr>
<tr>
<td>Ireland</td>
<td>1.26%</td>
<td>91</td>
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<tr>
<td>Italy</td>
<td>1.10%</td>
<td>846</td>
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<tr>
<td>Israel</td>
<td>4.49%</td>
<td>637</td>
</tr>
<tr>
<td>UAE</td>
<td>1.80%</td>
<td>2,304</td>
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<td>Mexico</td>
<td>0.50%</td>
<td>48</td>
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<tr>
<td>New Zealand</td>
<td>1.17%</td>
<td>70</td>
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<tr>
<td>Singapore</td>
<td>2.36%</td>
<td>281</td>
</tr>
</tbody>
</table>

In 2006, university research in the USA was responsible for:
- 3255 patents issued
- 4963 license agreements signed
- 697 new products introduced to the market by active licensees
- 553 new startup companies formed

Note: Utility patents (i.e., patents for inventions) granted during the indicated time period. Patent origin is determined by the residence of the first-named inventor listed on the patent grant.
Source: UNESCO Online Statistics Database; U.S. Patent and Trademark Office; ADEC Higher Education Team analysis; Association of University Technology Managers (AUTM)
The majority of universities focus on academic instruction with few institutions supporting research initiatives.

Academic Instruction & Research at Universities in Abu Dhabi, 2009

Academic Instruction & Research

Academic Instruction Only

Federal Universities

Non-Federal

Highest Degree Awarded:

<table>
<thead>
<tr>
<th>Certificate / Diploma</th>
<th>Bachelor</th>
<th>Master</th>
<th>PhD</th>
</tr>
</thead>
</table>

Number of Degrees Awarded: Low → High

Note: Research activity is undertaken by contractors at Griffith University
Source: ADEC Higher Education Team Analysis
ADEC’s Higher Education Strategy will focus on four priorities

<table>
<thead>
<tr>
<th>Priorities</th>
<th>Flagship Strategic Initiatives</th>
</tr>
</thead>
</table>
| Raise the Quality of Abu Dhabi’s Higher Education System to Internationally Recognized Levels | - Develop a tri-partite cooperative program (ADEC, Universities, P-12 Schools) to help transition P-12 graduates to Higher Education  
- Incentivize Higher Education institutions to seek institution and program-specific accreditation from internationally recognized accreditation bodies  
- Monitor and support ADEC’s existing partnerships to ensure their success |
These priorities will translate into specific strategies

Abu Dhabi Higher Education Landscape

Abu Dhabi Government

- Abu Dhabi Education Council

Federal Government

- Ministry of Higher Education & Scientific Research

Academe

- Partner Institutions
- Private Institutions
- Federal Institutions
- Research Centers/Think Tanks

Raise Quality

- P-12 Reform
- International Accreditation
- Partnerships

Align with Priorities

- Enhance Modularity
- Qualification Framework
- Human Capital Planning
- Guidance
- Women Employability

Foster R&D

- Research Fund
- Post-Grad Programs
- Research Centers

Increase Access

- Community Colleges
- Scholarships
- Special Needs

Industry (Example Priority Sectors)

- Semiconductor
- Aerospace
- Renewable Energy
- Health

NON-EXHAUSTIVE

Source: ADEC Higher Education Team Analysis
ADEC recommends establishing a Committee for Human Capital Development to ensure the needs of the Emirate are properly met.

**Committee for Human Capital Development**

**Mandate of the Program Development Committee**

- Oversee the overall alignment of Higher Education programs with the Emirate’s priority economic sectors
- Establish mechanisms and forums to identify the Emirate’s human capital needs based on long-term socio-economic needs
- Define strategies to incentivize Higher Education institutions and learners to achieve the long-term vision
- Assist universities through non-financial means (e.g. liaison, partnership facilitation, licensing and accreditation)
- Monitor the progress in program development in alignment with Emirate needs and monitor the use of funds

**Members**

- ADEC
- MoHESR
- Federal or local labor authorities/DED/Department of Finance
- Universities
- Reps from industry
- Reports directly to the Executive Council

Source: ADEC Higher Education Team Analysis
ADEC aims to develop a cooperative R&D ecosystem linking government, academia and industry

**Abu Dhabi Target R&D Ecosystem**

**Academia**
- Conduct research
- Collaborate with industry

**ADEC’s Role**
- Serve as a catalyst for the establishment of new programs aligned with priorities
- Provide student research scholarships in relevant fields

**Government**
- Set regulations
- Provide incentives to encourage R&D
- Protect intellectual property
- Guide priorities through regulations and incentives

**ADEC’s Role**
- Establish Abu Dhabi research funding agency
- Foster a research enabling environment (e.g. IP protection, etc.)

**Industry**
- Provide funding and set priorities
- Conduct research (in-house)
- “Commercialize” the resulting output

**ADEC’s Role**
- Coordinate with Abu Dhabi industry to better align education with priorities
- Facilitate partnerships between academe and international industry
- Coordinate the establishment of business incubators

**R&D Ecosystem**

**Academic Outcomes**:
- Papers
- Citations

**Commercial Outcomes**:
- Patents
- New products
- New enterprises

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**Notes:**
1) ADEC’s role towards Government, other than itself
Source: ADEC Higher Education Team Analysis
ADEC recommends the set-up of a Committee for Science and Technology Research to guide the Emirate’s R&D strategy and oversee its implementation.

Committee members will include Scientists and Engineers.
Committee will regularly interact with the Human Capital Development Committee.
There will be cross membership across both committees.

Executive Council

Committee for Science and Technology Research

Sector-specific Sub-committee (e.g. semiconductor)

Abu Dhabi “Innovation Agency” (DED-led initiative)

Aligned to Abu Dhabi’s priorities and focus sectors: Microelectronics; Aerospace; Renewable Energy; Health; and Culture and Arabic Language Studies.

Other Research Funds/Philanthropy
Businesses
Other Government Agencies (e.g. KDF, NRF)

Individual Researchers
Universities/University-affiliated R&D Centers
Standalone R&D Centers
Business-embedded R&D Centers
Incubators
A new Abu Dhabi research funding agency will invest in research in strategic areas aligned with Abu Dhabi’s priority sectors.

Overview of Proposed Abu Dhabi Research Funding Agency

Objectives

- Increase the magnitude of funding for research and development in Abu Dhabi
- Increase "public venture capital" of innovative projects
- Ensure that research in areas of national priority is put at the forefront
- Pool resources from federal, industry, and university and direct research activities under one umbrella
  - Financial resources primarily from government and industry
  - Scientific and research expertise primarily from academia
  - Equipment and facilities from academia and industry
- Allocate funding on a competitive basis

Operating Model

- Executive Council appoints Chairperson and Board members
- The Funding Agency will be established under ADEC
- Board composed of members from ADEC, MoHESR, major universities and private companies active in R&D (e.g.: Mubalada)
- Entity is funded from joint Government and industry budget
- Funding allocation is at the discretion of the entity and supervised by ADEC
- Entity allocates funding on a competitive basis and monitors use of funds
- Main beneficiaries are universities and research centers both public and private
- Entity needs broad local reach (network with private sector and universities)
- A small workforce is required
Abu Dhabi will build and maintain a research ecosystem to drive an innovation-based economy

Abu Dhabi Higher Education Ecosystem
Priority 3 - Research

Inputs
- Funding
  - Public expenditure on research exceeds 0.75% of GDP by 2018
  - Abu Dhabi research funding agency operational by 2011
- Students
  - N/A

Operating Model
- Universities
  - 14 endowed professorships by 2010, 1 in each of Abu Dhabi’s priority sectors and 1 for each high-priority sub-sector
  - 5 major university-affiliated research centers by 2018
- Government
  - Formation of an Abu Dhabi innovation agency
  - Internet infrastructure upgraded and network of public libraries created by 2014
  - Resolution of gaps in the IP protection framework
- Industry
  - 3 business incubators in Abu Dhabi institutions by 2018
  - 4 annual research conferences/events from 2010
  - Corporate R&D partners operational in free zones by 2013

2018 Outcomes
- Research
  - Annual number of utility patents granted exceeds 50
  - Average number of annual citations per faculty is 1 by 2018
- Graduates
  - Annual percentage of National graduates with PhDs exceeds 2% of all graduates

Source: ADEC Higher Education Team Analysis
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Research Funding
Sample Projects
### Initiative Summary

<table>
<thead>
<tr>
<th>Outline Description</th>
<th>Overall Objective</th>
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<tbody>
<tr>
<td>An independent Government agency to oversee funding of fundamental and applied research, to be responsible for developing and enabling the R&amp;D agenda for Abu Dhabi through two main functions:</td>
<td>1. Set the direction for R&amp;D in Abu Dhabi</td>
</tr>
<tr>
<td>1. Provide competitive proposal-based R&amp;D project funding according to areas of focus in the R&amp;D agenda</td>
<td>2. Enable the R&amp;D agenda for Abu Dhabi, through providing funding for basic &amp; translational research underpinning industrial requirements</td>
</tr>
<tr>
<td>2. Establish, oversee and fund Research Centres of Excellence hosted in alignment with AD's higher education institutions. The current identified focus areas include:</td>
<td>3. Build R&amp;D capacity and develop know-how in Abu Dhabi</td>
</tr>
<tr>
<td>▪ Microelectronics</td>
<td>4. Engage with international partners on R&amp;D priorities</td>
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<tr>
<td>▪ Aerospace</td>
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<td>▪ Energy (oil &amp; gas and renewable)</td>
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<tr>
<td>▪ Health</td>
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<td>▪ Culture and Heritage</td>
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Initiative Activities

1. Develop a consolidated R&D agenda
   - Based on the high level guidance of the CIRD, develop a consolidated R&D agenda and annual delivery plan
   - Delivery Plan will be subject to endorsement by the CIRD
   - This agenda will inform the funding decisions of the Agency

2. Manage proposal-based R&D funding
   - Design of competitive funding process, including establishment of a peer review network
   - Calls for proposals aligned to priority sectors
   - Evaluation of proposals
   - Awarding of contract funding

3. Manage non-competitive research
   - Manage and peer review research on behalf of other government entities

4. Set up Monitoring Mechanisms and Monitor Progress
   - Set up reporting mechanisms
   - Set up monitoring mechanism - dependent upon individual project KPIs
   - Establish financial monitoring systems to facilitate release of funding

5. Develop & establish Research Centers of Excellence
   - Selection on order of the development of the Research Centers of Excellence is required, linked to the development of an R&D agenda for Abu Dhabi
   - Identify Abu Dhabi and international industrial R&D strategic partners
   - Forge and manage agreements with these partners in RCoEs

6. Oversee Research Centers of Excellence
   - Launch of the first Research Center of Excellence
   - Detailed operating model to be produced, including size, scope and expected outcomes
   - Implemented with regular check points and monitoring
Operational model

Overview

- The Research Funding Agency will be a stand-alone organization that will be incubated by ADEC
- Drafts the R&D agenda for Abu Dhabi based on the high level direction set by the CIRD
- Distributes funding for R&D activity in Abu Dhabi through competitive and non-competitive channels

CIRD

- Advise on STI development
- Guide and review STI strategies, plans, and R&D agendas

Research Funding Agency

- Draft R&D agenda with CIRD guidance
- Execute approved R&D agenda

Competitive Funding

- Proposal-based projects
- Infrastructure (universities’ small research centres)

Research Center of Excellence

- Infrastructure
- Equipment
- Staff costs
- Operational Costs
- Maintenance
- R&D projects

Competitive University R&D

- Funds projects and equipment in Universities and research centres interacting with RCoE’s (Peer Reviewed)

Non-Competitive Funding

- Manage and peer review research on behalf of other government entities

Options for reporting

- Crown Prince of Abu Dhabi
- Vice Chairman’s Office
- Executive Committee

Executive Council

- Approve and delegate STI strategies, plans, R&D agendas, and budgets

Two-way consultative process

Advise and endorse the R&D agenda
Operating Model
Process Overview – Competitive University R&D Funding

Overview
- The review process for competitive R&D funding will take approximately 7 months
- Estimated receipt of 200 proposals annually during the early stages
- The number funded will be dependent upon quality

1. RFA Announces Award
   - Research proposal Submission Period opens

2. Evaluation Panel Recommendations
   - R&D program Manager Review

3. Final RFA internal Review with Executive Director
   - Internal review between program managers and Executive Director
   - Final Decision on funding by Board

4. Payment of grant and regular audits
   - Drafting of grant contract
   - Payment of grants
   - Assessment of project progress as well as monitoring of fulfilment of funding conditions
   - Tracking of key metrics like publications and citations generated by the funded project

Proposal Preparation
- 2 Months

Proposal receipt and review
- 3 Months

Processing of award
- 2 Months
Operating Model -
Development Path for Research Centers of Excellence

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<thead>
<tr>
<th>Planning Phase: 0 – 6 months</th>
<th>Build-out Phase: 6 months – 3 yrs</th>
<th>Expansion Phase: 3 years +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select focus areas</td>
<td>Establish Emirate-R&amp;D center</td>
<td>Extend R&amp;D capabilities and scale</td>
</tr>
<tr>
<td>Select up to 4 closely related R&amp;D focus areas in each of the fields of:</td>
<td>Design and build R&amp;D centers in the selected focus area with key parameters:</td>
<td>Offer major infrastructure grants that fund development of R&amp;D centers in sectors closely related to the existing focus areas</td>
</tr>
<tr>
<td>• High tech design and manufacturing</td>
<td>• 100 staff members, and 20 scientists per focus area (module)</td>
<td>Scale the Emirate-R&amp;D centers with modules related to the focus sectors with industrial co-investment</td>
</tr>
<tr>
<td>• Energy</td>
<td>• Applied research, closely related to industrial needs, preferably with co-investment from industrial partners</td>
<td>Introduce R&amp;D grants in R&amp;D focus sectors as well as in broader, target sector independent “core” R&amp;D sectors:</td>
</tr>
<tr>
<td>• Healthcare</td>
<td>• State-of-the art R&amp;D infrastructure and facilities</td>
<td>• R&amp;D project grants, funding researchers, equipment and project related infrastructure, as well as operating costs for up to 5 years</td>
</tr>
<tr>
<td>• Aerospace</td>
<td>Costs:</td>
<td>• Endowed chairs in target sectors</td>
</tr>
<tr>
<td>R&amp;D focus areas must be very specifically defined, for example:</td>
<td>• ~300 million AED per center, depending on the industry focus</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information and communications technology (ICT) R&amp;D</th>
<th>Semiconductor ICT R&amp;D</th>
<th>Microprocessor R&amp;D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example focus area: Low-energy microprocessor R&amp;D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Time to build and start operation: • ~1-2 years
Abu Dhabi Education Reform: The Road to 2030

Overview of P-12
Overview of HE
Research Funding
Sample Projects
1- Universities ranking

Problem Areas/ Objectives
To rank the HIs in Abu Dhabi

Overview
• Comprehensive review of the HE Education System in Abu Dhabi conducted by ADEC experts using the best international practices such as Times and Academic Rankings of World Universities (ARWU),

Approach
Engage the HEIs and stakeholders in a thorough analysis for the HE system in Abu Dhabi

Impact
• Make higher education information transparent and accessible
• Encourage universities to improve education quality

Key Achievements / Benefits
❑ A descriptive manual that includes a final version of a comprehensive ranking and assessment approach
❑ Capacity building for the universities staff for future implementation of the ranking project
❑ Publish the first ranking table for Abu Dhabi universities.

Visuals

Timeline

<table>
<thead>
<tr>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4 ’11</td>
<td>Q1 ’12</td>
</tr>
</tbody>
</table>

Status | Impact | Key:
|-------|-------|---
| Planned | Completed | On-Track |
|       |       | Slight Delay |
|       |       | Off-Track |

High
2- Funding model

Problem Areas/ Objectives
- To develop a funding model for Abu Dhabi’s universities.
- To strengthen the capacity of ADEC in key aspects of universities funding.

Overview
- Developing a funding model that addresses the financing of instruction, operations, and capital investment as well as university-based research. The project was conducted by ADEC experts with PWC.

Approach
- Engage the HEIs and stakeholders to develop a unified funding model for the HEIs.

Impact
- Improve the efficiency of allocating the government funds
- Align the universities outcomes with the HE strategic plan

Key Achievements / Benefits
A comprehensive report that documents
- The proposed funding model
- The needed data and Indicators.
- The results of the project with recommendations and modifications.

Timeline
<table>
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<tbody>
<tr>
<td>Q3 ’11</td>
<td>Q1 ’12</td>
</tr>
</tbody>
</table>

Status Impact
High

Key:
- Green: On-Track
- Yellow: Slight Delay
- Red: Off-Track
### 3- Sustainable alignment fora

#### Problem Areas/ Objectives
- Inform the HEIs with the R&D and human capital needs of the priority sectors in the coming five years.
- Bridge the gap between academia and industry/employers

#### Overview
- Aligning the Higher Education system with the labor market needs conducted by ADEC experts

#### Approach
- Engage the HEIs and priority sectors in joint events and gap analysis exercises

#### Impact
- Align the HE system with the labour market needs in terms of Human Capital and R&D

#### Key Achievements / Benefits
- A comprehensive report that includes a full gap analysis between the supply of graduates and the labor market demand
- Developed enrolment scenarios for different HE programs
- A full understanding of the human capital and R&D needs for six priority sector namely education, semi conductor, health, culture and heritage, aerospace and oil & gas

#### Timeline

<table>
<thead>
<tr>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2 ‘11</td>
<td>ongoing</td>
</tr>
</tbody>
</table>

**Status**  | **Impact**
---|---
On-Track  | High

**Key**:
- Green: On-Track
- Yellow: Slight Delay
- Red: Off-Track

---

**Sustainable alignment**

**Sectors**
- Inform universities and stakeholders with their strategic plans at large
- Inform universities and stakeholders with their research needs
- Identify universities and stakeholders with their human capital needs

**Universities**
- Improve the alignment of education provision with the sectors’ needs
- Strengthen the alignment of skills training with labour market needs
- Enhance their research relevance to the sectors needs

**ADEC**
- Identify the HE student enrolment in the coming five years
- Track students progress and graduate employment outcomes
- Oversee the relevance of research with the Abu Dhabi vision 2030
- Boost the university-sector linkage
- Identify the imbalances, both quantitative and qualitative that in the education system

**Abu Dhabi Economic Vision 2030**
4- The Higher Education simulation model

Problem Areas/ Objectives
Develop the first comprehensive simulation model for the higher education system in Abu Dhabi to develop different enrolment scenarios and resources implications.

Approach
Collect the relevant data that covers all education sectors and use the UNESCO/OECD indicators to develop the simulation model.

Impact
Full understanding of the education system dynamics and future trends of enrolments and graduation.

Overview
- Collecting the baseline data for the HE system and develop different enrolment scenarios based on the age group population and the graduates of the secondary education schools.

Visuals

<table>
<thead>
<tr>
<th>Problem Areas/ Objectives</th>
<th>Approach</th>
</tr>
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<td>Develop the first comprehensive simulation model for the higher education system in Abu Dhabi to develop different enrolment scenarios and resources implications.</td>
<td>Collect the relevant data that covers all education sectors and use the UNESCO/OECD indicators to develop the simulation model.</td>
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Key Achievements / Benefits
- A comprehensive report that includes a full gap analysis between the supply of graduates and the labor market demand.
- Developed enrolment scenarios for different HE programs.

Timeline

<table>
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<tbody>
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<td>Planned</td>
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</table>

Key:
- On-Track
- Slight Delay
- Off-Track

Key:
- Start: Q2 ’11
- End: Q4 11
- Status: High

Impact: Full understanding of the education system dynamics and future trends of enrolments and graduation.
5- The research and development landscape (Bibliometric analysis)

**Problem Areas/ Objectives**
- Review the research capacity of the HEIs in Abu Dhabi together

**Overview**
- Collecting a comprehensive set of data on the scientific publications, citation per faculty, citation per paper, and impact factor

**Approach**
- Use the international research databases such as Scopus

**Impact**
- Extensive report on Abu Dhabi scientific publications to enhance ADEC’s understanding for Abu Dhabi research capacity

**Key Achievements / Benefits**
- A comprehensive report that includes a detailed analysis for different HE disciplines covering the following:
  - Citations per faculty per year
  - Citations per published paper per year
  - Number of papers published in peer-reviewed journals per faculty per year

**Timeline**

<table>
<thead>
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<tbody>
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<td>Q1 12</td>
</tr>
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<td>Impact</td>
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**Visuals**
- Scientific publications per full-time faculty members (2010)

- ADU: 0.28, AI Ain: 0.06, ALHOSN: 0.14, ECAE: 0.02, Fatima College: 0.00, HCT: 0.09, INSEAD: 0.40, Khalifa: 0.72, MASDAR: 0.75, NYIT: 0.11, NYU: 0.44, PSUAD: 0.00, Strathclyde: 0.00, UAEU: 0.59, UMSA-AD: 0.00, Zayed University: 0.31