



Workforce Development and Entrepreneurship Education in the Middle East & North Africa:

Case Studies on Community College and Technical Education Partnerships

August 2015

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ABOUT HIGHER EDUCATION FOR DEVELOPMENT

Higher Education for Development (HED) diversifies, expands, and deepens the engagement of higher education in international development, focusing on the human capital development and institutional strengthening necessary for economic growth and social advancement. In support of that aim, HED manages partnerships between U.S. higher education and overseas tertiary institutions, funded primarily by the U.S. Agency for International Development (USAID). By mobilizing the expertise and resources of the higher education community, these partnerships address global development challenges.

HED manages a competitive awards process to access expertise with the higher education community in coordination with the American Council on Education (ACE), the American Association of Community Colleges (AACCC), the American Association of State Colleges and Universities (AASCU), the Association of American Universities (AAU), the National Association of Independent Colleges and Universities (NAICU), and the Association of Public and Land-grant Universities (A.P.L.U.). Through a Leader-with-Associates Cooperative Agreement, signed in September 2005 (AEG-A-00-05-00007-00) USAID's Bureau for Economic Growth, Education, and Environment (E3) provides support to Higher Education for Development.

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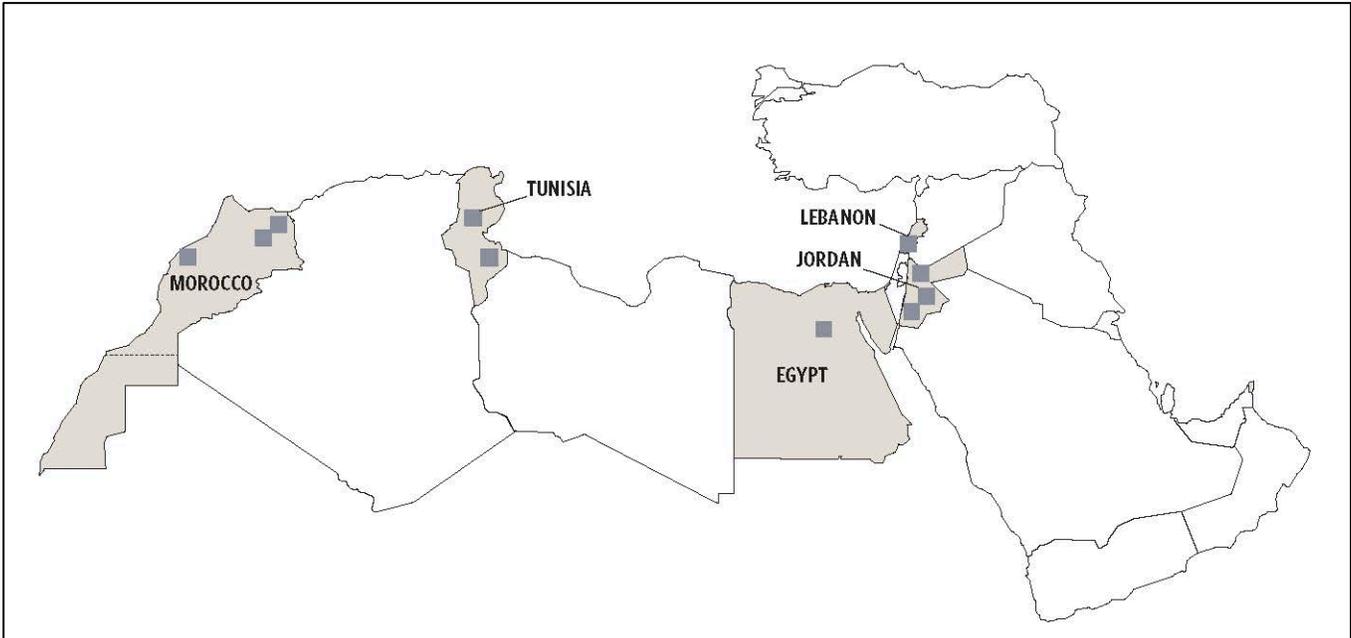
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CASE STUDY INTRODUCTION

By Matthew D. Kuehl

The quality and relevance of education for workforce development and entrepreneurship is a serious challenge throughout the Broader Middle East and North Africa (BMENA) region. Millions of young people leave school with few marketable skills. All too often, the focus on education reform in the region has not been at the middle skills training level. In the U.S., the community college model represents one successful approach to facilitating the school-to-work transition; however, it is rare to find community colleges or similar institutions functioning with the same degree of success in the BMENA region. It follows that partnerships between community colleges in the U.S. and tertiary education institutions in the BMENA region have the potential to improve workforce education and employability outcomes by sharing transferrable methodologies and strategies for connecting academic programs to local and regional employment needs.

In June 2009, Higher Education for Development (HED), along with the U.S. Department of State (USDOS), U.S. Agency for International Development (USAID), and the U.S. Department of Education (USDOE), sponsored a two-day conference in Jordan about community colleges and tertiary education institutions as part of their support for education and human development efforts under a new BMENA Initiative. The symposium provided regional education leaders and officials with information about the U.S. community college and vocational education as an important model for facilitating the school-to-work transition. Symposium participants discussed how U.S. community colleges operate in today's changing economic climate and how to develop and administer community and technical/vocational education programs in their respective countries. The symposium offered government officials, academic leaders, and the private sector from both regions the opportunity to exchange ideas on how to address some of the challenges facing community and technical colleges, particularly as they related to workforce development, entrepreneurship, and more broadly, employability skills. An outcome of this conference was the procurement of funding for U.S. and BMENA tertiary educational partnerships to address these development challenges.



Map of BMENA Partnership Case Study locations

BMENA-U.S. COMMUNITY COLLEGE INITIATIVE AND TUNISIA JOBS

With support from the USDOS, USAID, and in collaboration with the USDOE, HED competitively-awarded funding to 10 higher education institutional partnerships in five countries of the region (Egypt, Jordan, Lebanon, Morocco, and Tunisia).¹ These partnerships were designed to nurture entrepreneurship skills and workforce development among students and improve teaching methods and curriculum that meet the needs and standards of productive economic sectors in the region. The BMENA partner institutions ranged from public and private community colleges in Jordan, to technical institutes and colleges in Egypt, Morocco and Tunisia, and a private university in Lebanon. The common factor among these institutions was their shared goal of graduating students prepared to enter the workforce in high demand fields.

The BMENA-U.S. Community College Initiative grew out of four partnerships supported under “Small Grants BMENA I” and four partnerships under “Entrepreneurship Proposal Grants BMENA II”. These initial short-term development grants (~six months-one year; \$60,000-\$160,000 each) were funded by the U.S. State Department’s Office of the Middle East

¹ Note that HED also awarded two additional partnerships in Bahrain and Yemen which were subsequently closed for political and/or security reasons.

Partnership Initiative (MEPI) through a USAID cooperative agreement with ACE/HED. Despite their initial brief performance period, the grantees developed strong relationships and laid the ground work for improved teaching methods and curriculum development opportunities in areas such as solar technology, entrepreneurship, automotive diagnostics, mechatronics, and business plan development. In 2012, BMENA I small grant partnerships were scaled up for expanded implementation and BMENA II proposal development partnerships were awarded their longer-term implementation grants for project duration periods of four to five years. Originally funded by the USDOS with the involvement of the USDOE, the longer-term partnerships were funded primarily by USAID. The Tunisia JOBS awards, which partnered the University of Colorado with three Tunisian technical schools, received two three-year awards with split funding from the USDOS and USAID.

CASE STUDY DEVELOPMENT

In December of 2014, HED coordinated a final BMENA Partners Meeting in Marrakesh, Morocco, that brought together individuals from all partnerships to reflect on their partnership and the legacy they will leave behind. The case studies presented in this volume are an outgrowth of these presentations and discussions.

While there exists literature and reports on the community college model in international development, very few available resources are grounded in the community college experience in the implementation of international capacity-development projects. Much of the literature focuses on the need for exporting the U.S. community college model with respect to workforce development in developing countries, or on the internationalization of U.S. community college campuses. International partnerships in the community college context tend to focus on international students, study abroad, or faculty exchanges.

The nine case studies presented in this volume fill in this gap with actual, practical lessons learned and recommendations from the field. The case studies illustrate the challenges and opportunities for community college contributions to human and institutional capacity building

in international development. Some of the common themes that partners chose to highlight include:

- Effective teaching methods or curriculum development for workforce development or entrepreneurship education
- Establishing, utilizing, and/or sustaining public-private partnerships or other campus-community partnerships or higher education consortia to support reform
- Institutional systems development and/or policy change for sustaining workforce development of entrepreneurship education programs in a higher education institution
- Overcoming traditional mindsets to implement entrepreneurship programs
- Recognizing local strengths to link academic programs with employment and work-based learning opportunities
- Foundations of strategic partnerships and understanding stakeholder engagement in new ways

The case studies illuminate not only the positive role and contributions community colleges can and do offer, but also reflect on recommended processes for community colleges to engage in these types of international development activities.



BMENA Final Partners Meeting, Marrakesh, Morocco, December 2014.

GENERAL OBSERVATIONS

The BMENA partnerships described here were relatively low-cost (each award is around \$500,000), but over three to five years of implementation the results have transformed and highly-impacted the local tertiary education partner institutions in the BMENA region. Furthermore, U.S. and host-country institutions exhibited a meaningful commitment to the projects through their institutional cost-share contributions. Of the nearly \$5 million of USAID and USDOS funding for these awards, partner institutions contributed roughly \$3.3 million of in-kind and cash contributions, providing just over 65% in matching funding.

The development partnerships occurred in the context in the Arab Spring, and as seen in the case studies, the impact of this varies. All of these partnerships were developed to address the misalignment of education and job preparedness with industry needs and youth unemployment, a major grievance pushing youth to the streets during the Arab Spring. In some post-revolution countries, such as Egypt or Tunisia, subsequent leadership changes amounted to program stagnation and suspensions (or in the case of Yemen, full closure). In others, such as Lebanon and Jordan, the influx of refugees added pressure on the macroeconomic situation and youth unemployment. These externalities and implications point to the need to look beyond measuring workforce development or entrepreneurship education in strict terms of job creation. Indeed, even the best designed workforce development training program would be unsuccessful if not aligned with a supportive macroeconomic or political environment.

Role of Community Colleges in International Development

U.S. community colleges have played a relatively new and traditionally limited role in contributing to international development goals and USAID projects. Some challenges for community college involvement have included the lack of institutional resources, scarce engagement opportunities from donors, and insufficient infrastructure and human capacity in supporting large-scale international grant activities, such as proposal development, grant management, donor compliance, and reporting. Furthermore, community colleges tend to focus on their immediate local community and realize the importance of internationalization on the home campus through international student recruitment, study abroad, faculty exchange,

and internationalizing the curriculum. Engaging in international capacity development projects abroad have not had the same institutional priority, as the results from engaging in such activities are not as readily apparent on the home campus. As the case studies presented here demonstrate, the positive results for the U.S. colleges in the partnerships are notable in developing institutional capacity and creating benefits to the local community.

In many developing country contexts, it is the middle technical fields that are most neglected; strengthening the capacity of tertiary institutions to improve the relevancy of associate or technical degrees to industry needs can have a profound impact. Furthermore, career and technical education students are more likely to open small and medium sized enterprises or become small business owners, but need entrepreneurship skills training in order to be successful. Development initiatives looking to strengthen workforce development and entrepreneurship can leverage intimate knowledge from U.S. community colleges, as they perform this role in their local communities.

Technical education is often disenfranchised in developing countries, and despite this adversity, partnership-based projects have had a high impact and strong local commitment. Faculty, staff, and students at these tertiary education institutions are often from underserved communities, and the case studies illustrate their incredible enthusiasm and dedication to personal and institutional development. Low salaries and outdated learning environments further drive and incentivize participants to commit to development initiatives. Through donor and government investments in technical education in developing countries, these activities are building the institutional capacity in targeted sectors to be self-generating and sustainable; that is, tertiary education institutions can sustain development objectives through continuous learning and graduating students with new employable skills.

As global higher education priorities aim to address the youth unemployment problem and focus on workforce development and entrepreneurship, U.S. community colleges are uniquely positioned to effectively contribute to implementing projects in this realm. While there is recognition that the community college “model” is needed and effective in addressing these issues, little has been done to incentivize community colleges to become global actors in the development arena to implement these models. The lack of understanding of community

colleges have often left them in a position of being unable to compete with universities in funded proposals from the same agencies that wish to engage them. HED, both through these BMENA partnerships and in previous projects, has a long history of recognizing the value of community colleges as development partners and has endeavored to avoid the barriers described above in engaging community colleges in education and workforce initiatives.

Partnership vs Project Based Development

Traditionally, the international development field tends to employ the expertise and capacity of U.S. higher education as needs arise in projects. This approach generally views American higher education as transferring knowledge to address the needs of a sector or institution. This project-based approach to engaging higher education overlooks local knowledge and strengths as well as potential broad and mutual benefits of developing higher education as an end in itself. Instead, project-based approaches often utilize higher education as a means to an end, such as contributions to macroeconomic development priorities or even specific expertise such as water management. This approach sidelines the benefits of partnership-based development:

- Institutional partnerships are larger than individual projects, and often allow for more flexibility (such as during the Arab Spring), idea generation (since it is not limited to one project), and sustainability (after project funding ends, the partnership still continues).
- Partnerships encourage common understanding, exchanges of culture and ideas, and relationship building. Establishing trust and respect prior to defining a scope of work enables joint-determination of objectives and intended results, shared strengths and resources, and mutual benefits to both partner institutions.
- Partnerships encourage peer-to-peer mentoring, which has been shown effective for self-reflection both at the home and host institutions. It allows both partners to refine ideas and adapt to changing circumstances, resulting in lessons learned and best practices. Peer-to-peer mentoring also strengthens human and institutional capacity building at the respective institutions.

Institutional Reform within Centralized Higher Education Systems

There is a perceived wall to modifying curriculum or making other institutional reforms at higher education institutions in centralized higher education settings, particular in the Middle East & North Africa. This challenge has increased even more so after the Arab Spring, with conflicting priorities and multiple changes of decision-makers and leaders at government ministries. Many observers point to the need for overcoming this challenge by aligning curriculum to industry, prospective economic sector growth, and local community needs, but do not expand upon ways in which to achieve this in a top-down, highly centralized environment. Despite this often cited challenge, all partnership case studies in this volume were successful in revising or creating new curriculum, whether directly with official approval or indirectly through supplemental approaches, in order to improve the relevancy of tertiary degree programs. Some successful approaches have included:

- Managing-Up for Approval – Partners who nurture relationships and receive buy-in from decision-makers in the relevant ministries have been most successful at getting new or revised curriculum official approved. Some strategies to facilitate approvals have included inviting ministerial decision-makers to events, conferences, or meetings; actively seeking and incorporating ministerial input to cultivate ministerial “ownership”; utilizing private sector partners and other stakeholders to exert pressure on the ministry; demonstrating capacity in new or revised curriculum delivery at the institution to show initial results for new programming; capitalizing on existing personal relationships to decision-makers; and documenting the process and phase approvals in writing in case of changes in leadership (and when leadership changes, ensuring that the new leaders see value in his/her predecessor’s support).
- Enrichment/Elective Courses – When it not possible to add or replace components or courses to existing approved curriculum, one approach is to add an institutionally-approved and required enrichment course, particularly if it is not discipline-specific (such as entrepreneurship). Similarly, if the core curriculum of a program cannot be revised, adding a more relevant or updated elective course to a field of study can be another solution that often only requires institutional approval (for example, adding a renewable energy elective course in the mechanical engineering program).

- Instructional Approach – In addition to or in the absence of curriculum revision, investing in teaching methods and pedagogy can increase workforce relevancy by moving from theory-based to applied-based instruction. Facilitation of entrepreneurialism and critical thinking in student learning increases their employability skills.
- Supplemental Coursework– While retaining existing curriculum, some partners updated syllabi or added modules to include new activities and assignments, such as classroom toolkits, that bolster entrepreneurial thinking and applied learning to real-world case studies.
- Experiential Learning – Many partners increased experiential and applied learning by introducing internships for students in conjunction with private sector partners, or capstone graduation projects and presentations addressing local issues.
- Updating Labs – Equipping labs with new equipment, materials, and software (along with the associated instructor training and student access) can supplement curriculum with hands-on learning.
- Industry Certifications – Adding industry-recognized certification training and testing to an existing curriculum will increase a student’s marketable skills in that sector. Working with private sector partners can help identify the most appropriate certifications for industry needs.
- English Language Programs – Establishing an English language program on campus can supplement workforce development or entrepreneurship education by increasing student language proficiency. In many developing countries, English language proficiency is a highly employable skill and can afford students with new opportunities.
- Student Services – Extra-curricular services, such as establishing a student-use business incubator on campus, can reinforce student learning in new entrepreneurial curricula. Other student services, such as a learning center or center for students with disabilities, can increase access to new programs.

Other implementation challenges to centralized decision-making in higher education cited by partners have included difficulty in targeting and recruiting students to new programs due to centralized admissions, lack of flexibility in cash flow and financial structures inhibiting local expenditures, inability for career and technical education students to bridge to university, and restrictions on financial incentives for faculty and staff involvement on specialized projects. As these case study partnerships are institution-to-institution, policy and administrative reforms at the ministerial and national level are not addressed and partners needed to seek creative solutions.

Public/Private Partnerships

Identifying skills gaps in high demand fields is the foundation for a tertiary education institution initiating a partnership with the private sector or vice versa. However, for this initiation to occur, the private sector business needs to view the education institution as a credible partner, and the educational partner needs to accept private sector input as a value added for students. The tradition of private sector engagement with public higher education institutions is not widely present in the BMENA region. Some governments (for example Morocco and the United Arab Emirates) in the region have made linkages between the private sector and higher education a priority², and it appears this gap is finally beginning to be addressed in a serious way in the region. The private sector needs to be made aware of the benefits of investing in their local educational and training institutions. The accomplishments of the partnerships described in this volume demonstrate that it is not only critical to develop these partnerships if youth employment outcomes are to change, but offer ideas for how to engage with the local business community.

The private sector has typically been engaged to support the alignment of a particular training or degree program to industry needs after the design process has started. Such activities tend to focus on forming advisory boards, soliciting input into curriculum, donating equipment or expertise, renovating labs, commercializing or funding research, sponsoring scholarships, and providing internships or job placement. Some of the case studies here will also demonstrate that engaging private sector partners prior to establishment of a scope of work strengthens ownership and buy-in during the baseline and design stage, which has been shown effective for continual support throughout the process. Furthermore, strong public/private partnerships can help set regional or national standards and benchmarking in workforce skills, and exert additional pressure to a ministry for official approvals, such as new or revised curriculum.

² TEMPUS. (2012). *Higher Education in Morocco*. Brussels, Belgium: Education, Audiovisual and Culture Executive Agency (EACEA); Wilkens, K. (2011). *Higher Education Reform in the Arab World*. Washington, DC: Saban Center at Brookings.

ACHIEVEMENTS TOWARDS USAID EDUCATION STRATEGY

While the subsequent case studies in this volume reflect upon the process of implementing partnership-based workforce development and entrepreneurship education projects, including lessons learned and best practices, some highlights of the achievements and results of these partnerships can be found in below.

The BMENA CCI and Tunisia JOBS initiatives contribute to USAID's Education Strategy Goal Two *to improve the ability of tertiary and workforce development programs to generate workforce skills relevant to a country's development goals*. Notable achievements of these partnerships towards USAID Education Strategy Goal Two results are presented below.

RESULT 2.1: INCREASED ACCESS TO VOCATIONAL/TECHNICAL AND TERTIARY EDUCATION AND TRAINING FOR UNDERSERVED DISADVANTAGED GROUPS

- **Al-Kafaat University (AKU) in Lebanon**, through assistance from the partnership with **Nassau Community College (NCC) in New York**, established a Center for Students with Disabilities. The first of its kind in Lebanon, the center provided inclusive services for 24 students with physical, mental, and other learning disabilities in FY2015.
- **Al Quds College (AQC) in Jordan** and **Eastern Iowa Community Colleges (EICC)** supported 21 underserved students, of which more than 50% were females (n=12), to participate in the annual International Future Entrepreneurs Exchange over three years. The 10-day program brings Jordanian students from AQC to Iowa to meet with local business owners and thereby broaden the students' perspectives about their own business plans.
- **Ecole Normale Supérieure de l'Enseignement Technique (ENSET) in Mohammedia, Morocco**, and **Middlesex Community College (MCC) in Massachusetts** have established a new Global Entrepreneurship Week under a supportive network of the advisory board, comprised of local business, NGO, and

industry leaders. Activities during Global Entrepreneurship Week include student business plan competitions and outreach to underserved local high school students through ENSET student presentations about entrepreneurship.

RESULT 2.2: IMPROVED QUALITY OF TERTIARY EDUCATION AND RESEARCH IN SUPPORT OF COUNTRY DEVELOPMENT PRIORITIES

- **Red Rocks Community College (RRCC) in Colorado** and **al-Husn University College (HUC) in Jordan** developed 24 new courses to establish the only Solar Energy Technology degree program in Jordan. To date, sixty-two (62) students have graduated and 188 are currently enrolled in the program, with over 75% of students receiving tuition financial support. By building capacity in this sector at al-Husn, the college has leveraged additional funds to research the best solar panels for Jordan small-scale installation and a €9 million grant to build a solar field to move the campus to 100% solar renewable energy.
- **Al Quds College (AQC) in Jordan** and **Washtenaw Community College (WCC) in Michigan** launched the first small business incubator at a community college in Jordan. In its first year, the incubator provided 23 students with workspace and mentoring for developing their own small business. Students present their business plans through a quick pitch competition to a panel of judges, comprised of local industry and business leaders who also serve as members of the incubator's advisory panel. The incubator also facilitates entrepreneurial activities on campus, such as boot camps and speaker series, reaching over 450 students.
- The partnership between **Nassau Community College (NCC) in New York** and **Al-Kafaat University (AKU) in Lebanon** has been formally institutionalized to continue and sustain itself after the USAID funding ceases. As part of this continuation, **the State University of New York (SUNY)** is providing extensive support in mentoring AKU for full American accreditation, and partners have already updated

AKU's general education requirements and developed a new School of Health-Related Professions. The partnership has also increasingly supported AKU's transition to English curriculum, such as creating an ESL program that reaches over 300 students each semester and a new English section of business administration to open in fall 2015.

- **Ecole Supérieure de Technologie Oujda (ESTO) in Morocco** and **Gateway Technical College (GTC) in Wisconsin** developed Rapid Prototyping and Product Development courses in the mechatronics lab reaching more than 300 students. Moroccan students design products or industrial models and concretely produce them on 3D printers at ESTO. Students have created new prototypes such as dental implants, prosthetics, a water turbine, and a robotic arm, supporting local entrepreneurship and business development while also empowering them with desirable and employable technological skills.
- The **University of Colorado at Boulder (CU)** and **Institut Supérieure des Etudes Technologiques (ISET) in Sidi Bouzid, Medenine, and Tataouine in Tunisia** have established Sustainable Solution Centers (SSC) at each of the three campuses. The SSCs engage students and faculty with outreach to local communities by conducting a series of seminars, short courses, workshops, and targeted technical assistance in the fields of water management, energy efficiency, and renewable energy in the agricultural and industrial sectors. Through faculty training, new equipment and computer simulation software, the partnership has increased the research capacity of the SSCs and coordinated 15 joint and 8 applied research projects.
- Through the partnership between **Gateway Technical College (GTC) in Wisconsin** and **Ecole Supérieure de Technologie Oujda (ESTO) in Morocco**, 69 faculty from Morocco and the Middle East & North African region and 92 students from ESTO have received certification in Solus Pro or Solus Ultra from the National Coalition of Certification Centers (NC3), increasing ESTO's reputation as a regional center of excellence in the field of automotive diagnostics training. Further training and certification in Torque and MultiMeter equipment is taking place to expand into the

fields of mechatronics, industrial maintenance, and precision measurement, and in total more than 250 certifications have been issued to faculty and students.

RESULT 2.3: IMPROVED RELEVANCE AND QUALITY OF WORKFORCE DEVELOPMENT PROGRAMS

- **Ecole Supérieure de Technologie Oujda (ESTO) in Morocco, Gateway Technical College (GTC) in Wisconsin, and the National Coalition of Certification Centers** have developed Morocco's first two-year automotive diagnostics associate degree program, set to open fall 2015. The new automotive degree has established linkages with automotive dealers and centers for curriculum input and to provide students with internships. With funding from USAID and the Kingdom of Morocco, the partnership remodeled and outfitted an unused building on campus into a state-of-the-art, modern automotive diagnostic facility. Partners also trained faculty, equipped training labs with Snap-On diagnostic tools, and revised four (4) mechatronic curricula, with 165 students graduating from updated degree programs.
- Through its partnership with **Eastern Iowa Community Colleges (EICC), Al Quds College (AQC) in Jordan** has introduced and institutionalized entrepreneurship education by requiring all students to take Build Your Business, a semester-long course on entrepreneurial concepts and business plan development. Nearly 1500 students have already fulfilled this requirement. The partnership also has trained almost 75% of the AQC faculty (n=89) through its annual four-day Great Teacher's Workshop, which promotes interactive learning, professional growth, and critical thinking from an entrepreneurial mindset.
- The **University of Colorado at Boulder (CU) and Institut Supérieure des Etudes Technologiques (ISET) in Sidi Bouzid, Medenine, and Tataouine in Tunisia** have developed new courses in Water Management, Renewable Energy Technologies, Entrepreneurship on Energy Efficiency & Renewable Energy, Energy Efficiency, Industrial Refrigeration, and Energy Conservation. At ISET Sidi Bouzid, 246

students have taken new semester courses, and 585 faculty and students at all three ISETs benefited from short-term trainings on the same topics. ISET Tataouine has been approved to open a new Department of Thermal Engineering and Renewable Energy, and ISET Sidi Bouzid has submitted curriculum for a new master's degree in Renewable Energy and Energy Efficiency to the Tunisian Ministry of Higher Education for approval.

- **Ecole Normale Supérieure de l'Enseignement Technique (ENSET) in Morocco** and **Middlesex Community College (MCC) in Massachusetts** have created nine (9) new and five (5) revised bachelors and masters engineering curricula embedded with entrepreneurship concepts. The new programs at Rabat and Moahmmedia integrate experiential opportunities, such as simulation software, work-based experiences, and student business plan development, and 1,231 students have benefitted from the new opportunities.
- Through a public-private partnership among **al-Husn University College (HUC) in Jordan**, **Red Rock Community College (RRCC)**, and the **Consolidated Contractors Company (CCC) in Jordan**, 65 students enrolled in the newly developed Health, Safety, and Environment associate's degree. The first of its kind in Jordan and the region, this new two-year program responds to a need in the construction industry for trained health and safety managers by training students under OSHA standards with hands-on learning on modern equipment in their teaching labs.
- **Ecole Supérieure de Technologie Oujda (ESTO) in Morocco** and **Gateway Technical College (GTC) in Wisconsin** launched the Biz Squad learning model - a collaborative, multi-disciplinary course linking students in Morocco and Wisconsin through video technology. Forty-four (44) Moroccan students gained experiential learning opportunities through the Biz Squad program by providing 13 consultative services businesses in both Wisconsin and Morocco.
- Thirteen (13) faculty from **Washtenaw Community College (WCC) in Michigan** and **Al Quds College (AQC) in Jordan**, who participated in exchanges and joint

collaborative research, developed instructional toolkits aimed at promoting the inclusion of entrepreneurial exercises in the classroom. Forty-three (43) distinct toolkit activities were assembled and shared with faculty in four disciplines at both institutions.

- Through the partnership between **Highline College in Washington** and **Mataria Technical College (MTC) in Egypt**, over 90% of MTC faculty was trained in the foundational level of Universal Design Learning to improve teaching methods, and partners revised curricula aligned with business and industry needs in the culinary, automotive, and appliance repair programs.



Broader Middle East and North Africa–U.S. Community College Initiative

Leveraging Community College Workforce Development Expertise: Creating Educational Pathways to High- Skills Employment at Mataria Technical College in Egypt

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PARTNERSHIP AT A GLANCE

In 2010, Highline College and Mataria Technical College were awarded a grant from USAID through HED to improve teaching methods and increase the relevancy of vocational education and training linked to employment in Egypt. The partnership subsequently received a scale-up award to expand entrepreneurial learning opportunities and industry relationships.

PARTNERS

Highline College, Des Moines, Washington
Mataria Technical College, Cairo, Egypt

USAID SUBAWARD SUPPORT UNDER LWA AEG-00-05-00007-00

Initial grant: \$164,000 (September 1, 2010 – September 30, 2011)
Scale-up grant actual: \$140,809 (award \$374,989) (April 1, 2012 – June 30, 2015)
Total Institutional Cost-share contribution: \$176,495

INTRODUCTION

In 2010, Highline College, based in the Seattle Metro area in Washington, and Mataria Technical College (MTC), in Cairo, Egypt, were awarded a grant from USAID through HED for \$164,000 to improve teaching methods and increase the relevancy of vocational education and training linked to employment in Egypt. The partnership received a subsequent scale-up award of \$374,989 to expand entrepreneurial learning opportunities and industry relationships.

The partnership was conceived to address a gap in the Egyptian technical colleges system by developing curriculum relevant to industry and thus responding to the country's challenge of youth unemployment. The project was based on a shared belief that the teaching methodology employed at Mataria Technical College was not effective in preparing Egyptian students for technical job markets. Another assumption was that stronger pathways to employment needed to be developed for Egyptian students, and that work-based learning experiences and partnerships with industry would be key strategies toward that goal.

PROJECT SUMMARY

The initial project focused on three areas described briefly below:

Improving Pedagogical Methods: Pedagogical improvements were achieved through professional development for MTC instructors in evidence-based teaching innovations, specifically Universal Design for Learning (UDL). UDL provides a pedagogical framework to adopt a strength-based perspective in engaging students, with instructors practicing multiple methods for presenting content and multiple means for students to demonstrate their developing competencies. This integration of teaching and assessment supports evidence-based best practices in teaching technical skills and is designed to increase student engagement in both low- and high-tech environments.

Highline partners first trained a pilot group of MTC instructors in UDL, and then assisted those instructors in training their colleagues. More than 90 percent of Mataria's instructors completed a foundational level of UDL.

Creating Demand-Driven Curriculum: The partners also established a pilot curriculum-development project, aligning the curriculum in MTC's culinary, automotive, and appliance repair programs with the workforce needs of Egyptian business and industry. Mataria instructors reviewed and revised curricula, including industry representation in the development process. The project also helped Mataria to expand relationships with Olympic Appliance, Americana Foods, BMW, and later Mercedes, giving Mataria students access to internships that could lead to employment and earned portable recognized industry credentials. Further, MTC adapted Highline College's successful advisory committee and internship model to the Egyptian context in order to create better educational pathways from Egyptian technical colleges to high-demand jobs.

Creating a Certification and Professional Development Center: The partners designed a Center for Vocational Certification and Teaching Innovation (CVCTI) that was intended to pilot Level 3 certifications for specific vocational pathways and serve as a professional development hub for Mataria and other technical colleges in the region. The need for Level 3 training—technical skills beyond manual labor yet below a baccalaureate degree—was well documented by the Egyptian Ministry of Labor. The goal was that Mataria would be able to offer a practical location for such education for both current students and the broader community. The center would benefit students by engaging them in work-based learning experiences, including a mentoring program pairing students with business practitioners. The partners intended to establish a related internship program. By incorporating knowledge gained from the CVCTI's access to local businesses and industries, the CVCTI was designed to lead the process of infusing entrepreneurial concepts into Mataria's curriculum.

Unfortunately, this project outcome was not achieved. Two Ministers of Higher Education perceived the concept as valuable, but were undermined by jurisdictional conflicts with the Ministry of Labor. The Center never materialized.

Expanding the Partnership: In 2012, the partners received additional funding from HED to expand the partnership. The focus of the second grant was on developing an entrepreneurial and innovative mindset at Mataria that aligned with the more responsive, engaging teaching practices of UDL and establishing deeper ties with local businesses created in the initial project. Partners conducted student and instructor focus groups to assess current resources and needs.

Other potential resources, such as entrepreneurial-based NGOs and community-based services, were identified. With greater emphasis on creativity and multiple ways to demonstrate skills, instructors and students were eager for better access to existing services for entrepreneurs and small- and medium-sized enterprises (SME) development, such as the Social Fund for Development, and for opportunities to connect with new resources, such as the American Chamber of Commerce in Egypt and INJAZ, the Middle East region's version of Junior Achievement.

The successes of the project can be attributed to commonalities that were found between the partnering colleges. Comparable missions of the partner institutions and a strong commitment to the project on the part of staff and faculty at each institution provided a powerful common bond. In fact, we argue that it would be difficult to imagine such synergy existing between institutions that are fundamentally different, such as a U.S. research university working with a technical college in Egypt, or an Egyptian university working with a U.S. community college. The technical education sector in the BMENA region has not had the attention it merits, in part due to political and social instability and perceptions of cultural divides that have precluded strong partnership development in this sector. The HED-BMENA partnerships, like the one described here, have seeded community college engagement in a region and demonstrated that local institutions can benefit from certain community college concepts and approaches.

This case study focuses on how strategic alignment of institutions led to resiliency in a partnership under pressure from external forces. We will also make recommendations related to strategic design of partnerships for other institutions seeking to partner with technical colleges in similar contexts.

EGYPTIAN CONTEXT AND NEED FOR REFORM IN TECHNICAL EDUCATION

Demographic information poignantly demonstrates the rationale for partnerships that address the serious issues facing young Egyptians. Egypt has one of the most youthful populations in the world. An estimated 50 percent of Egyptians are under the age of 25. Just 3 percent of the population is older than 65.ⁱ Youth between the ages of 18 and 29 represent 23.7 percent of Egypt's population (51.1 percent of this population is male and 48.9 percent are female); the unemployment rate for this cohort is almost 29 percent.ⁱⁱ

Public higher education in Egypt is free of charge for students by government mandate, but there are vast differences in access to types of higher education. Technical colleges remain the sole option for students who are not academically eligible for university entrance. These students are doubly disadvantaged, first by an under-resourced pre-college education and second by the current state of technical education in Egypt. The programs in the technical colleges range from one to three years. The majority of the curricula is centralized under the control of the Ministry of Higher Education. Some programs nurture links to employment after completion, but most do not. Partnerships with industry are rare and have not gained active support from MOHE or development agencies. There are no pathways from the technical colleges to the universities and little discussion of building such an articulation. A student who completed a technical college program would still have to pass university entrance exams and would receive no transfer of previously completed work or credits. As reported in a 2008 USAID survey of students, 47% of technical institute graduates were unemployed, mainly because they were unable to find an occupation that matched their areas of study, and 53% reported

that their occupation was not related to training received in the middle technical institute. The report did not distinguish between formal and informal employment.ⁱⁱⁱ

In 2011, a USAID assessment team addressed the gap in curriculum relevant to industry in Egyptian technical colleges for USAID, observing the following:

“...[the] Ministry of Higher Education’s [MOHE] current institutional structures and processes do not allow institutions under its purview to adjust and respond to local labor market demand. Without targeting curriculum and training to local labor market need, a community college experiment in Egypt would fail.”^{iv}

The report further noted that “MOHE’s operating environment is not capable of obtaining the benefits of a U.S. community college model.”^v

While this presents a logical argument, it overlooks a desire by many for higher education to address the blatant social justice and access issues facing Egyptian youth. There is sustained interest within the MOHE from leaders who have first-hand experience with community colleges and see an adaptation of that model to the Egyptian context as a start in improved industry relationships and better training for technicians. At this writing there is discussion of separating the professional-career programs, such as commerce (business) and social services, into a community college that includes a pathway to third-year standing at the university. Traditional trade programs, such as automotive and welding, would continue at existing technical colleges. Similarly, there is interest in working directly with employers to develop curricula that establish graduates as employment-ready and that include such skills as interpersonal communication and customer service. Given the current state of Egyptian higher education this seems daunting, yet interest remains consistent and some in leadership see this as their charge.^{vi}

Anthony J. Perzigian, an advisor to the board of trustees at Future University in Egypt and professor emeritus at the University of Cincinnati (USA), captured the essence of these challenges when he observed that “[t]he case must be made that Egypt’s future depends on the development of its human capital through education. Without that

development, Egypt's capacity to compete in the global arena will continue to suffer, and we will witness Egypt's further economic slide."^{vii} Perzigian highlighted several specific areas for attention, including preparing students for competition in today's increasingly interdependent, interconnected global workplace; expanding entrepreneurship education (a recent study of 38 countries ranked Egypt last in the percentage of adults with suitable training in how to start a business or to take an idea from the lab to a commercialized product or service); orienting Egypt's classrooms so that they focus on cultivating critical thinking and rational thought in ways that encourage innovation, creativity; and, ultimately, economic development.^{viii}

The youth population explosion and high youth unemployment rates in Egypt underscore the need for workforce education that addresses economic development. Community colleges in the United States focus on such needs and are well positioned to advise and partner with Egyptian technical colleges. In that regard, the needs for development at Mataria Technical College and its service area, which are representative of Egyptian technical colleges and their communities in general, can be summarized as follows:

- Responsive, industry-relevant curriculum with appropriate materials and equipment and ongoing mutually beneficial relationships with in-demand employers
- Teaching techniques that promote student engagement, competency development, and work-based learning
- Integration of innovative-entrepreneurial thinking and mindset, practices, and resources.

THE PARTNERSHIP

The college partners in this project had a history of working together prior to the HED project and brought strong motivations to collaborate.

Highline College (Highline) is located in Des Moines, Washington, south of Seattle. Founded in 1961 as the first community college in its county, Highline is the most ethnically diverse college in Washington State-more than 130 languages are spoken on campus and 50 percent of its 10,000 students are non-native English speakers.

The college demonstrates a commitment to international engagement through its mission, strategic plan, and diversity of its service community and student body composition. Highline has a 17-year history in development work with Higher Education for Development and its predecessor organization. The college has a rich history of successful international partnerships in South Africa, Namibia, Indonesia, and China.

There is depth of faculty and staff involvement in international collaboration. Highline began working in Egypt in 2006. The college participated as one of six pilot institutions in the Community College Initiative (CCI) funded by the U.S. State Department and administered by Community Colleges for International Development (CCID). Though primarily a project that brought students from disadvantaged backgrounds from six countries to the U.S. for a one-year community college higher education experience, CCI also funded two rounds for Egyptian educators from technical institutes to come to the U.S. through the Instructors and Administrator Egypt (IAE) Program. Highline served as lead institution for this effort, providing two months of intensive English language training, information technology literacy, and an introduction to the American community college that preceded a broader, seven-month experience that focused on pedagogical strategies, demand-driven curriculum development, business and industry relationships, and administrative strategies that promote student attainment and community engagement.

Mataria Technical College (MTC), located in Cairo, Egypt, serves the greater Cairo area with four institutes on two campuses, Shubra and Mataria. More than 200 full-time and 100 part-time MTC instructors serve more than 18,000 students. Areas of study focus on hotel/tourism, optics, and commercial and industrial services. Many employees of Mataria are also entrepreneurs or hold multiple jobs. This is true for the instructors teaching at Mataria as well. Mataria's location in Cairo is significant; it is a densely populated service area surrounded by community and workforce needs. Most inhabitants have a low income with pockets of significant poverty. While there is a vibrant informal economy, with many entrepreneurs and micro-enterprise endeavors, unemployment remains high, especially among youth. MTC had previously been identified by government agencies as an institution that could be a model for other technical colleges.

In 2006, there was a significant restructuring of Egyptian vocational post-secondary education. Guided by the Egyptian Technical College Partnership (ETCP) and Higher Education Enhancement Project (HEEP), what had been 45 separately functioning institutes across the country were reorganized into eight multi-campus technical colleges focusing on industrial trades and para-professional service-sector training. The restructuring focused on addressing the challenges of outdated equipment, no student access to internet, and resource-poor learning environments. While some efforts were made to update equipment, most instructors did not have the industry experience or training needed to use the new equipment or teach others to do so. Additionally, curriculum remained centralized and top-down through the Ministry of Higher Education, making it difficult to adapt educational programs to new and emerging employer needs.

Developing the Highline-Mataria Partnership: The partnership between the two colleges benefitted from the fact that ten faculty members from MTC participated in the IAE program at Highline. Those participants returned to their college with optimism and many ideas for innovation within their existing structure. These Egyptian educators recognized that the quality program elements taken from their U.S. community college experience would need adaptation for their home country context. Eager to lead in

achieving the goals of the project, they returned to Egypt ready to be operational models, consultants and mentors to support improvements in instructional delivery, develop industry partnerships, and respond to the needs of local employers. Collegial relationships nurtured among Mataria and Highline faculty over the long residency in the U.S. provided a strong foundation for collaboration.

With the announcement of the HED BMENA grants in 2010, Highline and Mataria submitted a project proposal focused on leveraging the workforce expertise of community colleges to build student pathways to living-wage employment in Egypt, emphasizing technical and employability skills and developing mutually beneficial industry partnerships. More specifically, the project sought to accomplish three major goals—creating demand-driven curriculum; improving pedagogical methods to increase engagement and competency attainment; and integrating an innovative-entrepreneurial mindset.

The partners attribute the success and resiliency of the partnership to the strategic alignment of the two institutions. These areas of alignment include the following:

- Mission of serving the local community, including the objective of having graduates find employment within the community
- Serving economically and educationally disadvantaged communities
- Helping students to be well-prepared to enter the workforce
- Faculty who have relevant industry and entrepreneurial experience
- Collegial relationships—shared motivation to reach project-partnership goals as mutually shared and valued outcomes (friendships developed that maintain communication/connection and perpetuate motivation)
- Shared academic areas – optician dispensing, hospitality and tourism, business technology, business (commerce) and entrepreneurship
- Developing and sustaining business and industry relationships

A key challenge in working together has been in the disparity of resources. The partners had to look for ways to surmount the resource issue and still achieve positive change.

Teaching effectiveness was an obvious starting point; industry connections and obsolete curriculum was the next logical area. The process was one of trial and error, finding achievable goals, and adaptation so that transferrable and meaningful outcomes that were mutually determined and beneficial could be realized.

Despite the challenges, some of which are described in the next section, the partnership has endured. Driving the partnership is the desire for something better for and by Mataria students and faculty, and the personal relationships that formed in this context. In addition, Highline has been motivated and inspired by the resilience of the Egyptian partners while their country endured protests, revolutions, and historic, tumultuous change.

STRATEGIC ALIGNMENT OF COMMUNITY COLLEGES AND TECHNICAL COLLEGES

In the not-distant past, international development work in higher education was typically led by research universities. Approaches to the work typically implied a top-down sharing of expertise that assumed that an institution with a richer infrastructure and greater material and professional resources would help address the deficits of the partner institution. The strengths and capacities of the partner institution were seldom addressed and potential mutual benefits of the work were sidelined. Tending to be project-focused, the projects most often ignored the broad benefits that can be gained when two partners collaborate.

The importance of community college engagement in international projects has begun to earn attention because of the relevance inherent in the structure, functions, and spirit of these institutions and the resulting authentic connections with global partners. The flexibility and responsiveness natural to community colleges in serving their diverse communities, using a strength-based model, is transferrable to the global context in projects where the goal is rethinking centralized workforce education. The mission and

focus of community colleges on preparing diverse students for employment and further education underscores the rationale for community college involvement in such international development projects.

RESILIENCY IN THE FACE OF EXTERNAL CHALLENGES

Our project faced significant external challenges, not the least of which was trying to move forward during the Arab Spring and change of power in Egypt. In the face of these challenges, the strengths and capacity inherent in Mataria Technical College's human capital were remarkable and, we believe, offer overarching lessons for advancing the work of a partnership in the face of considerable adversity. This section reflects first on the challenges that the partners faced and then on the lessons that can be drawn from resiliency and perseverance.

Facing External Challenges: Our project faced many impediments over the course of five years. Some were common to those found in many capacity-building projects in developing countries. Others, however, were quite specific to the Arab Spring in Egypt, and to working in a country that, during the course of the project, underwent a revolution and coup.

The Highline-Mataria project successfully withstood the challenges inherent in the first Egyptian revolution in 2011. Despite the inability to have U.S. or Egypt visits as regularly as desired during the period, partners maintained consistent communication and kept each other apprised of project achievements. On the positive side, the first revolution resulted in more outspoken dialog from Mataria staff and students. Our cultural guides shed light on how the change in dynamics of the Egyptian hierarchical structure impacted people used to being silent. This disequilibrium brought forward critical conversations and a solution-focused agenda from faculty and students in our focus groups. The emphasis on improving instruction, responding to students' strengths, and

seeking industry partnerships were vibrant topics. It seemed that staff and students felt empowered and optimistic.

The period approaching removal of President Morsi in 2013, however, proved more problematic, with considerable flux in leadership both at the Egyptian Ministry of Education and at Mataria Technical College. The fact that there were eight different ministers of higher education after the 2011 revolution impacted the project's decision making authority, interfered with project momentum, and diffused the project's direction.

At one point, for example, the project was officially suspended by the Ministry of Higher Education. Ten Mataria educators had planned to visit Highline College for training in July 2013. In June of that year, however, a letter from two administrators at the Ministry stated that the planned visit would be postponed and that the project would be suspended while its goals were adjusted. Shortly thereafter, President Morsi was removed from office. Subsequent efforts to communicate with the MOHE administrators who sent the letter received no response for more than a year, during which time there were ongoing changes in MOHE leadership. Maintaining communication with our partners working at the operational level was difficult during the long suspension. We did not want them to be in a difficult or politically precarious situation by continuing project activities or obvious connections with us. Reliance on informal communication did continue.

In November 2014 we were told by a MOHE official that the project would be reinstated. After traveling to Cairo for that specific reason, there was more shifting of authority at MOHE and we returned without official project reinstatement. The November visit was successful in that MOHE agreed to send two representatives to participate in HED's BMENA meeting in Morocco. This was helpful in gaining the MOU that officially reinstated the Highline-Mataria partnership in February 2015 during a visit to Cairo and meeting with MOHE officials. Even after the MOU was established and agreement that ten Mataria educators would visit Highline College in May for professional development there were unexplained pronouncements from the MOHE

delaying final travel approval while the U.S. visa process and the project timelines were running out. In a final attempt to complete the professional development for Mataria educators, we planned a workshop in Cairo. On the day before the event MOHE proclaimed the need to postpone the workshop. Ultimately it became clear that despite support from key administrators, some people within the Ministry would not ever support our efforts and that neither partner had the power to influence that mindset.

There is little research available to provide guidance for the kind of political challenges our partnership has experienced, but there is supporting evidence of the impact of the instability in Egypt on USAID's work in the country:

“One of the most commonly cited Arab Spring challenges—and a main cause for project delays—was the difficulty of working with the cadre of ever-changing counterparts from the Egyptian Government...According to mission officials, in the 3 years since the Arab Spring began, Egypt has had seven new health ministers, eight new higher education ministers, and four new ministers of international cooperation. Sometimes a decision made by one minister would be reversed by a successor. As one implementing partner stated in its report, activities were delayed because “projects of this nature are typically driven by the will of the government and the rapid change of key stakeholders caused the project to present its case and mandate every time a change in government personnel took place.”^{ix}

Strength-based Resilience: In the face of these challenges, it is nothing short of remarkable that the project continued at all. In some ways, however, the Highline-Mataria partnership was larger than just the project alone. Our years of working collaboratively, learning together, solving problems, celebrating successes, and addressing new challenges created a powerful bond from which we drew the strength necessary to forge ahead when moving forward seemed virtually impossible. Evidence of this bond can be seen in our success in maintaining communication with each other even when such communication was extraordinarily difficult during the revolution, and when, after their trip to Highline had been cancelled, some of the Mataria partners fought Cairo traffic on the eve of Ramadan to tell their Highline partners that they were

sorry the trip would not work out but that they would keep trying and hope for better success in the future.

Mataria's strengths were primarily the resilience, hope, and courage of students and staff. Even after the project had been halted, for example, Mataria faculty continued using new teaching techniques they had learned through the project and refining relationships such as the one established with the Social Fund for Development. Americans in the partnership were considerably impressed by their Egyptian counterparts' ability to accept disappointment as part of life, their freedom to embrace uncertainty, and their perseverance to not give up.

Our observations of the dedication of students, staff and faculty were confirmed in USAID field report from 2014. A description of USAID staff field visits to Mataria and Alexandria Technical Colleges, concluded that, "...administration, staff, and students were found to be enthusiastic, engaged, and dedicated. The administrators have excellent ideas and a desire to develop innovative and relevant technical programs that could train the labor force to fill employment needs in emerging labor sectors such as robotics, renewable energy, water purification, and recycling. Many students aspire to go on to University, and some instructors have solid linkages with the private sector that allow for curricula to be targeted to addressing specific private sector needs (we saw this particularly in the automotive sector at Mataria Technical College), and create opportunities for students to move straight into employment upon receipt of their diploma... Faculty members are enthusiastic educators, but there is little systematic professional development available to them to upgrade their skills or stay current with industry standards."*

Authentically Collaborative Relationships: Developing strong working teams at the operational level championed by individuals who have the support of their colleagues kept interest in the initiative alive and activities going forward. Another factor in the partnership's resiliency was that, at its heart, it was an authentically collaborative relationship. The partnership demonstrated value for the expertise and contributions of all, manifested through careful listening among partners in both formal and informal

settings. Having agreed-upon guiding principles for student-based outcomes and a shared commitment to meeting project goals enabled the partners to remain on task despite many disruptions. Friendships grew from the partnership, resulting in many poignant kindnesses. Having success stories to tout—such as the student who excelled and went on to be employed by Mercedes, the optics instructor connected with the Magribi Eye Hospital as an industry partner—buoyed the partners’ belief in the project.

Mataria’s partnerships with industry, while an area that continues to need further development, provided important project building blocks. MTC’s partnerships with such industry partners as Americana Foods, BMW, Magrabi Eye Hospital, and Olympic Appliance began with individual relationships. During the initial visit by the MTC team to Highline, MTC partners learned specific ways how industry partnerships that begin with relationships between individuals can be leveraged to benefit institutions—providing internship opportunities for students, for example, and industry input in curriculum development.

RECOMMENDATIONS

Through our experiences, we developed several recommendations that may help others who are interested in similar efforts. In general, our partnership identified the following factors as helpful in influencing sustainable partnerships:

- Mutual benefit is apparent for all members
- The project goals and partnership activities are reflective of leadership priorities
- Professional development is ongoing, adds value, and is immediately applicable
- Given the importance of external resources, seek such assistance from similar entities in the community as well as from NGOs and governmental agencies
- Active support and advocacy from within the funding agency to assist in navigating processes and reinforcing the legitimacy of the partnership
- Exercise good public diplomacy in all aspects of partnership activities

- Seek community and business allies who may be interested in sharing resources and expertise
- Nurture bonds in partnerships through cultural connections and by celebrating successes

Clearly it is important to consider the strategic design of partnerships prior to entering into a formal, funded project. In our case, characteristics that worked in the face of challenges were that the partnership was rooted in a strength-based perspective, was flexible, engaged many levels of stakeholders, and embodied a true collaborative spirit. Equally important was that partners genuinely shared a conviction in the importance of pursuing the project's goals.

In order to establish a partnership with these characteristics, MTC and Highline team members needed to build credibility with each other. The Egyptian political context further complicated this challenge in that there was an innate skepticism and sensitivity about assistance from the United States among some key project stakeholders (e.g., among some administrators at the Ministry). To build credibility across teams in this context, we found that in-person meetings were invaluable. This was true, for example, when Egyptian partners spent extended time in the U.S. observing the mission of U.S. community colleges and saw that Highline was genuinely committed to the goals of the project. Likewise for the American partners, credibility came by seeing our Mataria partners with their students in their home institution and observing their perseverance despite severe limitations on both resources and autonomy.

It is also advisable to include partners' contextualization of what makes an effective partnership. In highly hierarchical societies like Egypt, acquiring commitment from top leadership is imperative. Listening carefully and developing a relationship prior to sealing a deal is critical. Of equal importance is involving levels of employees besides top leadership so the planned outcomes are meaningful and relevant to all those doing the work. Every employee should be valued and recognized for their contributions.

In general, many existing leaders in higher education in Egypt are focused on their own reputations and legacy, and it is reasonable to think this may be the case in other centralized systems. (Indeed, this may be an innate part of human nature.) When a partnership or project from a previous leader is inherited by the new leader, it is often seen as belonging to the previous person and is therefore not transferable or worthy of the attention of the replacement administrator. With the constant change in leadership at the top and in the middle, reform initiatives can lose momentum or be stymied intentionally because leaders have no vested interest in sustaining endeavors that others began. Such realities can be disheartening to those working at the operational level and can prevent unified forward movement. Having a clear picture of the chains of authority, and engaging as many stakeholders as possible up and down these hierarchies, is at least a small start to navigating these complexities.

Recommendations for U.S. Colleges Working in the Egyptian Higher Education

Context: Our experiences also suggest a series of recommendations specific U.S.-Egyptian higher education partnerships, including the following:

- Obtain approval from top leadership and re-approval when leaders change. Get things in writing and signed whenever possible (although recently this seems more difficult, with a pervasive “hesitancy to commit”). Ensure that partners have copies of all official documents.
- Establish cultural guides for the Egyptian and U.S. sides to assist in determining the hierarchy involved in decision making and for checks of cross-cultural understanding and sensitivity. Cultural guides keep partners abreast of political changes that impact the project, including changes in all levels of leadership and policy. Assistance in identifying and navigating organizational structures that assure communication and seamlessness of project work is critical. On-the-ground support with cultural and linguistic expertise to advocate for the project is necessary.
- Jointly agree upon and develop criteria for the participant selection for professional development visits. The first MTC visitors to Highline were selected

by administrators on the Egyptian side. This resulted in the group being dominated by men and administrators near retirement age, thereby reducing the opportunity for a multiplier effect and for overall long-term engagement. For future professional development activities, we agreed upon criteria such as content expertise alignment with project goals, gender equity, relative youth in the system, commitment to application of learning post activity, and responsibility for sharing information with colleagues.

- Finances are a delicate topic, and agreeing on who will be remunerated for their work and at what rate is best done as transparently as possible, with joint participation by project partners. For technical college faculty, salaries are exceptionally low. Paying for a portion of an instructor's salary to do project work is not easily established, practical, or reinforcing. If allowable, identifying a clear body of work outside the instructor's contractual duties, with identified outcomes and a timeline for completion that results in a stipend, can be motivating. Another possibility is providing per-diem expenses for training to compensate for meals, incidentals, and transportation. These issues need to be discussed as early as possible to avoid later discrepancies and confusion. If funding is to be used for materials and supplies, it is important to know the capacity of the college's infrastructure so they are able to be used. Too often, development agency or donor rules for compensation are not responsive to the realities of the employment and compensation structures in this sector for Egypt.
- Communication needs to be on-going, formal and informal, and include all who are part of the partnership. Social media can be useful for updates and building relationships inclusively. Skype calls and collaborative work on reporting requirements demonstrate respect and transparency. Face-to-face time with partners in both the US and Egyptian environments is imperative in order to build and nourish shared goals.
- NGOs and organizations such as the American Chamber of Commerce in Egypt that understand both U.S. and Egyptian contexts can be valuable in navigating industry interests within a college's service area that could lead to mutually valuable relationships.

- Beginning new programs in partnership with industry presents opportunity that would need to be supported by the MOHE.

Recommendations for USAID: For USAID, the Mataria-Highline Partnership recommends improved ease in accessing face-to-face partner engagement. The strength of real-time communication over time is immeasurable. The lengthy and complex visa process made for an onerous experience---particularly when project partners come from non-elite and disadvantaged circumstances. A more streamlined process would be most appreciated. Any connections that USAID could offer (or make referrals to those who could assist) in identifying Egyptian industries in need of trained technicians would be a start in developing meaningful technical college-industry partnerships.

The funding for this project came through Washington, D.C., and therefore the staff at the USAID office in Cairo did not have a sense of ownership or buy-in for the effort. But the need to have support in-country for this type of work was critical. This bureaucratic discrepancy could be handled in a way to better support agency-funded projects regardless of where the funds originate.

It is important not to try to shoehorn new projects into existing constructs that disallow the recognition of unique dimensions of the new initiative and in so doing overlook possible value. One example is the collection of baseline information. For a well-resourced institution the requested metrics are available through electronic records. At Mataria and likely all of the technical colleges in Egypt, there is no infrastructure to allow for such a repository. Our partners took the baseline measure seriously; it involved going to many different offices in Mataria and in the technical college area at MOHE literally going through drawers of paper files to find the needed information and using a calculator.

American community colleges have significant expertise and experience that are relevant for development work in the BMENA region and elsewhere. In this project's case, HED remained a critical facilitator indispensable to the success of the project. Community colleges need the active support of an entity designed like HED to get the most out our

capacity. USAID has limited resources on the ground at each mission, but the agency needs to take advantage of the important skills and conceptual approach that community colleges can contribute to meeting development goals related to education, employability, youth, and economic development. Community colleges are a valuable mechanism in addressing many of challenges at the grassroots level in order to engage non-elites effectively. USAID needs to find successful strategies to broaden community colleges work in international development and support their success.

Finally, in order for any new USAID funding for technical education in Egypt to have a chance of successful outcomes, there will need to be culturally/linguistically competent people on-the-ground representing USAID or the implementing partner organization, consistently meeting with the many administrative levels at MOHE and with the Ministry of International Cooperation. It is not possible to navigate this system from afar, nor to expect to “catch up” with two or three onsite visits per year.

CONCLUSION

The engagement of community colleges in development work promotes great opportunities for workforce education to respond to the economic needs of global communities. The flexible and responsive nature of community colleges allows for nimble adjustments in diverse environments. Using a capacity-building approach and adopting a strength-based view of students and institutions translates across cultures. Community colleges are in the business of hope. That hope is accomplished with perseverance and work. Supporting and expanding community colleges’ opportunities to engage in partnerships that promote development is in all our interests.

There is, however, a gap in the literature describing community college partnerships with technical colleges serving educationally disadvantaged students in an under-resourced infrastructure. Addressing this gap would in essence provide a roadmap for potential partners and some basic project navigational tools. With this case study, we

have put some pieces of a roadmap in place—characteristics like ensuring that all partners are respected and their goals are clearly included in the work plan, and having tangible evidence that the very top of the organization has endorsed the project elements and work (and that whenever a new player is appointed within the government’s hierarchy, the interest of that person in the project needs to be cultivated). The need to be on-the-ground and understand local politics is also hugely important.

Technical college and industry partnerships could be one key solution for the majority of workforce needs in Egypt and have the potential to enhance economic development. For that to happen, the many different entities within the Ministry of Higher Education would need to become more unified in recognizing, supporting, and expediting new programs and revise program development strategies in partnership with industry. For USAID to play a productive role in advancing possible solutions in collaboration with MOHE, it should utilize its community colleges as valuable resources that have a proven record of promoting inclusion, equity, and economic development in America. The impact of “democracy’s colleges” should never be underestimated.

ⁱ Korotayev A., Zinkina J. (2011). Egyptian Revolution: A Demographic Structural Analysis. 13 (2011): 139-169.

ⁱⁱ Aggour, S. (2014, August 12). Over 50% of Egyptian youth are poor: CAMPAS. *Daily News Egypt*. Retrieved August 23, 2015, from <https://www.dailynewsegypt.com>

ⁱⁱⁱ Review of National Policies for Education, Higher Education in Egypt, OECD and World Bank, 2010, p. 166.

^{iv} RTI International. (2011, November 16). Egyptian Community College Development Concept and Feasibility Assessment (Contract AID -263-0-12-00001). Retrieved from: www.rti.org

^v Ibid.

^{vi} These observations are based on discussions with officials in the Higher Education Enhancement Project (HEEP) and Egyptian Technical Colleges Project (ETCP) offices of the Ministry of Higher Education.

^{vii} Perzigian, Anthony, J. (2013, March 3). Higher education reform in post-revolution Egypt. Retrieved from <http://www.egyptindependent.com>

^{viii} Ibid.

^{ix} Office of Inspector General Survey of USAID’s Arab Spring Challenges in Egypt, Tunisia, Libya and Yemen. Survey Report No. 8-000-15-001-S, April 30, 2015.

^x Egyptian Technical Colleges: USAID Desk Study and Field Visits, 2014



Broader Middle East and North Africa–U.S. Community College Initiative

Organizational Transformation Through Self-Study and U.S.-Style Accreditation: A Commitment to Educational Access and Quality in Lebanon

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PARTNERSHIP AT A GLANCE

Some of the key principles that distinguish the missions of community colleges include accessibility, opportunity, and services to students and the community. Sharing a commitment to these principles, Al-Kafaàt University in Lebanon and a consortium of community colleges that are part of the State University of New York system—Nassau Community College (lead), North Country Community College, Monroe Community College, and Onondaga Community College—implemented a partnership that began with curriculum development and expansion of the student service sector. The partnership grew into a dynamic system-to-system collaboration focusing on institutional self-study, assessment and, ultimately, organizational transformation at AKU.

PARTNERS

Al-Kafaàt University, Beirut Lebanon
State University of New York System – Nassau Community College (lead),
North Country Community College, Monroe Community College, and
Onondaga Community College

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INTRODUCTION

Accessibility, opportunity and services to students and the community are qualities that embody the community college mission. Sharing this mission, Al-Kafaàt University (AKU) and four community colleges in the State University of New York system—Nassau Community College (lead), North Country Community College, Monroe Community College, and Onondaga Community College—implemented a partnership that began with curriculum development and expansion of student services. The partnership expanded into a dynamic collaboration focusing on institutional self-study, assessment and, ultimately, organizational transformation at AKU.

Among many noteworthy accomplishments, the partnership came to demonstrate three core findings that are the focus of this case study:

- First, the recognition by AKU and the SUNY system that engaging in international capacity-building efforts can be an effective means to internationalize colleges and universities, a goal that in the 21st century is widely shared across higher education institutions globally.
- Second, the importance of student services as a focus area for the project became evident as a result of centers established to serve a diverse student body at AKU. The BMENA region is still in a phase of developing this component within higher education; the AKU/SUNY partnership developed some productive strategies for addressing this gap.
- Third, recognition that by having AKU go through the external and internal program reviews and self-study processes that are inherently part of the process of achieving U.S. accreditation for an institution of higher education, AKU and SUNY could leverage the partnership's capacity-building efforts to strengthen AKU.

In addition, this paper will demonstrate that improving educational opportunity and quality through capacity building is a reciprocal process; collaboration is only possible within the context of examining processes on both sides of the partnership.

AL-KAFAÀT FOUNDATION AND AL-KAFAÀT UNIVERSITY

Al-Kafaàt University was established under the auspices of the Al-Kafaàt Foundation, a non-governmental development organization founded in Lebanon in 1957. In addition to providing educational, health, and rehabilitation services daily to more than 4,500 individuals with physical, cognitive and learning disabilities in seven different sites, the foundation supports a system of educational institutions that ranges from technical/vocational training to advanced professional/graduate degrees. (These educational offerings roughly parallel the range of academic programming across the SUNY system.)

Al-Kafaàt Foundation was granted permits for two higher education colleges, a School of Education and a School of Technology, in 1999. In 2009, a third college, a School of Arts, was formed, and the three colleges were incorporated under one umbrella, Al-Kafaàt University. Subsequently, AKU has expanded by opening a School of Business, and a fifth college, the School of Health Related Professions, is expected to open in 2015.

A diverse institution, AKU is guided by an independent board of trustees and managed by administration and faculty through shared governance. The university's mission statement is as follows:

“Al-Kafaàt University is an inclusive, community-driven institution of higher education which serves the diverse needs of Lebanese people. It provides open access to education and empowers students through innovative academic programming and applied, experiential learning. AKU prepares students for the real world, a requisite for success as active economic contributors and members of a vibrant society.”

AKU offers a unique system of quality education to students with severely limited financial resources. Its financial aid system leverages external funding and work-study opportunities, putting high-quality education within reach of underserved and economically disadvantaged students. Committed to preparing students for employment, AKU makes applied learning an integral part of its educational programming, offering students vital, hands-on experiences. Wages that students earn through experiential learning opportunities help offset the cost of their education. For example, students in the School of Education work in Al-Kafaat Foundation educational centers in the morning and attend classes in the afternoon. That approach enables students to both maximize their basic knowledge and gain practical experience that will help them become productive members of the workforce following graduation.

LEBANESE HIGHER EDUCATION IN CONTEXT

Lebanon has one of the oldest systems of modern-style higher education in the Middle East, dating back to the founding of the American University of Beirut in 1866. Today, Lebanon has 41 higher education institutions that serve approximately 190,000 students. Most of these institutions developed following the 15-year civil war that occurred between 1975 until 1990. Approximately 70,000 students attend Lebanon's sole public university, the Lebanese University, while the remaining 120,000 enroll in private institutions. The higher education sector is governed by the Ministry of Education and Higher Education. Institutions generally following one of four models: the governmental model, Arab model, French model, or the American model.

A number of factors, many tied to education, impact workforce development in Lebanon. First, Lebanon experiences a high rate of emigration. Many individuals leave the country after they earn a university degree; statistics show that as many as 50 percent of Lebanese emigrants are highly educated. One implication of this trend is Lebanon does not benefit as much as it could from contributions to economic development from graduates of its institutions of higher education.

Second, the country is currently experiencing high unemployment and underemployment rates. Indicators suggest that the desire to emigrate is strongly tied to the unemployment rate among youth in Lebanon, which is about 34 percent.ⁱ Further, the majority of workers who remain in Lebanon do not access higher education, and jobs that have been created over the last decade tend to be in low-productivity sectors that require unskilled labor.ⁱⁱ Yet another confounding factor is that while women are equally represented in most sectors of higher education, they constitute just 24 percent of the workforce.ⁱⁱⁱ All of these realities suggests that there are significant barriers, even for those with a university degree, to obtaining employment.

Finally, the Syrian conflict has brought over a million refugees to Lebanon, now accounting for more than 20 percent of its overall population, and that number is expected to grow. This trend is expected to continue to impact economic growth in Lebanon and increase the rate of poverty (currently at 28.6 percent) and unemployment among the Lebanese people.^{iv}

To absorb the number of job seekers, Lebanon must create 23,000 jobs per year over the next decade.^v The country's institutions of higher education, particularly those like AKU that have a strong focus on applied learning, are uniquely positioned to answer the call for greater connectivity between workforce training and the labor market.

SUNY's COMMUNITY COLLEGES AS CAPACITY BUILDERS

With 64 campuses located throughout the State of New York, the State University of New York (SUNY) is the largest comprehensive higher education system in the United States. SUNY is comprised of doctoral institutions, comprehensive colleges, technical colleges, and community colleges. New York residents are never more than thirty miles away from a SUNY campus.

Each serving the diverse regions that surround them, SUNY's community colleges function as capacity builders throughout New York State. They are designed as open-access, inclusive institutions that provide innovative academic programming to address the workforce and academic needs of their local populations. With workforce training as a cornerstone of their

missions, community colleges offer a well-designed system, with multiple entrance points for students that strengthen local workforce capacity throughout the state. Combining technical and academic education structured to adapt to local workforce needs, this model can be adapted to serve communities in a global context.

Community colleges serve students from different backgrounds, connecting with secondary schools, and preparing students to transfer to four year degree programs, enter the workforce, or both. This is an essential part of the U.S. higher education structure, as it plays a vital role in economic sectors, job satisfaction and quality of life. While not typically viewed as institutions that conduct research or develop technology, in fact, these activities happen at community colleges every day in the U.S., conducted by faculty and students. This model of education can be adapted to other circumstances and can have a profound impact in developing countries, as it has had in the United States.

Community colleges are relative newcomers to international development work. At times community colleges have been little understood even at home in the United States, and this has limited their role in funded development projects. Furthermore, community colleges exist to serve their communities, and their role in local, domestic education takes precedence over any opportunities for overseas work, as resources at community colleges are often more limited than at other public institutions. Such restrictions have made it difficult for community colleges to pursue international engagement. However, with recognition within public higher education that deeper understanding and broad knowledge of the world improves educational outcomes for students and prepares them for global interaction, a demand for global interaction for faculty and students engagement has emerged at community colleges.

THE SUNY/AL-KAFAÀT PARTNERSHIP: A CONSORTIUM APPROACH

The AKU/SUNY partnership was an outgrowth of a community college consortium that began collaborating with Al-Kafaàt University in 2010. The collaboration came about as the result of a

USAID seed funding program managed by Higher Education for Development. Four SUNY community colleges (Nassau, North Country, Monroe and Onondaga) formed a coalition to engage in the Broader Middle East and North Africa (BMENA) program. The consortium approach strengthened the consortium's proposal to HED, as the group drew on individual areas of strength on each campus.

Initial program funding of \$60,000 enabled the consortium to conduct a baseline needs assessment at Al-Kafaat University. Over six months, representatives from SUNY visited AKU and representatives from AKU visited SUNY campuses. Underscoring the fundamental benefits inherent in the fact that AKU and SUNY share a distinct focus on inclusive, accessible education for diverse populations, those reciprocal visits were essential in developing trust and mutual understanding and for reaching agreement regarding the basis of the partnership.

During the first phase of the partnership (February–July 2010), the partners collaborated to develop both a long-term work-plan for the partnership and a proposal for a second phase of the program, which was subsequently funded in the amount of \$461,151. It was determined that the collaboration would focus on developing the following resources at AKU: a student learning center, a career center, an English language program, and a small business incubator. In addition, a certificate in business administration would be developed, strengthening the business curriculum and implementing teacher training on student-centered learning models. Tasks were divided among the SUNY consortium member colleges. North Country would focus on the student learning center, Monroe on the career center, and Nassau on curricula in English and business administration. Onondaga would focus on a business incubation model with help from the New York State Small Business Development Center in Syracuse, New York.

Consortium institutions provided significant in-kind contributions of resources, the most significant of which was the time of various area specialists at the four institutions. Involvement of college personnel led to a greater understanding among faculty and staff of the responsibility of U.S. institutions in capacity-building projects as well as a deeper understanding of Lebanon and the BMENA region. Too often, educators in colleges and universities tend to limit their focus on international education to enrollment of international students on U.S. campuses or sending domestic students to study abroad. Capacity-building projects, on the other hand,

require a long-term institutional commitment, and the immediate results that are evident in student mobility efforts are not always present. Instead, this type of project, under the best circumstances, is a slow and steady climb. In our case, it has been a consistent and steady effort with valuable learning experiences on both the U.S. and Lebanese sides. We have found, however, that with the mutual investment of all partners, the collaborative university model for capacity building yields substantial impact and sustainable activities.

PARTNERSHIP SUSTAINABILITY AND EVOLVING PLANS

Throughout the course of the AKU/SUNY partnership, important milestones yielded lessons that helped strengthen the partnership, sometimes in unexpected ways. Overall, we learned that we needed to adjust our objectives as we learned more from our work on the ground. For example, early in the partnership we completed the goals of establishing the student learning center, career center, and English program at AKU. As these elements became part of AKU's institutional identity, refining and growing them became important parts of the partnership's activities.

At the same time, unexpected results also proved instructive. When analysis of the potential development of a business incubator was complete, for example, it became clear that this model could not be implemented during the funded period for several reasons, including difficulty in securing bank loans for business startups. Another cause for a change in plans came when partners determined that certificates in business administration were less valuable to the student population in Lebanon than initially anticipated, and that concept was removed from project objectives.

Through such experiences, the process of examining objectives that would ultimately add value and lead to institutional strengthening became an exercise in planning for project and institutional sustainability. As the collaboration developed and the partners came to understand each other's contexts more fully, we came to the understanding that every project activity needed to be of primary strategic importance to AKU in order to be sustainable. All project plans were analyzed from this perspective and only those that would result in long-term

sustainable activities for AKU were supported by the project. Resources were redirected from any project plan that did not pass this litmus test.

One example of redirected resources was the implementation of AKU's Center for Students with Disabilities (CSD). After careful analysis, the partners determined that funding originally intended for development of the certificate program in business administrations and the proposed business incubator would be better devoted to meeting the need for services and accommodations for students with disabilities at AKU. This revised partnership goal aligned closely with the founding mission of the Al-Kafaàt Foundation, as reflected in its mission of access, diversity, and inclusion and its commitment to serve people who are disabled and/or socially disadvantaged. Serving 10 percent of the overall student body and providing related services and accommodation to students with disabilities, the CSD project has proven highly successful at AKU.

PARTNERSHIP EXPANSION

Approximately two years after it began, the scope of the partnership began to broaden. Taking note of the work the four community colleges in the partnership were doing, SUNY universities and comprehensive colleges became interested in the capacity-building model being implemented in Lebanon. Seen as an area that could present multiple opportunities for shared learning and campus internationalization, the AKU/SUNY partnership was broadened to include the entire SUNY system. This was achieved through three actions. First, the project director from Nassau Community College was assigned to work closely with the SUNY system's office of global affairs to further develop partnership initiatives. With the support of Nassau Community College, the position of SUNY Global Fellow for Lebanon was created. Second, a broad memorandum of understanding was implemented between the SUNY system and Al-Kafaàt University to establish areas of common interest and partnership growth among AKU and SUNY campuses. The MOU incorporated the general goal and objectives of the BMENA partnership, and created a framework for expanded system-to-system engagement over a five-year period. Third, the SUNY Global Fellow was invited to sit as an ex-officio member on

AKU's board of trustees. In addition, SUNY leveraged the extensive experience and knowledge of the system's Office of Global Affairs to centralize project management and create opportunities to explore other areas of collaboration.

After the broader affiliation between the SUNY system and AKU was established in 2013, partners began to look at parallel programming. For example, AKU's English program, which was well-established by this time and served more than 300 students engaged in technical education, began a joint initiative with the English Language Immersion Program at Nassau Community College. Through SUNY's Center for Collaborative Online International Learning (COIL), an online exchange was developed. The project was twofold, involving teacher collaboration on curricula and virtual student exchanges between classes in Lebanon and New York. This model was very successful, and is now a cornerstone of both English programs.

The COIL exchange spurred a relationship among colleagues in the two English programs, which led to exploration of other areas of potential collaboration, including testing, evaluation, and assessment. At first, these aspects of English courses at Al-Kafaàt were implemented in the same formats Nassau used for the program in New York. However, through dialogue, it became apparent that cutting and pasting a system of program assessment and implementing in the exact same way was not effective, or even feasible. This "problem" raised interesting questions: In international higher education partnerships, how is increased institutional capacity measured? Is it possible to replicate practices used successfully in U.S. higher education in institutions abroad, particularly in developing or re-developing regions? Consideration of such questions eventually let the partners to seek U.S. accreditation for AKU.

PURSUING U.S. ACCREDITATION FOR AKU

At colleges and universities across the U.S., the voluntary system of accreditation is an ongoing cycle of institutional review in which significant resources are invested. Accreditation invites robust debate and is the subject of research and academic discussion. The stakes are high: Not being accredited or reaccredited puts institutions at serious risk in various significant ways,

including the denial of access to federal financial aid funds and the potential for student difficulties in transferring credit.

The heart of the accreditation process, however, goes far beyond compliance with regulations. The process of institutional accreditation provides an opportunity to evaluate institutional programs and structures with regard to their relevance to the institutional mission, to involve multiple stakeholders in institutional planning and assessment, and ultimately, to develop a feedback loop that continuously improves the quality of education. Because institutional accreditation processes are self-guided within a structured framework for institutional self-study, they lead to greater understanding of mission and purpose throughout the institution. They also enable all members of the university community to participate in the accreditation process. In essence, the accreditation process is rooted in the concept of continuous improvement through institutional self-reflection and peer review.

Accreditation itself is a widely recognized hallmark of institutional quality. Thus, the value that accreditation adds to institutions makes the U.S. process of institutional accreditation eminently valuable as a model for improvement at international institutions. What, though, are the benefits of U.S. institutional accreditation outside of the U.S.? What factors make this arduous, challenging, and costly process desirable in an international context? Some international institutions pursue accreditation for the prestige, knowing it will reflect well on them. Others see it as part of a quality-assurance process. A recent article on this topic noted that the accreditation process requires international institutions to “show that they function with clear strategies and educational objectives, that they are financially stable, and that they maintain organizational structures to fulfill their purposes, among other requirements.” The article quoted Cherif Bel Fekih, executive director for development and communication at Morocco’s Al Akhawayn University, observing that accreditation is “an opportunity to improve, change and adapt, and bring [our] programs to the required standards.”^{vi}

In 2013, the AKU/SUNY partnership, with an additional funding from USAID of \$100,000, began to explore the possibility of accreditation at AKU. The SUNY system has significant experience in providing accreditation guidance to campuses through its Office of Academic Programs, Planning and Assessment, which works to ensure the mission of SUNY is met on

each of the 64 campuses and that institutional procedures align with state, federal and regional accreditation requirements.

In the case of the AKU/SUNY partnership, the deep commitment to the process of accreditation that emerged from this planning phase was rooted specifically in capacity building. That focus had the effect in this case of shifting the central goal of pursuing institutional accreditation from prestige to purpose, consistent with continuous improvement best practices, and on strengthening AKU overall. Pursuing accreditation for AKU over more than two years afforded the partnership the opportunity to look in depth at many foundational aspects of quality higher education, including AKU's course offerings, curriculum, teaching methodologies and pedagogy, student services, institutional governance, planning, resource allocation, evaluation, and ongoing assessment. The process intentionally engaged key stakeholders at AKU in reflecting on the mission and future of the university.

One important final observation in this regard is that while the process of accreditation can sometimes be viewed as potentially leading to U.S. style education, the partners were intentional in this case to ensure that best practices and reforms adopted at AKU were done so in the context of and in ways appropriate to Lebanese higher education.

Choosing an Accrediting Body for AKU: Several considerations factored in choosing an accrediting body appropriate for AKU. SUNY institutions are accredited by the Middle States Commission on Higher Education, one of seven U.S. regional accreditation bodies.^{vii} Not all of those agencies accredit freestanding institutions outside of the United States. Middle States had piloted a pilot program to accredit freestanding institutions outside of the U.S in 2002, but that program ended in 2007.

Grounded in federal regulation, regional standards for higher education accreditation are similar in scope and reason, but there are nuances that make some accrediting bodies more suitable to the needs and goals of different international institutions. After considerable research and outreach to each of the accrediting bodies under consideration, the Southern Association of Colleges and Schools Commission on Colleges (SACS) was selected as the most appropriate regional accreditor for AKU. SACS has significant experience working internationally, and

considers unique dimensions, features, and qualities of an institution within the framework of its guiding policies and standards. (SACS, for example, does not require all or even a majority of coursework be taught in English; considering the linguistic diversity in Lebanon, that was an important consideration regarding accreditation for AKU.)

Representatives from AKU and SUNY attended the SACS pre-applicant workshop in April 2014 and the SACS Summer Institute in July 2014. Those meetings provided an in-depth understanding of the process of accreditation overall and a working knowledge of SACS requirements and procedures.

Pursuing U.S. Accreditation: Institutional accreditation is a daunting task for institutions in the U.S. Institutions that have been continually accredited over many years must work arduously to continue to fulfill accreditation standards and fully meet the requirements of accreditation processes. For an institution just beginning this process, pursuing accreditation is therefore an extremely demanding pursuit. Toward the goal of accreditation for AKU, a collaborative plan was developed over the course of a year. SUNY's assistant provost for academic program review worked closely with AKU administration, faculty, and staff to construct an institutional accreditation framework. Representatives from each academic department at AKU and three vice presidents held 26 meetings to devise a strategic plan, vision, and mission, as well as assessment plans and institutional policies.

Rigorous and in-depth site visits from teams representing the accrediting body are a pivotal milestone in the accreditation process. Recognizing that, the partnership planned a mock accreditation site visit. A mock site-visit team that included representatives from the SUNY system's administration and SUNY campuses with extensive experience in conducting actual accreditation site visits convened at AKU in March 2015. The team worked closely with AKU's accreditation steering committee, composed of university faculty, staff, and administration. Incorporating the core requirements and standards of SACS, the three-day site visit involved meetings with campus stakeholders including academic representatives, members of AKU's board of trustees, financial staff, staff from student services, and representatives from student groups. The goal of the site visit was to provide an experience that would both replicate an

actual visit and determine institutional readiness for beginning the next phase of the process, pursuit of institutional candidacy for accreditation.

Reporting their findings at the end of their visit, the mock site-visit team provided an in-depth review of AKU, providing both commendations on AKU's efforts and recommendations for further work. Comments from faculty and staff at AKU indicated that they found the self-study and team-visit processes to be extremely productive, allowing for discussion of institutional strengths and weaknesses. Representative from AKU also appreciated the guidance they received with regard to cultural differences around accreditation standards, U.S. expectations with regard to curricular design, outcomes assessment practices, governance, general education, and even the structure of data reporting formats. It is anticipated that the final written team report will serve as a roadmap for AKU as it progresses toward full SACS candidacy status.

LESSONS LEARNED

The evolution of the system-wide collaboration between AKU and SUNY described above resulted in many discoveries along the way, and has strengthened both partner systems as a result. The process of discovery and key decision points throughout the partnership are reflected in the following lessons learned:

- Partnerships involving campus consortia can maximize institutional resources and areas of expertise. For example, when the partnership was updated to include exploration of the AKU School of Health Related Professions, appropriate faculty and campus programs were able to lend themselves to the process.
- International university partnerships build capacity at U.S. institutions as participating faculty and administrators gain vital experience that helps inform their work in internationalizing their home campuses, a major goal on most U.S. campuses today. Participation in international capacity-building projects enriches opportunities for U.S. institutions to view their own programs and goals through an international lens.

- Institutional buy-in is essential for sustainability on both sides of a partnership. Support from administration, faculty, staff, and students is necessary in building long-term, goal-focused joint programming and capacity-building activities.
- When there is a strong and appropriate rationale, it is reasonable and acceptable to shift program goals and resources in ways that will strengthen the partnership. Struggles and growing pains are normal and to be expected. When the AKU/SUNY partnership tested the idea of implementing a small business incubator and found this goal to not be viable, for example, resources were shifted to institutional self-study for the purpose of seeking regional accreditation.
- When possible, establishing strong ties and open communication with the USAID mission in-country is important in setting future programming goals, examining sustainability, and aligning U.S. funding goals with local development needs. Furthermore, connecting in-country capacity-building needs with government agencies (Department of State, USAID, MEPI, ASHA, etc.) in Washington, D.C. is important in informing the global development goals for higher education.

CONCLUSION

Sharing a mission of accessibility, diversity and inclusivity in higher education and collaborating for nearly five years, AKU and SUNY forged a partnership that has had a significant impact on institutions of higher learning in both Lebanon and the United States. Underscoring the benefits that can accrue when universities collaborate, the partnership created productive opportunities for a deeper level of human engagement, facilitating the exchange of knowledge and gleaning a better understanding of institutional needs and possibilities for growth. In short, the partnership made it possible for community colleges in both Lebanon and the United States to engage internationally in meaningful ways, and to advance toward significant goals in capacity building and institutional strengthening.

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- ii World Bank. (2013). *Lebanon Needs to Create 23,000 Jobs per Year* (press release, April 11, 2013). Washington, D.C.: World Bank. Accessed August 16, 2015 at <http://www.worldbank.org/en/news/press-release/2013/04/11/world-bank-lebanon-needs-to-create-23-000-jobs-per-year>.
- iii Mottaghi, Lili; Devarajan, Shanta. (2014.)
- iv Ibid.
- v World Bank. (2013).
- vi Lynch, S. (2015). "A Growing Number of Arab Universities Seek International Accreditation." Al-Fanar Media, March 15, 2015. Accessed August 16, 2015 at <http://www.al-fanarmedia.org/2015/03/a-growing-number-of-arab-universities-seek-international-accreditation>
- vii The seven regional accrediting bodies include the Middle States Association of Colleges and Schools Middle States Commission on Higher Education (MSCHE), New England Association of Schools and Colleges Commission on Institutions of Higher Education (NEASC-CIHE), Higher Learning Commission (HLC), Southern Association of Colleges and Schools Commission on Colleges (SACS), Western Association of Schools and Colleges Accrediting Commission for Community and Junior Colleges (WASC-ACCJC), Western Association of Schools and Colleges Accrediting Commission for Senior Colleges and Universities (WASC-SCUC), and Northwest Commission on Colleges and Universities (NWCCU).



Tunisia-JOBS

Challenges and Best Practices for Establishing and Sustaining Higher Education Institution Engagement with Local Community Needs

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PARTNERSHIP AT A GLANCE

The University of Colorado at Boulder and three technical institutes of higher learning in Tunisia developed the Tunisia-JOBS partnership, the main objective of which was to create a bridging mechanism between higher education institutions and local communities through service-learning activities related to two important resources for Tunisia's development, energy and water.

PARTNERS

University of Colorado at Boulder

Institut Supérieur des Etudes Technologiques de Médenine, Tunisia

Institut Supérieur des Etudes Technologiques de Tataouine, Tunisia

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INTRODUCTION

Over the last 30 years, the education system in Tunisia has been expanded, both in terms of curricular depth and geographic reach, to ensure that a significant portion of Tunisians receive higher education degrees. With its relatively small economy and limited development, however, Tunisia has been unable to absorb the number of graduates of higher education it produces in its workforce, resulting in some 700,000 unemployed individuals, many of whom hold diplomas from universities. Exacerbating this problem, the Tunisian economy endures developmental challenges that include the lack of investments, resources, and infrastructure, especially in the interior regions.

To help address this set of issues, the University of Colorado at Boulder (CU) and three Tunisian technical institutes of higher learning (ISETs)—the Institut Supérieur des Etudes Technologiques de Médenine, Institut Supérieur des Etudes Technologiques de Tataouine, and Institut Supérieur des Etudes Technologiques de Sidi Bouzid—collaborated to create the Tunisia-JOBS project, an effort to engage institutions of higher education in Tunisia in serving local community needs and developing flexible curriculum designed to produce a workforce with specific skills desired by local industries. The main objective of the Tunisia-JOBS project was to create a bridging mechanism between higher education institutions and local communities through service-learning activities related to two important resources for Tunisia’s development, energy and water. This mechanism was the creation of Sustainable Solutions Centers that were established at each of the ISET partners. The first partnership, with ISET Sidi Bouzid, was awarded \$500,000 through HED by USAID. The second partnership, with ISET Médenine and ISET Tataouine, was awarded \$500,000 through HED by the Department of State.

As further context, the four brief sections that follow highlight the current status of the education system, youth unemployment, and energy and water resources in Tunisia.

Education system: Tunisia has a population of 11 million. Its population growth rate, 0.89 percent (2015 estimate), is low compared to other MENA countries. Tunisia’s low population

growth rate is attributed mainly to a family planning program that was initiated in the 1960s, when the population growth rate was more than 3 percent.

Tunisia has a highly educated population. More than 99 percent of all Tunisian children have access to education, which is required by law until a child turns 16. As a result, the Tunisian government spends more than 15 percent of its annual budget (roughly 5 percent of its GDP) on education. The annual enrollments of students in elementary and secondary schools in Tunisia (equivalent to K-12 education in the United States) are actually declining due to decreasing population growth (OIT, 2013). In terms of tertiary education, Figure 1 shows the annual variation of the number of students enrolled in higher education institutions. Enrollment peaked during the 2009–10 academic year, when 37 percent of Tunisians aged 20 to 24 were enrolled in higher education institutions. It is estimated that the Tunisian government spends 3000 dinars (equivalent to about \$1,500 in 2015) annually per student enrolled in a higher education institution (Houas et al, 2012).

The education system in Tunisia, which is exclusively controlled by the government, has undergone three major reforms (1958, 1991, and 2002). The reform of 1991 required all children to attend school for nine years (i.e., children between the ages of 6 and 15). The compulsory nine years of elementary education, called “Basic Education,” is followed by a four-year cycle of general secondary education (equivalent to high school), culminating in a national diploma known as the Baccalaureate. The Baccalaureate exam (Examen National du Baccalauréat), administered at the end of secondary school, is required for students to be admitted into higher education institutions. Students who fail the test or elect not to matriculate in higher education can pursue vocational training, of which there are several levels of qualification (Certificate of Professional Competence, Professional Technician Certificate, and Certificate of Higher Technician).

After the reform of 2002, Tunisia adopted the LMD (“Licence-Master-Doctorate,” or bachelor’s, master’s, and doctorate) structure for its higher education system. Generally higher education institutions are one of two types: academic institutions (such as universities or engineering schools) or institutes of higher education technology (such as Instituts Supérieur des Etudes Technologique). Over the last 20 years, many higher education institutions have

been created mainly to absorb the increasing number of students who passed the Baccaureate exam and want to pursue higher education. For instance, the number of ISETs grew from four in 1995 to 26 in 2005.

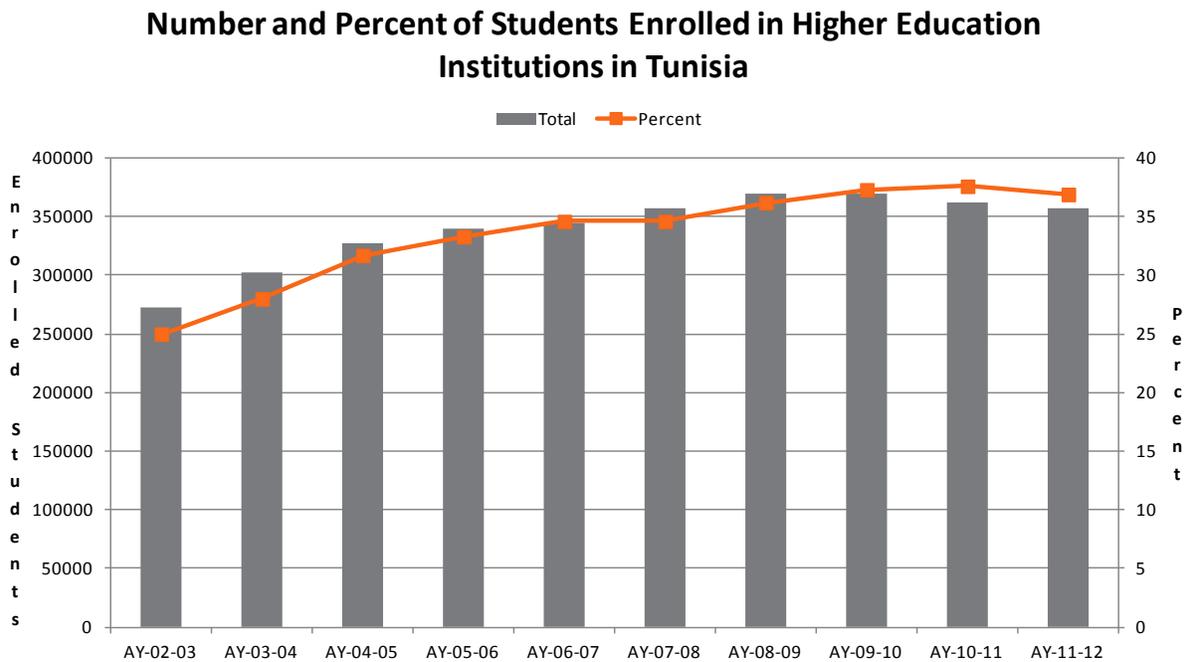


Figure I: Variation of annual enrollments of students enrolled in higher education in Tunisia (OIT, 2013)

Youth unemployment: Before the 1991 reform, the education system in Tunisia was highly selective at all levels. Before 1992, for example, only about 30 percent of students passed the Baccaureate exam and were thus eligible to pursue higher education. Higher education institutions graduated a limited number of students and most if not all graduates had little trouble finding good jobs. After the reform, however, the education system was less restrictive, resulting in a significant increase in the number of graduates. Between 2001 and 2011, for instance, 62 to 72 percent of students passed the Baccaureate exam (OIT, 2013). As one consequence of this generalized access to higher education, Tunisia’s unemployment rate has increased steadily since 2005 among those with higher education diplomas, as indicated in Figure 2. The number of youth with higher education diplomas reached over 200,000 in 2010. Unfortunately, the problem of youth unemployment, which is considered one of the triggers of

the 2011 revolution in Tunisia, has continued to grow in the last four years (Milbert, 2014). It is clear that the education system (especially higher education) is not meeting the needs of the Tunisian economy. Several specific problem areas have been identified:

- Training is provided mainly in schools, not in the workplace
- School and work institutions remain unconnected
- The Tunisian educational system encourages developing credentials over developing skills, including entrepreneurial skills
- Programs and curricula are generally set by the Ministry of Higher Education with little flexibility at the local level (top-down approach)
- Efforts to incorporate modules to develop direct contact with professionals and entrepreneurial skills have had limited success

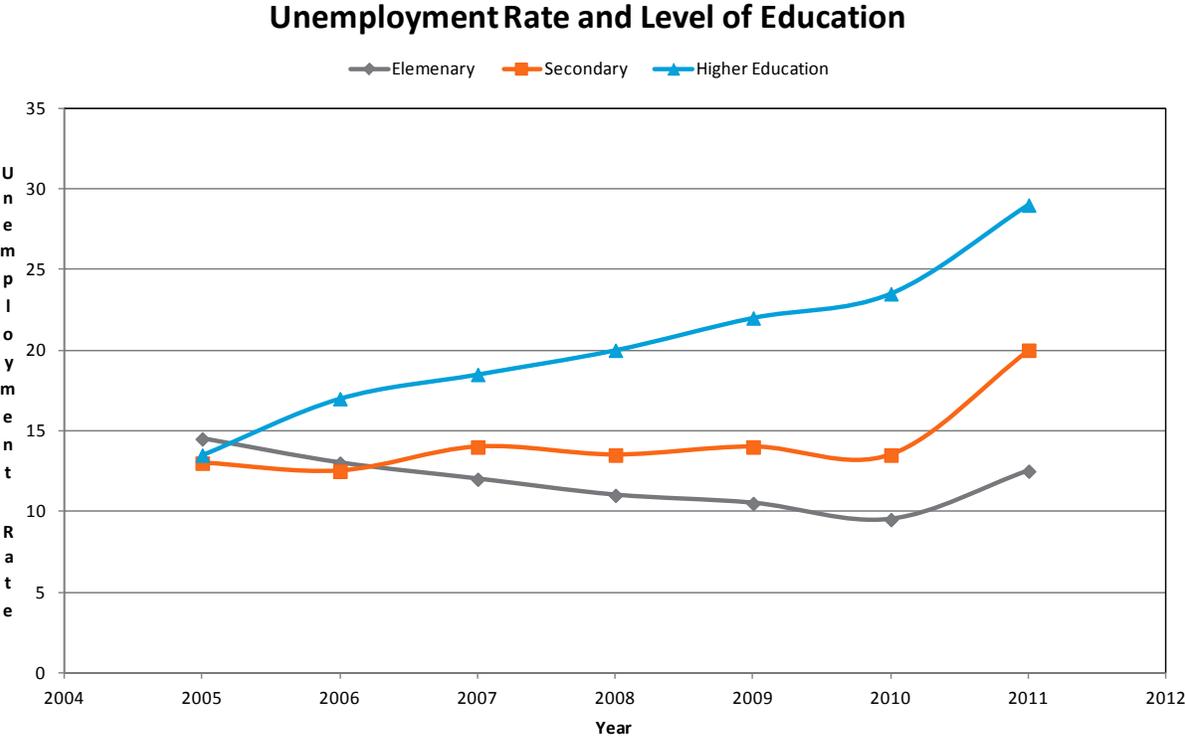


Figure 2: Annual unemployment rate among youth in Tunisia

Energy resources: Based on several assessments from the World Bank, the United Nations Development Programme (UNDP), and the International Energy Agency (IEA), demand for energy in Tunisia expected to grow at a high rate, ranging from 4.4 percent to 6.1 percent per year over the next decade (Lehr et al., 2012). This will result in a large and growing energy deficit, particularly in the power sector, which is projected to be in the range of 15 to 21 million tons of oil equivalent (or TOEs) by 2021–22. Domestic energy resources rely on fossil fuels (gas and oil). However, these domestic energy resources are expected to reach a peak of 10 million TOEs in 2012–13 and then decline to 7 million TOEs by 2021–22, primarily due to declining local natural gas reserves (IEA, 2011).

To meet its growing energy demand, Tunisia will need to increase its gas and oil imports in the near future. However, in the long term and for the country's national interest, Tunisia needs to develop its other domestic energy resources, including renewable energy, which remain largely untapped. Indeed, Tunisia has significant potential to meet most of its growing energy demand using renewable energy technologies, including wind, solar thermal, and photovoltaic. Due to lack of financing and expertise, however, renewable energy in Tunisia is only in the initial stages of development and remains insignificant. Energy policies in Tunisia are now focusing on securing and promoting programs in energy efficiency, developing renewable energy/clean fuel sources, and reducing greenhouse gas emissions. In particular, one goal is to accelerate development of renewable technologies so that source will constitute 10 percent of Tunisia's energy mix by 2030.

Water resources: Due to the aridity and variability of its climate, Tunisia has scarce water resources, which are unevenly distributed throughout Tunisia's regions and during the year. The agricultural sector consumes more than 80 percent of Tunisia's water supply, followed by drinking water, industry, and the tourism sector, which consume 12 percent, 5 percent, and 1 percent respectively (Louati, and Bucknall, 2010). Water management is a crucial element in efforts to combat a significant desertification of the country and in preserving arable land. If it is to continue to meet current water needs and provide for the social and economic development of future generations, Tunisia must preserve and better manage its existing and available water resources.

THE TUNISIA-JOBS PROJECT

The Tunisia-JOBS Project partnerships engaged the University of Colorado (CU) in collaboration with Tunisian ISETs at Sidi Bouzid, Médenine, and Tataouine. These three ISETs were selected because they are located in rather poor interior regions of Tunisia with little infrastructure and job opportunities. The main objectives of the partnerships included developing curriculum for new renewable energy and agricultural programs and establishing Sustainable Solutions Centers (SSCs) in order to achieve several interrelated goals:

- Facilitate working relationships between the ISETs and their local communities, including industrial facilities
- Assist ISET faculty members in identifying and assessing needs and entrepreneurial opportunities within their local communities
- Encourage ISET faculty members and students to devote themselves to finding solutions to real problems
- Build capacity of ISET faculty and attract more students in the fields of water management, renewable energy, and energy efficiency technologies
- Foster entrepreneurial and applied research activities within the ISETs

The focus of the first JOBS-Tunisia partnership, between CU and ISET Sidi Bouzid, was to promote water management, energy efficiency, and renewable energy technologies in the agricultural sector. Additional partners involved in this partnership include the International Center for Appropriate and Sustainable Technologies (iCAST), National Renewable Energy Laboratory (NREL), Colorado State University (CSU), University of Hawaii (UH), and Red Rocks Community College (RRCC). In this partnership, a series of courses (including *Energy Audit*, *Renewable Energy Technologies*, *Industrial Refrigeration*, *Water Management*, and *Energy Efficiency and Renewable Energy Entrepreneurship*) were developed to enhance the current ISET curriculum in a variety of agriculture-related areas. The new courses provide students and professionals in agricultural disciplines with practical information and procedures in design, evaluation, implementation, water management, energy efficiency, and renewable energy projects. It is hoped that these courses will lead to the development of advanced academic training programs and a new curriculum at ISET Sidi Bouzid that will focus on state-of-the-art

knowledge and applied research opportunities. In addition, the partnership established a Sustainable Solutions Center (SSC) for agriculture. The new center utilizes the learning model concept to engage local businesses and communities and acts as a vehicle to find relevant internships for students. Throughout the partnership, the Sustainable Solutions Center has conducted a series of seminars, short courses, workshops, and demonstration projects targeted to local communities.

The second JOBS-Tunisia partnership, between CU and the ISETs at Médenine and Tataouine, focused mainly on promoting sustainable energy technologies in the industrial sector. Additional partners in the project included iCAST, NREL, and RRCC. A series of courses (including *Energy Audit, Renewable Energy Technologies, Cogeneration, Industrial Refrigeration, and Energy Efficiency and Renewable Energy Entrepreneurship*) were developed to provide students and professionals with practical information and procedures in the design, evaluation, implementation, and financing of energy efficiency and renewable energy projects for the industrial sector. It is hoped that these courses will enhance the ISETs' curriculum and professional training programs and lead to the development of advanced academic training programs in the field of energy at the ISETs that will focus on state-of-the-art knowledge and applied research opportunities. As part of the partnership, Sustainable Solutions Centers were established in both ISETs to engage local businesses and communities and serve as a vehicle to find relevant internships for students. The Sustainable Solutions Centers have conducted a regular series of seminars, short courses, workshops, and demonstration projects to reach local communities.

The two partnerships were executed in three phases. Phase I focused on building capacity among faculty and students, and included developing and delivering courses on water management, energy efficiency and renewable energy technologies, training ISET faculty members on state-of-art testing equipment and analysis techniques, and collaboration on applied research projects between CU partners and ISETs. Phase 2 focused on establishing Sustainable Solutions Centers. The first step was to create SSCs at each of the ISETs using the iCAST service-learning model. Directors for the SSCs were trained in Colorado by iCAST and an NGO, iCAST-Tunisia, was created. As a third step, project partners developed and installed demonstration projects with SSCs. Phase 3, which focused on improving student abilities to

solve local community needs, including a needs assessments of local communities and the formulation of applied research projects for students, the strengthening of the applied research capabilities of ISET faculty and students, and training students to be entrepreneurial in taking opportunities to meet the needs of the community.

EMPLOYING THE PRINCIPLES OF SERVICE LEARNING

While the main purpose of the establishment of the ISETs in all Tunisian governorates was to foster interactions with their local communities, most ISETs in Tunisia have significant difficulties in providing technical or educational services to meet local needs. Generally, ISETs and their local communities have limited interactions, a challenge that may be due to the reality that course content is set by the Ministry of Higher Education with little flexibility to adapt to local needs; the lack of industrial infrastructure in several governorates, especially in southern regions of Tunisia (Médénine and Tataouine) or interior regions (Sidi Bouzid); and the lack of incentives for faculty members to establish connections with local stakeholders.

The project partners saw that the principles of service learning could be applied to help meet some of those challenges, even though the concepts of service learning and project-based learning are not as common in Tunisia as they are in the U.S. Specifically, for example, establishing service learning programs as part of CU-ISET partnerships was considered a means to facilitate better integration of the ISETs with their local communities.

Concepts of service learning: There are several variations for defining service learning. Hatcher and Bringle (1997) captured the essence of service learning by including all of its key elements: education and academics, partnership with communities, service and civic responsibility, and analysis and reflection. Hatcher and Bringle define service learning as an educational experience in which students provide a service for an identified community need and reflect on the service activity to gain further understanding of the course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility. Service learning is compatible with Kolb's learning cycle (Kolb, 1984).

The concept of service learning has only recently received more attention in engineering education. Since the late 1990s, several U.S. universities and colleges have implemented service learning in engineering programs (Thomas, 2000). The Accreditation Board of Engineering and Technology (ABET) has placed service learning concepts and professional skills, including teamwork, communication, and awareness of social issues, as part of core engineering curricula (ABET, 2015). Service learning has several benefits that can enhance the learning experience of students in a wide range of engineering disciplines, including in the following ways. Students can apply their classroom knowledge to solve real community problems and thus provide needed services to otherwise underserved populations. They can improve their social skills by communicating with their local communities and thus broaden their view of engineering. Students can also develop better awareness of real-world problems and associated solutions and thus can meet industry needs to recruit graduates with real-world experience.

Service learning initiatives funded by the National Science Foundation (NSF) include *Service Learning Integrated throughout a College Engineering* (Duffy et al. 2008) and *Engineering Projects in Community Service* (Coyle, 2005). Moreover, professional societies have established divisions and chapters focused on service learning, such as the community engagement engineering division of the American Society of Engineering Education. Engineering-focused service learning partnerships between universities and communities are typically facilitated through NGOs. For instance, Engineering Without Borders now supports several student senior capstone design courses. The University of Colorado has initiated the first student chapter in the U.S. (EWB, 2015). The International Center for Appropriate and Sustainable Technology, another organization that has helped match local community needs with U.S. universities and colleges' service learning programs in energy efficiency and renewable energy technologies (iCAST, 2015), provided a model for the Tunisia-JOBS project.

Applying service learning in Tunisia: With its experience with service learning, iCAST was included as a partner in both CU-ISET partnerships, primarily to train the coordinators of the SSCs in the three ISETs. It was intended also that iCAST would help establish linkages between local communities and ISET faculty and students through a series of seminars, workshops, and need assessments.

Generally, ISET directors as well as faculty and students embraced the activities of the Sustainable Solution Centers even though they wanted more funding for its activities in order to acquire more testing equipment to carry out more applied research projects and for organizing seminars for local community stakeholders. During the initial presentation of the scope and the objectives of the CU-ISET projects, most of the stakeholders, including governors, farmers, industries, and local professionals, were enthusiastic about the concept of service learning even though they were skeptical about the capabilities of ISET students to provide the needed technical assistance.

Despite those reservations, students at all three Sustainable Solutions Centers completed a wide range of service learning activities during the first year of their establishment, including:

- Site visits and energy audits for local companies
- Development and testing of temperature logging systems
- Awareness day on the use of solar energy for residential buildings
- Seminars in promoting renewable energy technologies to local professionals and operators of industrial facilities in the southern region of Tunisia
- Energy audits of industrial facilities
- Presentation for internships and projects in Sustainable Solutions Centers
- Series of workshops on how to use simulation tools for assessing feasibility of renewable energy projects
- Assessment of industrial facility (brick factory)
- Evaluation of solar powered lighting system
- Feasibility analysis of a cogeneration system for an industrial facility
- Organization of needs assessment visits to local farmers
- Participation in an awareness day to promote photovoltaic pumping

Those activities allowed both faculty and students to assess their local communities' energy and water needs and provide potential solutions by conducting feasibility analyses and/or building and testing prototypes. Moreover, the centers provided seminars and workshops to local

professionals to showcase the latest simulation tools and test equipment to perform energy auditing and assess available renewable energy and water resources.

So far, both ISET Médenine and ISET Tataouine were successful in securing some external funding from local industrial companies to either perform technical assistance or to train their technicians. Since ISET Sidi Bouzid is focused on the agricultural sector, it has been more difficult to secure external funding as the region is comprised mostly of family-run farms with few resources to invest in this technical assistance.

LESSONS LEARNED AND BEST PRACTICES

A number of challenges were encountered during the implementation of the Sustainable Solutions Centers in all three ISETs. While some were eventually overcome, others remain unresolved and thus need to be considered in order to ensure that the activities of the SSCs continue beyond the completion of the CU-ISET partnerships. The table that follows discusses each of the most relevant challenges encountered and lessons that were drawn from each challenge.

Project Challenges	Solutions/Lessons Learned
Working with Centralized Higher Education	
The top-down approach of the education system in Tunisia makes it difficult to directly incorporate any changes in the operation of higher education institutions such as the ISETs.	Any significant actions, such as establishing a center to facilitate the connections between the ISETs and their local communities have to involve the Ministry of Higher Education at all stages of development.
The ISETs depend highly on decisions of their directors, with no internal institutional policies and operating	Copies of MOUs and any other agreements should be kept and provided to any new ISET directors. Some adjustments of partnership

<p>mechanisms. One effect is that partnership agreements have to be adjusted when new directors are elected.</p>	<p>activities may be needed based on the priorities of the new directors.</p>
<p>Funding SSC activities can be a challenge given that the Ministry of Higher Education controls all cash flows and ISETs do not have their own independent budgets or accounts to transfer costs and conduct similar financial transactions.</p>	<p>One solution was to resort to individuals paying out-of-pocket and getting reimbursed. The inherent challenge in that approach is the need to ask individuals to first pay out of their own funds and then be reimbursed using receipts rather than invoices.</p> <p>For short courses and workshops for local professionals, local associations were used to channel the funding flows.</p>
<p>The lack of any legal framework within the ISET system to establish and operate the Sustainable Solutions Centers was a challenge. The policies and regulations of the Ministry of Higher Education do not allow for institutions and especially ISETs to establish and operate centers that address local realities and can be self-sustaining.</p>	<p>Some mechanisms have to be found for the ISETs to establish funded activities that may benefit the faculty and students and foster entrepreneurships, such as the establishment of an NGO that can connect the SSCs to possible funding opportunities (industries, governmental agencies) or the integration of SSCs into the organizational chart of the ISETs, either as new research units or as part of existing incubators.</p>
<p>The initial challenge for establishing the Sustainable Solutions Centers was to identify and train SSC coordinators to establish and manage the activities of the centers; most ISET faculty members were reluctant to collaborate with coordinators</p>	<p>Based on the experience of the partnership projects, we learned that SSC coordinators were best recruited from within the ISETs.</p>

<p>outside the ISET system. An initial attempt to recruit an external full-time coordinator for the SSC at ISET Sidi Bouzid, for example, was not successful due to lack of technical skills and reluctance of ISET faculty to work with an outsider.</p>	
<p>There was no mechanism to pay the SSC coordinators through the ISETs. Salary supplementations are highly discouraged by donor regulations as they are not sustainable post-award, and in some cases are illegal.</p>	<p>In order to be able to provide financial incentives to establish the centers, start the implementation of the service learning concepts, and initiate projects to address needs of local communities, the initial arrangement was to recruit SSC coordinators as consultants to the University of Colorado. Later, the financial incentives were replaced by a reduction in coordinators' teaching duties to institutionalize their SCC role, which we believe is a more sustainable practice.</p>
<p>Location of ISETs</p>	
<p>The lack of infrastructure in the regions of all the ISETs reduces the exposure of students and faculty members to real-world engineering projects and limits entrepreneurship opportunities in the industrial sector.</p>	<p>It was decided that SSCs can expand their activities to assist communities located beyond their regions and initial targets. For instance, the SSC at ISET Médenine initiated service learning projects with hotels in Djerba (a well-known tourist destination island 50 kilometers from Médenine) in order to perform energy audits and help them reduce energy consumption.</p>

<p>The lack of local infrastructure, including industries, transportation, and entertainment, affects student enrollments in all the three ISETs in that Tunisia’s interior locales are less attractive to students than coastal locations. For instance, ISET Tataouine, which can house more than 1,000 students, enrolls only 250. As a consequence, faculty members sometimes ask to be assigned to other ISETs (typically located in coastal areas of Tunisia) because they do not have any courses to teach or students to supervise.</p>	<p>One of the underlying goals of working with these three particular ISETs was to encourage more enrollments. It is hoped that the new and in-demand fields of energy efficiency, renewable energy, and water management technologies will attract students to these ISETs. It remains to be seen whether the new capacity at the ISETs will be enough to attract more students. ISETs and the Ministry of Higher Education may need to do more to make these programs attractive and to publicize them. Future employment statistics of graduates in the field of renewable energy could help boost enrollment.</p>
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Incentives for Faculty and Student Involvement

<p>Promoting the new concept of service learning within the ISETs and recruiting ISET faculty and students to work on SSC initiated projects as part of the PFE (Projet de Fin d’Etudes) requirements was a challenge.</p>	<p>In order to encourage ISET faculty and students to solve real-world problems that can assist the local communities, a student competition was organized by SSCs. Such competitions provide incentives for both faculty and students to consider topics related to energy efficiency, renewable energy, and water management technologies that can address some of the needs of the local communities.</p>
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Sustainability

<p>The three-year duration of the</p>	<p>Future funding is needed. Commitments from</p>
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<p>partnership projects is rather short considering the significant efforts needed to understand the structure of higher education institutions in Tunisia and identify relevant stakeholders within and outside the ISETs, including in their local communities. A project of longer duration would also allow to time to ameliorate the potentially negative impact of any changes in leadership in both U.S. and Tunisian governmental institutions.</p>	<p>fundors for longer-term funding for proven partnerships will be required. Adhesion to an implementation plan, even if it changes significantly after changes in leadership in the U.S. and Tunisian governments will also be necessary.</p>
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RECOMMENDATIONS FOR FUTURE PARTNERSHIPS IN TUNISIA

Despite the challenges outlined in the previous section, the service learning approach was widely embraced by stakeholders within and outside the three ISETs that were involved in the Tunisia-JOBS partnerships and was successfully initiated by those ISETs through the establishment of Sustainable Solutions Centers. Moreover, several other ISETs have indicated that they would like to have assistance in implementing service learning through centers of their own. In order to initiate future partnerships, expand service learning activities, and establish centers similar to the Sustainable Solutions Centers in other higher education institutions in Tunisia, however, the following actions are highly recommended:

- Involve the Ministry of Higher Education, as well as the specific stakeholders of the institutions (faculty and students), in the development of the activities of the partnerships at all implementation stages from design to closeout, and seek to align development activities to ministerial initiatives. Indeed, high-level buy-in to the scope and activities of the partnership is essential for the successful development of new

curricula, new programs and specialties, and new centers such as the Sustainable Solutions Centers.

- Work with the Ministry of Higher Education to identify mechanisms to develop policies and regulations that allow institutions such as the ISETs to effectively interact with and serve their local communities.
- Develop incentives for service learning programs within the institutions that encourage faculty and students to address local community needs and propose solutions to real problems within their local environment. These incentives might include funding or donations to acquire applied research equipment for faculty and placement as interns for students, or institutionalizing these functions as part of a faculty job description while reducing teaching loads.
- Foster applied research projects and slowly introduce some flexibility within the ISETs to adopt new curricula in response to workforce needs. For instance, new elective courses and certificates could be developed based on the need of local industries. Moreover, projects could be framed with close involvement of local stakeholders.
- Involve both U.S. and Tunisian students in joint service learning activities as part of their curricular activities (in final projects—typically referred to as a “Projet de Fin d’Études” (PFE)—and independent study or volunteer projects).

As demonstrated by the variety of applied projects initiated from local community needs that form the heart of this project, Tunisia can be a rich BMENA region case study for U.S. students and faculty members interested in community development projects related to implementing and testing renewable and energy technologies for a wide range of applications, including building, industrial, and agricultural sectors. By implementing the recommendations offered here, partnerships with higher education institutions in Tunisia will be easier to initiate and will be more beneficial to all stakeholders, including U.S. and Tunisian students. An inherently important component is the engagement of the Ministry of Higher Education, the only decision-making body in higher education in Tunisia; such engagement is vital to the success and sustainability of any partnership with any Tunisian institution. Further, as noted earlier, the involvement of the Ministry of Higher Education can facilitate the adoption of new programs and establishment of new centers.

SUMMARY AND CONCLUSIONS

The Tunisia-JOBS project was initiated to introduce engineering service learning concepts in three ISETs in Tunisia—at Sidi Bouzid, Médenine, and Tataouine. After overcoming several challenges, Sustainable Solutions Centers (SSCs) were established in all three ISETs. These centers were able to establish linkages with their local communities through site visits, seminars, and needs assessments related to energy and water resources. After building capacity of faculty members in energy efficiency, renewable energy, and water management technologies, the SSCs were able to initiate and complete real-world solutions based on needs and problems identified by the SSC coordinators. While the operation and management of the SSCs were challenging due to the lack of legal and administrative framework within the ISET system and the limited industrial infrastructure in the regions where the three ISETs are located, students and faculty as well as stakeholders within the ISETs' local communities have been convinced of the benefits of the service learning programs that the partnerships have tried to develop.

Several challenges remain to allow the SSCs to operate sustainably after the completion of the CU-ISET partnerships. Some of these challenges are beyond the scope of the partnerships and are related especially to the lack of development in the interior regions in Tunisia. Other challenges, however, can be overcome through solutions that have been tested to be effective in the U.S. To foster linkages between ISETs and their local communities, for example, NGOs similar to iCAST can be established and operated outside the ISET system to both identify community needs and match technical expertise of ISETs to address community problems. Such NGOs can become bridges between the ISETs and key stakeholders in the local community and can provide a channel for working around changes in administrative policies in the ISETs. Moreover, NGOs can help to fund SSCs by directly acquiring needed equipment to build prototypes, involving faculty members and students as consultants while providing technical assistance to underserved local communities. Alternatives to the NGO model can also be considered, including establishing research units within the ISETs that are self-funded through applied research projects, or involving associations such as ISET faculty to organize training of local professionals. All of these models could be effective in implementing service learning

programs in Tunisia. They could also ensure the long-term sustainability of the SSCs—not only in the three ISETs that were part of the CU-ISET partnership projects, but across all the ISETs in Tunisia and in other higher education institutions in the country.

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Broader Middle East and North Africa–U.S. Community College Initiative

Responding to and Collaborating With the Private Sector: A Road Map to Stakeholder Engagement in Workforce Development in Jordan

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PARTNERSHIP AT A GLANCE

In the context of a need for greater employment opportunities for youth in Jordan and prompted by a shared belief in engaging private industry in partnerships and sustaining their involvement in the design of workforce education training, Al-Huson University College in Jordan and Red Rocks Community College in the United States collaborated to design a project to develop new workforce education programs in the emerging renewable energy and occupational health and safety sectors in Jordan.

PARTNERS

Red Rocks Community College, Lakewood, Colorado
Al-Huson University College (part of Al-Balqa Applied University), Irbid, Jordan

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Initial grant: \$131,594 (August 1, 2010 – September 30, 2011)
Scale-up grant: \$379,518 (January 1, 2012 – December 31, 2014)
Total Institutional Cost-share contribution: \$224,884

INTRODUCTION

In the context of a need for greater employment opportunities for youth in Jordan and prompted by a shared belief in engaging private industry and sustaining their involvement in the design of workforce education training, Al-Huson University College (HUC) in Jordan and Red Rocks Community College (RRCC) in the United States collaborated to develop new workforce education programs in the emerging renewable energy and occupational health and safety sectors in Jordan.

The project began in 2010 when Dr. Ayman Maqableh, an associate professor at Al-Huson University College, contacted Red Rocks Community College Dean Joan W. Smith regarding RRCC's success in developing solar energy technicians in Colorado. Their initial conversations focused on HUC's innovative idea for a proposed renewable energy program, the Green Energy Cluster, in which employers and other stakeholders would provide curriculum oversight, guest lecturing, and student internships. One novel aspect of the Cluster concept that RRCC found particularly intriguing is that it sought industry input prior to the establishment of a degree program. The Green Energy Cluster became the foundation for a five-year project developed by the two institutions and funded by USAID through a Higher Education for Development sub-award and scale-up totaling just over \$500,000.

The authentic engagement in the Cluster by private industry and regional stakeholders greatly expedited the work of the partners in this effort and, just one year after their initial conversation, students were enrolling in the HUC Solar Energy Technology Program in Irbid, Jordan. This paper describes the process of working with industry stakeholders and how the two partners leveraged both public and private sector support to successfully implement new degree programs at HUC.

PARTNER INSTITUTIONS

Red Rocks Community College, opened in 1969, is one of 17 colleges in the Colorado Community College System. RRCC has campuses in Lakewood and Arvada, Colorado, both suburbs of Denver. RRCC averages an annual enrollment of 12,000 students and offers more than 650 technical certificate programs in addition to associate degrees in the arts and applied sciences. RRCC also developed the first Bachelor of Applied Science to be conferred by a community college in Colorado, in water quality management. Joan W. Smith, the RRCC representative for the partnership, is dean and executive director of technical programs at RRCC, including the renewable energy technology and the water quality management programs. Ms. Smith leads the continuing education division of the college as the executive director of the Rocky Mountain Education Center, which is authorized by the U.S. Department of Labor Occupational Safety and Health Administration (OSHA) as a regional OSHA Education and Training Institute.

Al-Huson University College (HUC), located in Irbid, is one of 43 two-year colleges in Jordan. The Al Balqa Applied University System oversees the two-year schools, which include both public and private institutions. Program approval authority is vested in the Deans Council of the Al Balqa Applied University System. HUC has a track record of successfully working with USAID Jordan since 2007, when the USAID Jordan Economic Development Program funded the establishment of the Al-Huson Career Development Center, the first of its kind at any academic institute in Jordan. Dr. Ayman Maqableh, the HUC representative to the partnership, served as director of the Career Development Center, which connects with private industry to help students find jobs. HUC also previously participated in public-private partnerships through the USAID/Jordan SHARAKA initiatives, which matched vocational trainees and students with labor market demands by offering graduates internships, scholarships, and on-the-job training in cooperation with the public sector. Private partners began looking to HUC for specific workforce training (e.g., the Consolidated Contractors Company supporting the Piping

Technology Training Program at the HUC campus), and partners leveraged and expanded these private/public partnership models at HUC under the new HED funding.

PROGRAM ACCOMPLISHMENTS

The partners created two new degree programs in career fields that had not previously existed in the higher education system in Jordan—one in solar energy technology (SET) and another in occupational health, safety, and environment (HSE). Development of both programs included approvals from the Deans Council, professional development of instructors, enrollment and retention of students in the programs, and assessment of student competencies measured both in the classroom and in worksite internships. As of December, 2014, enrollment in the Solar Energy Technology Program totaled 188 students, and 36 students had graduated from the program with an associate degree. To date more than €9 million has been received from a variety of funding sources to expand solar energy technology installations on the HUC campus. Sixty-five students registered for the inaugural term of the Occupational Health and Safety Program in Fall 2013, in part with private sector support from a key program advisory committee member, Consolidated Contractors Company, which funded renovations at Al Balqa Applied University's Marka campus to house the program.

The partners completed a market and technology review of water management and waste water treatment processes in Jordan and developed a plan to market by-products of improved waste water management. The partners also created a proposed study plan and course outlines for a new degree program in water engineering. The partners are exploring a variety of funding streams to help with the launch of the new program in water quality management and waste water treatment.

CONTEXT IN JORDAN AND DEVELOPMENT OF THE PROJECT

The workforce programs developed by the partners were grounded in Jordan's policies and economic development goals and designed with student employment outcomes in mind.

Solar Energy Technology Program: The Jordanian Energy Strategy, issued in 2007, sought to address the unmanageable cost of the country's energy consumption, which had reached 20 percent of Jordan's annual gross domestic product. The strategy set a goal to increase the share of renewable energy in its energy-use portfolio to 10 percent by 2020 (International Energy Agency, 2013). The generation of electricity from solar has been comparatively slow in coming to the Middle East, however the Renewable Energy and Efficiency Law, passed by the Jordanian parliament in 2011, (GreenPeace, 2013, p. 4) pushed the country toward wider adoption of renewable sources of power, including solar.

The Green Energy Cluster (GEC), formed by HUC in 2010, engaged new and developing solar energy companies and stakeholders that have a vested interest in creating a technical workforce to achieve ambitious goals for renewable energy production in Jordan. The GEC was modeled after existing public/private partnerships in higher education developed at HUC through previous initiatives, such as the USAID-funded Career Development Center, the SHARAKA project's efforts to promote relations between the European Union and the Gulf Cooperation Council, and a piping technology training program supported by the Consolidated Contractors Company.

Through the GEC, the private sector supported HUC and RRCC staff and faculty in adapting a curriculum provided by RRCC to employer expectations and working conditions in Jordan.

Occupational Health and Safety Program: Following successful networking with and feedback from the employers and stakeholders engaged in the Solar Energy Technology Program, the partners also undertook to develop a program in occupational health and safety.

Jordan's Labour Code includes provisions for stiff penalties for workplace violations that result in worker injury or death, including the permanent closing of a business. Under the Code, and as part of a national strategy to improve worker safety and health, the Minister of Labour may appoint safety supervisors to be present at worksites (ILO, 1996). Estimates of the number of safety supervisors that are needed in Jordan exceed 5,000. To date these positions have not been fully filled primarily due to a lack of qualified personnel. The occupational safety and health professionals that do work in Jordan tend to be foreign nationals that have been brought to Jordan by an employer that contracts with non-Jordanian companies that require worker safety programs.

Prior to the launch of the Occupational Health and Safety Program at HUC in 2013, there were no training programs in Jordan's higher education system in occupational safety and health. The Occupational Safety and Health Institute (OSHI), which had operated in Jordan as a vocational training program to help bridge this gap, did not have broad support among employers. OSHI training had not kept pace with the changing needs of industry in Jordan, and as a result many employers were no longer willing to send their workers to the OSHI for training.

Following a process similar to the one used to develop the Solar Energy Technology Program and the Green Energy Cluster, the partners developed the Occupational Health and Safety Program. Program development was aided by an advisory committee that included representatives of private sector businesses, including heavy industry and construction. The Program Advisory Committee (PAC) developed a job description for junior safety officers that was used to identify student competencies.

ALIGNING CURRICULUM AND TRAINING TO NEEDS OF JORDANIAN INDUSTRY

The process of working with industry stakeholders included synchronizing training subjects and standards with industry requirements. As one lesson in the course of research and collaboration with stakeholders, partners concluded that broad new training programs in renewable energy and occupational health and safety would be successful only if they were introduced gradually, if their development was driven indigenously with industry input, and if the programs were built on international standards, such as OSHA. But deeper issues also had to be addressed. Traditional education at many institutions in Jordan is organized around rote learning rather than critical thinking and application of concepts to real-life situations. For example, as the authors of the *Arab Human Development Report 2003* stated, “In Arab countries, lectures seem to dominate. Students can do little but memorize, recite, and perfect rote learning.... Communication in education is didactic, supported by set books containing indisputable texts in which knowledge is objectified so as to hold incontestable facts, and by an examination process that only tests memorization and factual recall” (Helmore and Jamal, Eds, 2003, p. 4). This model of education is not designed to meet the needs of industries that require technicians to be self-directed.

In order to produce graduates with the capacity and curiosity needed to engender continuous learning, the partners engaged industry through the GEC and PAC to help guide and support the development of industry-aligned curriculum and labs replicating industry skills and standards, and to create workplace experiences and internships essential to a student’s capacity to be “job ready” upon graduation. For the program on solar energy technology, for example, the partners adapted existing courses in RRCC’s Associates in Applied Science (AAS) degree in Renewable Energy Technologies. Troy Wanek, chair of the RRCC Solar Energy Technology Program, made extended visits to Jordan to join Dr. Maqableh in meetings with industry. These sessions were used to refine content based on industry specifications. Similarly, the health and safety curriculum was modeled after existing RRCC certificate programs offered through the

Rocky Mountain Education Center's OSHA Education and Training Center. RRCC contacted colleges across the U.S. to collect models of two-year degree programs on health, safety and the environment. These course outlines and student outcomes were compared to the student competencies developed by the program advisory committee in Jordan.

OVERCOMING CHALLENGES: STRATEGIES FOR SUCCESS WITH PRIVATE SECTOR ENGAGEMENT

The partners employed a variety of strategies to create strong, relevant programs and overcome numerous challenges. Innovative approaches used in the project went well beyond those commonly seen in public/private education partnerships and ideally can be replicated by others seeking to engage in education partnerships with a workforce focus.

The Footprint Strategy: Given the fledgling state of modern solar photo voltaic technology in Jordan, the partners recognized two significant potential barriers in recruiting students for the new program on solar energy technology. First, Jordanian youth enrolled in colleges are not widely accepting of technical or vocational career paths. Second, unlike in the United States or Europe, where rooftop solar photo voltaic (PV) panels are a common sight, the students attending school at HUC were not familiar with grid tie solar PV technology (Urdinola, Kuddo, & Semlali, 2013, p. 71). While simple solar thermal systems to heat water are widely used in Jordan, generating electricity from solar through a grid tie system was largely unknown.

The partners decided to create a “footprint” on the HUC campus prior to the program launch. To that end, the chair of the Renewable Energy Program at RRCC traveled to Jordan to assist in the lab design and installation of the first solar PV grid tie system. Potential students watched as this dedicated lab space took shape. The “buzz” created

by both the new space with its very visible solar panels and widely publicized plans to install multiple solar technologies to power the lab was extremely effective, helping to prompt more than 100 applications to the degree program for its inaugural term.

In terms of the program on occupational health and safety, the campus in Marka where the HSE program was to be located did not have the same student traffic. Project partners had to rely on more traditional marketing of the new program through existing career advising offices at Al-Balqa Applied University (BAU), but experienced enrollment challenges due a BAU administrative decision to increase student tuition for the program and to designate it as a liberal arts program, which resulted in admissions requirements for students that did not include the educational preparation and English language proficiency that the program required. (This challenge is discussed below.)

Donations From Industry—A Comprehensive Approach: The “footprint” strategy of creating dedicated labs and classrooms with hands-on equipment generated more than just enthusiasm among students for learning opportunities beyond traditional classroom lectures. As a result of the initial footprint project, Al-Huson University received more than €9 million euros in funding and donations to expand solar energy installations at the HUC campus. Through the leveraged funding sources, all buildings on the HUC campus will be powered by solar energy in 2015. Funders were attracted to HUC as a direct result of the partnership and have helped make HUC a regional leader in solar energy technology and workforce education.

Donations of equipment from industry have significantly expedited the goal of achieving a solar powered campus at Al-Huson. Donations of equipment and professional services have included solar photovoltaic equipment from Kirchner Solar and internships from NOOR Solar and Philadelphia Solar. The Jordanian Technical Vocational Education and Training Fund provided scholarships for students studying solar energy technology as well as funds for external instructors, equipment, and lab renovation.

Engaging Industry Stakeholders Through Direct Involvement in Planning: One of the advisory committee members for the Occupational Health and Safety Program, Joe Duomani, human resources manager for Consolidated Contractors Company (CCC), was pursuing an opportunity to create a legacy in memory of Hasib Sabbagh, one of the company's co-founders. Mr. Duomani had been exploring a partnership with the national Occupational Safety and Health Institute (OSHI) under the goal of renovating and expanding OSHI to better meet the needs of Jordan's construction and industrial employers to train safety officers, but efforts to arrive at a mutual agreement were not successful. Mr. Duomani reached out to the partnership as an opportunity materialized to renovate a building on the Marka campus of the Al Balqa Applied University System. Involving CCC in the campus renovation gave the company, as the lead industry partner, the direct influence they were seeking by investing in an educational program in which all aspects from facilities to curriculum were tailored to meet their employment needs. The partners assisted the CCC development team in designing the learning environment that included an industrial hygiene lab and an outdoor training ground for skill demonstrations of confined space entry, fall prevention and arrest, scaffolding, trenching, and safe operations of forklifts and other mid-size heavy equipment. The renovation of the 7,000 square meter building, named the *Hasib Sabbagh Academy*, was completed in time for the inaugural class enrollment fall 2014.

Public Sector Support: The National Energy Research Center, a Jordanian-government public research institution, contributed expert instructors to teach three solar program modules, provided photovoltaic modules for lab work, and also provided internship opportunities for solar energy students. Another factor in the success of the Solar Energy Technology Program was that the partners were successful in receiving scholarship funding from the Jordanian Employment, Technical and Vocational Education and Training Council (E-TVET) for 100 percent of the students enrolled in the program. The E-TVET funding, created as part of the Jordan's National Agenda 2011-2013, was designed to increase the skills of Jordanian nationals, given that more than 20 percent of Jordan's labor force is made up of foreign workers (Urdinola et al., 2013, p. 71). The high rate of foreign workers is attributed to the lack of qualified candidates living in

Jordan. Programs such as those developed by HUC and RRCC are helping the Jordanian government to address this issue.

Focus on Multiple Pathways to Employment: The partners understood that the most critical component in creating program sustainability hinged on a key summative measure: student employment upon graduation. Jordan experiences an extraordinarily high rate of unemployment among college graduates, reaching as high as fifteen percent (Urdinola et al., 2013, p. 70). Compounding the unemployment rate in this case was the fact that there are few established employers in the solar energy industry given the newness of the technology to the region. Accordingly, the partner's advanced a strategy to encourage and create multiple pathways to employment for the graduates of the program on solar energy technology, including traditional employment in the sector, self-employment or small business creation, and bridging to university for further academic training and skills development.

Advisors from industry in the Green Energy Cluster played a vital role in creating internship and workplace experiences for students prior to graduation. The students completed capstone projects to demonstrate their ability to use their new knowledge cumulatively in producing practical applications of solar technology while showcasing their capacity for critical thinking and real-world problem solving. The partners recognized that to achieve desired employment outcomes, students would need support as entrepreneurs. Students considering small-business ventures were encouraged to develop business plans and portfolios featuring the renewable energy projects completed during their training as part of their capstone. While data on employment placement does not yet exist for the project, the partners do collect anecdotal evidence of individual student graduates and will track employment outcomes as the program proceeds.

Three student success stories illustrate the focus on multiple pathways to employment and other opportunities:

- **Traditional Employment:** Manal Abed Al-Gani finished her bachelor's degree in physics. Like 70,000 other Jordanian students who graduates every year, she found herself with no job and very limited prospects. After completing her BA, Manal enrolled in the Solar Energy Technology Program, where she was one of 12 female students in the first class of 50. Manal is now employed at a large solar energy company as a systems designer, a job usually reserved for engineers. However, in light of her experience on integrated lab equipment and practicums added by the USAID project that focused on the technical aspects of solar energy generation, Manal's employer found her skills to be well qualified for her new post.
- **Entrepreneurism/Small Business Creation:** Mosab Malkawi enrolled in the second matriculation of the Solar Energy Technology Program. He demonstrated a keen passion for renewable energy and the importance the development of this technology has for his country. In his last year in the program, Mosab successfully recruited investors to open his own solar energy business. He now owns one of the first businesses in solar energy in the north region of Jordan. He has joined the Jordanian Renewable Energy Society (JRES), and his active involvement positions him well to achieve his professional goal of one day becoming the director of the JRES.
- **Bridging to University:** Sham Baath wants to be an engineer. He knew that without the necessary exam scores after high school his chances were very slim. In Jordan each year, less than five percent of students successfully attain the score they need on the comprehensive exam to bridge to the engineering track after finishing vocational tracks. Having completed the Solar Energy Technology Program at HUC, Sham is one of seven students in the program who successfully met the challenge of the comprehensive exam. He is now enrolled in an engineering program at one of the best universities in the country, Jordan University of Science and Technology.

Leveraging Industry Relationships to Overcome External Challenges: Policy decisions made outside of the partnership at the university level resulted in the Occupational Health and Safety Program being classified originally as a liberal arts program. This classification outside of the engineering pathway resulted in students being accepted for the program who lacked the educational preparation or English language proficiency that was required for the curriculum that had been developed. The partners forwarded recommendations to the Al Baqa Applied University administration that the program be moved to the engineering pathway and that student prerequisites for enrollment should follow a prescribed standard similar to that of the Solar Energy students as outlined by industry members who advise the program. Perhaps in light of the strong partnership between CCC and the HUC project—including the recent creation of the Hasib Sabbagh Foundation, which provides full scholarships and employment opportunities for students—BAU administration agreed to make the recommended changes, which will improve students' qualifications entering the health and safety program under its new designation in engineering.

Another challenge was finding engineering faculty with sufficient industry experience to teach the occupational health and safety curriculum. Even after several attempts at recruitment, faculty with sufficient knowledge of workplace hazards in heavy industry and construction were not available. CCC demonstrated its commitment to the program by recruiting a professional engineer from industry with occupational safety and health experience to serve as the program lead faculty and director. CCC also provided funding at a rate beyond that of university faculty to pay for the services of the new program director.

In addition, CCC provided funding for curriculum adaptations made to courses in the Occupational Health and Safety Program by Red Rocks Community College. RRCC supplied a curriculum designer to reformat the courses and student assessments to allow an introductory level of instruction in safety and health that also exposed students to very practical hands-on experiences in recognizing and addressing workplace hazards in industrial and construction work places.

RECOMMENDATIONS

The partners have distilled three primary recommendations targeted primarily for those involved in or considering educational strategies that seek to improve participant employment outcomes.

When Enrolling Students, Use a Rigorous Selection Process Aligned With

Employer Needs: The partnership successfully added the Solar Energy Technology Program to the engineering pathway, which helped to ensure that student applicants had educational backgrounds and English language skills equal to the rigor of the level of study in that program. Also, procedures were put into place that allowed the program to accept students with higher scores on the Tawjihi, Jordan's general secondary national exam, and students who had already obtained a bachelor's degree. The ability to accept highly qualified students was key to the program's early success in retaining students and exceeding graduation goals within the program's first three years.

As discussed above, decisions made outside of the partnership posed challenges for the Occupational Health and Safety Program when that program was classified as part of the liberal arts versus engineering pathway. One result of that decision was that students applying for the Occupational Health and Safety Program lacked the requisite educational background and English language skills that the program required. The partnership responded by modifying the program's assessment and instruction strategies. However, the partnership did not consider this modification a long term solution, and continued to advocate for its classification in the engineering pathway to ensure the appropriate pre-requisite knowledge. The current class of students in the program is not expected to graduate at the same rate as students in the solar technology program; however, future incoming students to the Occupational Health and Safety Program will enter with more appropriate skills after its classification in engineering.

Develop Instructional Staff Before Program Launch and Include Detailed Plans for Training of Trainers as Part of Program Development:

As new programs are created, consideration must be given to the availability of instructional staff long-term. While the engineering focus of the program on solar energy technology helped it attract qualified faculty, the experience with the program on occupational health and safety was different. The latter program requires faculty with formal education in the management of health and safety in the workplace as well as field experience in industry. In the Irbid region, individuals with such skills are found only in industry and do not have formal training in teaching at the university level. The launch of the Occupational Health and Safety Program was therefore significantly challenged by the lack of qualified faculty. While the private sector partner CCC stepped forward to offer a competitive salary to allow recruitment of an instructor from industry, which allowed the program to launch as scheduled, this strategy cannot be considered a long-term solution given that the associated cost structure is not sustainable. Efforts are under way to create a train-the-trainer opportunity with a new commitment from Al-Balqa Applied University to refocus efforts on recruiting instructors for the Occupational Health and Safety Program who can participate in intensive training prior to classroom instruction.

Seek Third-party Industry Accreditations to Enhance Program Graduates' Employability:

Degrees alone are not always sufficient to ensure that students have mastered competencies required by prospective employers. Industry certifications continue to be a value-added qualification that demonstrates to employers globally that students graduating in applied technical fields have met the skill criteria set by a relevant industry. Accreditation by City & Guilds is recognized by the industry partners associated with both the programs on solar energy technology and occupational health and safety. The City & Guilds accrediting process brings additional value in that pursuing and retaining accreditation will require a continuous improvement process with appropriate benchmarks and regular reporting. Dr Maqableh oversees the acquisition of the City & Guild accreditation for several workforce training programs, such as welding, and plans to seek accreditation for the programs on solar energy technology and occupational health and safety.

The partnership sought involvement from a broad range of stakeholders to ensure the currency of the programs with regard to employer demands and expectations. Industry advisory members were engaged from the beginning of program development to guide the curricula objectives and teaching strategies. The advisory members have been instrumental in providing workplace experiences to students prior to graduation. Advisors for the program on solar energy technology have included NOOR Solar and Philadelphia Solar. Advisors for the program on occupational health and safety have included PepsiCo, PETRA HVAC, Consolidated Contractors Company, and the As-Samra Wastewater Treatment Plant. Faculty in the program on solar energy technology have taken advantage of industry-recognized training opportunities to increase their knowledge of evolving renewable energy technologies. Faculty participated in a two-week training from renewable energy companies in Germany, and the HUC partnership director Dr. Ayman Maqableh completed HSE training in OSHA standards during a J-I visa visit to the U.S. partner.

FURTHER OBSERVATIONS

In closing, two further observations warrant mentioning.

The Implicit Value of Engagement by Industry Partners Cannot be Overstated:

The strong tradition of workforce development at community colleges offers many opportunities to engage with the private sector. Employers have a vested interest in increasing the relevancy of technical and vocational degree programs and aligning the skills of graduates with the needs of industry. Public-private partnerships build mutually-beneficial relationships by engaging employers with higher education institutions through such activities as developing curriculum, designing and equipping lab space, or creating internships and pathways to employment. Many private-sector partners have an interest not just in creating better-trained graduates, but in creating a legacy of contributing value to their industry. For example, the development of the new solar energy lab space on the HUC campus and renovation of an entire Al-Balqa Applied University campus for

the Occupational Health and Safety Program by Consolidated Contractors Company were invaluable in engendering enthusiasm among students for the opening of the programs. The value of this participation cannot be overstated—indeed, it is vital for a program’s success.

All Program Partners Must Agree to Help Ensure Successful Program Outcomes:

While unemployment in Jordan affects the working class the most, it also afflicts the middle class. Given this context, training must take into consideration the potential societal effect of the instruction. If students are not employable at the end of a program, the training may be considered worse than no program at all.

Unless every stakeholder—including government, private industry, higher education, and program participants—agrees and commits to the outcome of training, individuals who successfully complete educational programs may still find themselves unable to find employment. Direct employer engagement at every stage of the student’s learning experience through internships, guest lecturing, job shadowing, mentoring, and engagement with faculty helps to ensure that students are job-ready at graduation. Toward these goals, the partners sought and received commitments from industry, educational institutions, and the Jordanian government prior to developing and implementing the programs. The partners were successful in sustaining these commitments because students had the skills upon graduation that employers requested and expected. To further help ensure successful student outcomes, the program partners emphasized diversification in student learning, including development of portfolios and skills in marketing themselves to potential employers.

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Broader Middle East and North Africa–U.S. Community College Initiative

Aligning Advanced Workforce Skills in Morocco: A Model Public/Private Partnership

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PARTNERSHIP AT A GLANCE

Advancing technologies in the transportation, energy, and aviation sectors make it critical that skilled technicians be agile lifelong learners in order to remain relevant in the workforce. Focusing on automotive diagnostic training, project partners sought to develop a model for developing a workforce in Morocco that is aligned with current and emerging technologies.

PARTNERS

Gateway Technical College, Kenosha, Wisconsin
École Supérieure de Technologie, Oujda, Morocco

Additional partners:

Snap-on Corporation, Kenosha, Wisconsin
National Coalition of Certification Centers (NC3), Oklahoma City, Oklahoma
Shoreline Community College, Seattle, Washington
Association for Career and Technical Education, Alexandria, Virginia

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Initial grant: \$148,482 (August 15, 2010 – December 31, 2011)
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Total Institutional Cost-share contribution: \$1,198,613.09

INTRODUCTION

Gateway Technical College (Gateway) in Kenosha, Wisconsin, and École Supérieure de Technologie (ESTO), in Oujda, Morocco, partnered to assist ESTO in becoming a regional leader in automotive diagnostics, transportation, and renewable energy technologies. The partnership also included Snap-on, Inc. and the National Coalition of Certification Centers (NC3), with contributions from Shoreline Community College in Seattle and the Association for Career and Technical Education.

The premise of the project was that the workforce in the BMENA region needs to be better aligned with current and emergent technologies. Due to advancing technologies in the transportation, energy, and aviation sectors, skilled technicians need to be agile lifelong learners in order to remain relevant in the workforce. Concomitantly, training institutions need to ensure that the curriculum and skills training they offer are aligned with current local and global industry needs. With these trends in mind, and with a focus on automotive diagnostic training as an identified key field, the project resulted in a successful, global, public/private partnership that can be replicated in other parts of the world.

PRIMARY PARTNER INSTITUTIONS

The major partners on this project include the following:

Gateway Technical College, Kenosha, Wisconsin: Serving more than 25,000 students in the Wisconsin counties of Kenosha, Racine and Walworth, Gateway advances an innovative approach to career and technical education. Gateway is aggressive in ensuring it delivers graduates who have learned real-world technical skills that get them hired. Gateway is considered a model college in its development of business partnerships, green career curriculum, and support for innovative and flexible education-delivery methods.

École Supérieure de Technologie (ESTO), Oujda, Morocco: École Supérieure de Technologie provides quality education and offers attractive multidisciplinary training related to regional and national priorities. Founded in 1990, ESTO serves more than 720 students annually. It offers ten 2-year technical degree programs and one 3-year bachelors program. ESTO emphasizes rigor and quality in its diversified array of educational programs and offers courses based on current and projected needs of the labor market.

Snap-on, Inc.: Snap-on is a leading global innovator, manufacturer, and marketer of tools, equipment, diagnostics, repair information, and systems solutions, with a mission of offering the most valued productivity solutions in the world.

National Coalition of Certification Centers (NC3): NC3 is a network of education providers and corporations that supports, advances, and validates new and emerging technology skills in the transportation, aviation, and energy industry sectors. NC3 develops, implements, and sustains industry-recognized portable certifications built on national skills standards.

The NC3 concept of a coalition of certification centers had its start with Snap-on and a small number of U.S. colleges, including Gateway Technical College, and has grown to include more than 200 certification centers in higher education institutions across the United States. The power of including this type of network of partners in the Gateway/ESTO project is that it afforded ESTO access to educators and students around the world that are using the same technology, learning methods, equipment, certifications, and assessments aligned with industry standards—access that potentially could be expanded in the BMENA region.

Gateway and ESTO met at an international economic and workforce development summit in Jordan in 2009 where the partnership model between Snap-on and Gateway was being presented. Attendees from ESTO expressed interest in the model. Following that meeting, the two institutions developed and submitted an application to Higher Education for Development (HED) to fund a partnership to establish an auto diagnostics training center in Morocco. Gateway and ESTO were funded by HED through USAID to provide technical support, curriculum development, and instructor training in automotive diagnostics. Through the initial

award and subsequent scale-up funding, and in conjunction with significant investment from the Government of Morocco and other stakeholders, the partnership remodeled a building at ESTO and outfitted it with new computers and equipment, resulting in a state-of-the-art, modern automotive diagnostic facility in Morocco (depicted in the graphic below).



CONTEXT IN MOROCCO

The most technically advanced product available to the global consumer is the automobile. Today's automobile is a technically advanced consumer product that requires a technically skilled automotive technician knowledgeable in computer controlled vehicle management systems. These complex systems require knowledge of system design, analysis, maintenance, and repair. One critical skill set for the modern automotive technician is the understanding of diagnostic processes and the use of automotive diagnostic tools that provide the technician with accurate information and validation of vehicle system operation conditions.

Automotive Sector in Morocco: The automotive transportation industry plays a significant role in leading and emerging economies around the world, including in Morocco. The Moroccan automotive industry has grown significantly over the past five years in two sectors, original equipment manufacturers (OEMs) and manufacturers. In 2012, Morocco opened its second auto-assembly plant, with a capacity of producing 400,000 vehicles per year.ⁱ

Morocco has implemented an action plan for expanding its automotive sector. This plan is based on initiatives to attract OEMs, manufacturers, and specialty manufacturers to the country and to develop a training program to serve the sector's needs. The availability of such skills is viewed as essential to development of and investment in the Moroccan automotive sector. To meet the need for skilled human resources for this sector, the higher education system in Morocco must be able to develop and offer career programs that advance managers, engineers, and technicians with suitable qualifications.

In general, Oujda, the eighth largest city in Morocco, lacked hands-on technical training to prepare young people for emerging job markets. Prior to the partnership, there was no automotive diagnostic training program at ESTO. According to Oxford Business Group's 2012 report on Morocco, "There are many more jobs in the industrial, tourism, energy, telecom, logistics and public works sectors and it is a question of matching human resources to these jobs."ⁱⁱ In that report, Ahmed Akhchichine, former minister of national education for Morocco, stated that "...collaboration between education and the private sector must increase. Universities need to develop partnerships with businesses to assess and meet needs."

Opportunities in Morocco: As Jean R. AbiNader, executive director of the Moroccan American Trade and Investment Center, and her colleague Katherine Kinnaird observed in April 2015, Morocco has made the nexus of jobs, skills, and human resources a priority for the next decade. "Having a young population can bring great dividends if youth acquire skills that are both relevant to the demands of the current labor market and applicable to areas where demand exists but has not yet been addressed," the authors observed. "Morocco understands that its young people, and under-trained adults, can make significant headway in building the diverse and responsive economy that Morocco must have to grow."ⁱⁱⁱ

PARTNERSHIP ACCOMPLISHMENTS

Broadly speaking, the Gateway/ESTO partnership undertook a wide range of activities that included the following:

- Expansion of current programming at ESTO to include automotive technician training
- Inclusion in the curriculum of multi-meter and torque technology relevant across industry sectors, including transportation, aviation, and energy
- Establishment of a diagnostic training program for automotive instructors and their students at ESTO
- Facilitation of student transition to colleges of technology
- Training, assessment, and certification of ESTO instructors to industry standards in diagnostics technology (train-the-trainer)
- Informing, modeling, and alignment of leadership and staff development toward multi-tiered ownership of programs and process
- Establishment of a process to certify training centers for the delivery of training courses in automotive diagnostics
- Benchmarking lessons learned at U. S. educational facilities (Gateway Technical College and Shoreline Community College) in ways that can inform the future of technical education in Morocco and the BMENA region
- Development of strategies for sustaining the project's work

The partnership model between Snap-on, Inc. and Gateway, on which the Gateway/ESTO project was based, deploys technological innovations, addresses industry standards, and links vocational training to employment. Building on that base, the initial project with ESTO focused on sharing best practices in automotive diagnostics training and strengthening cultural competencies to more effectively prepare a global workforce in the target countries and the U.S. To that end, Gateway provided technical support, curriculum development, and instructor training in automotive diagnostics. Specifically, USAID funds provided through the initial grant (\$148,842, 8/15/2010-12/31/2011) and investments from the Government of Morocco enabled ESTO to remodel a building and purchase computers and equipment, resulting in a modern, state-of-the-art automotive diagnostic facility. In addition, ESTO benchmarked technical

education at two U.S. community colleges, Gateway and Shoreline in Seattle, WA. Ten Moroccan instructors successfully completed an automotive diagnostics train-the-trainer program. In Morocco, representatives from ESTO along with their U.S. partners visited local automotive businesses and invited them to tour the updated lab and learning environment at ESTO. Students were also invited to tour the facility and learn about the new opportunity to enroll in the automotive program at ESTO.

Based on the success of the initial grant, Gateway and ESTO, in partnership with Shoreline, Snap-on, and NC3, were invited to apply for a second grant. A scale-up grant (\$388,764, 3/1/2012-6/30/2015) leveraged the partnerships, relationships, and momentum created through the initial grant with a focus on delivering a diagnostic training program to advance technician skill sets based on industry standards for the automotive industry in the BMENA region. The primary outcome of the scale-up project was to implement a training program designed to directly link unemployed youth with job opportunities in the automotive sector. A secondary outcome was the establishment of a Snap-on certified training center modeled after Gateway's Horizon Center for Transportation Technology, through which ESTO can serve as a regional training center and provide on-going training and certification to other colleges in the BMENA region.

The U.S. partner institutions consulted with ESTO on academic processes, methods, and implementation of a technician training program. Snap-on's supplier in the BMENA region and global representatives consulted on the partnership as representatives of industry. NC3's role in the partnership was to provide the platform for organizations to work together, develop, implement, and sustain the partnership. Work with local employers, automotive dealerships, and related stakeholders enabled localization of the program.

The partnership enabled a new generation of students to obtain hands-on training and skill sets that are important and valued in the global economy. Through the grant more than 250 industry-recognized certifications were issued to faculty and students.

As another result of the partnership, ESTO's staff has a better understanding of advanced technology and how it is designed, developed, and used. A paradigm shift from academic theory to hands-on application was necessary in order for ESTO staff to help their students be better-

prepared for available jobs in the region. What was new for them was teaching their students how technology is applied in business and industry environments to solve problems, support manufacturing applications and the service industry, and drive productivity. The paradigm shift was that education and industry need to not only engage in meaningful dialogue, but also need to form partnerships that provide relevant career opportunities for students and economic development opportunities. In that regard, ESTO and U.S. instructors created new alliances between U.S. community colleges and BMENA region community colleges that will grow and flourish long-term.

Through this partnership, Moroccan institutions now have a model for advancing their technology capabilities based on what the U.S. institutions have tried, learned, and now consider to be best practices. Rather than requiring each Moroccan institution to essentially start with a blank page, the U.S. institutions have been able to advise on lessons they have learned, making it possible for the Moroccan institutions to bypass potential pitfalls and avoid false starts. The timeline to ramp up a project of this size was considerably shortened based on previous learning through public/private partnerships in the U.S.

LESSONS LEARNED

Key lessons can be drawn from the partnership about the power and value of global public/private partnerships, engaging multiple stakeholders, and regional benchmarking.

The Power of Global Public/Private Partnerships: As the global economies recover from the recession of the past few years, workforce supply, quality, skills, and credentials will be key benchmarks for sustainability and growth. Especially given that world economies are intertwined and that the world population on the whole is mobile, business and education need to work together to improve education and economic opportunity. Public/private partnerships help advance economic growth by engaging industry, technical education, business leaders, government leaders, and non-government organizations (NGOs) in helping workforces in emerging economies to develop the skill sets they need to move forward. Although the idea and implementation of public/private partnerships is not new, we believe that what we have

accomplished with Gateway/ESTO help make this type of partnership more replicable around the globe.

The role of technical education is to prepare a workforce that is career-ready. That can happen only if industry is included in the planning phase. Industry holds the key to research and development of new technologies. It is industry's strategic vision, combined with new and emerging technologies, that drives higher education's understanding of the workforce skill sets that will be needed in the future. Industry knowledge and experience show us which technologies are obsolete and should no longer be included in the curriculum, as well as skill sets that are in transition and need to be evolved and developed.

As the private and educational sectors increasingly work together, it has become evident that industry prefers a streamlined and standardized process rather than a customized solution for each educational institution. This standardization allows for industry-developed standards based on equipment, faster deployment of training to the standards, assessment of skills taught and learned, and certification that validates an individual's skill level relative to the standard. One of the strengths of the partnership between Gateway and ESTO was its inclusion of NC3 as a partner. NC3 provides students and educators at institutions like ESTO with access to the same equipment, technology, learning methods, and assessments that are used by more than 200 certification centers in the United States. The NC3 concept of a coalition of certification centers, new to Morocco, proved to be a great resource for ESTO in the project.

Educational institutions rely on private industry to help frame the skill requirements that serve as the basis of developing, reviewing, and upgrading curriculum. Advancing technology requires all partners to be at the table to inform and collaborate on solutions. That is the essence of the strategic vision and model that NC3 provides. Through NC3, educational institutions gain access to private business and industry. Each member brings unique assets to the partnership, such as technology expertise, research and development capabilities, instructional design, teaching methodology, equipment access, standards, policy-making capabilities, and funding.

Because automobile manufacturers and their supply chain vendors are global in nature, the skills required of automotive technicians worldwide have a degree of commonality. A similar effect applies to the whole of the transportation, aviation, energy, and manufacturing sectors. As the

technology in these industries advances, it is important that technicians and other labor classifications are trained to meet the new demands of the market. The rapid pace of new technology in the marketplace make public/private partnerships with colleges and technical education centers a necessity.

As an example, one of the more advanced technologies used in automobiles today is the application of radar, laser, or cameras to sense what is happening outside the vehicle, allowing the driver, or even the vehicle itself, to react in a proactive way to avoid a potential collision. The cost to develop, implement, and sustain relevant technical education programs for this type of quickly evolving technology requires close collaboration between education and industry partners. This is no small challenge. While industry and education have a history of success in partnering to address such issues, such collaborations tend to take place at the local level; relatively few partnerships are national or global. Consequently, we believe that strategic initiatives such as the automotive diagnostic partnership with Morocco need to be scaled and amplified. We further believe that the public/private partnership described here provides a model for doing so.

The Value of Engaging Multiple Stakeholders: This project engaged every level of administration and staff at ESTO and Gateway, as well as business leaders and representatives of local and national governmental agencies in Morocco. One lesson that was drawn from these collaborations was that success hinges on all partners sharing a passion for project objectives. The ESTO team was committed to understanding and following through with the necessary steps to meet the objectives. Initial meetings were held with multiple levels of ESTO staff to review the vision and objectives for the project. Although all groups were supportive, not all were necessarily willing to do the work of bringing the vision to reality. Some simply did not believe the objectives could be achieved and questioned whether support for the project would be forthcoming. These ideas had been presented before but had not previously been acted on, creating some skepticism about the new initiative. That raised some critical questions: Would business leaders actually show up and work with instructional staff? Would businesses provide internships for students? Would ESTO or the Moroccan government actually provide funding to build a new building for automotive technology? Nonetheless, it was evident during initial project meetings that several groups and individuals could see the vision, wanted to be part of

it, and were willing to engage in the effort. Project partners were frank in sharing that while there might be more questions than there were available answers as we moved forward, we were committed to be “solutioneers” in seeing the vision through to fruition.

Administrators from Gateway and ESTO visited each other’s campuses and toured facilities, engaging in dialogue with staff responsible for recruitment, instructional development, facilities management and building maintenance, and partnering with local and regional economic development leaders. The results from the collaboration were no different than if Gateway was visiting another college campus in the U.S. Gateway and ESTO found that their challenges of student recruitment, retention, and placement were quite similar. The challenges inherent in recruiting and developing instructors with requisite 21st century skill sets were also alike. The students that we engaged in conversation and training had the same questions, and identified in similar ways with wanting jobs where they could use “head and hand” skills that would lead to meaningful careers and the possibility and opportunity to be entrepreneurs.

We believe that the people involved and their level of commitment were keys to the success of this partnership. The team from ESTO, which consisted of administrative leadership, faculty, and support staff, demonstrated a high level of communication and commitment. The following elements were contributing factors to our success:

- **Administration:** To implement any new program requires support and commitment from top-level leadership and staff alike. The administration and faculty at ESTO were committed to the long-term vision of having a fully operational, world-class automotive technology program.
- **Instructors:** ESTO and U.S. instructors created new alliances between U.S. community colleges and BMENA region community colleges that will grow and blossom into long-term relationships.
- **Industry:** U.S. partners and representatives of ESTO visited local Moroccan automotive dealerships, many of which articulated a desire to hire students trained in the skills industry needs.

- **Students:** The greatest of all the many successes of the project occurred when students were observed interacting with the automotive equipment and technology in a hands-on environment, an experience that had not been available to them previously.

The Value of Regional Benchmarking: Early in the project it was thought that one of the challenges would be to translate how automobiles are repaired in the U.S. and how U.S. two-year automotive technology programs are administered and measured. Because this was the first program of its kind in Morocco, there were no national benchmarks for ESTO to use. A significant contribution of the project, therefore, was the establishment of new benchmarks in technical education for ESTO and the BMENA region, creating standards for facilities, curriculum, equipment, teaching methodologies, business engagement, advisory councils, internships and more. The U.S. institutions (Gateway and Shoreline) mentored ESTO in understanding career and technical education best practices used in the United States that could be adapted for implementation in Morocco.

We learned that the staff at ESTO had valuable engineering competencies that provided an opportunity to build a bridge to hands-on technical training. Bringing key participants to Gateway (administration, architects, construction managers, economic development leaders, instructional staff, and business leaders) allowed for sharing of the vision and cultural dialogue that was transformative in developing trust and ensured that everyone involved had opportunities to contribute to the project.

RECOMMENDATIONS

The new automotive diagnostic facility at ESTO serves as a benchmark for all of the BMENA region, reflecting local and regional ownership and culture along with global technical education standards and practices that enable global industry leaders to engage and cultivate meaningful and sustainable partnerships for development of the skilled workforce. We believe that Morocco and the BMENA region are primed for scalability of this model. There is potential for more than 500 instructional staff to be trained and begin implementing certifications at the

educational institutions. To that end, we recommend the following factors be considered for a successful public/private partnership model:

At the Core of the Network is the Need for Industry Involvement: Industry “buy in” to initiatives such as this is imperative. It is important to help industry representatives come to share the vision for the initiative at the highest levels, including an understanding that without engagement of staff who can support knowledge of skills requirements and the skill validation process, success will be limited. In Morocco, industry representatives must remain engaged in order for the program to remain relevant to their needs. The engagement can take many forms, including serving on an advisory council to ensure that curriculum, equipment, and facilities remain up-to-date and aligned with industry needs; providing internships and work-based learning opportunities for ESTO students; hiring graduates of ESTO; and providing access to equipment distributors and/or donating equipment or materials for ESTO’s program. Industry must provide input on the learning environment design, required equipment, and ongoing updates.

Educational Institutions Must Collaborate in the Classroom in Ways That Remain Responsive to Market Requirements: Implementing new programs that require hands-on technical training must include teaching methodology, curriculum development processes, and validation by industry. The ongoing engagement with ESTO of other educational institutions will allow for the growth of the network and talent development throughout the BMENA region. As ESTO matures as a regional certification center, it will be able to train staff from other colleges and high schools to offer certifications. Building a BMENA network of colleges will create a regional learning community that includes faculty and students. Peer-to-peer mentoring networks allow for continuous information sharing, such as the community-of-learners model facilitated through the NC3 web portal providing instructors access to peers for information, problem solving, and new ideas. Staff development is at the heart of the certification centers. Through the project, over 25 instructors were trained in diagnostics, torque, and electrical measurement in Morocco and are prepared to certify students in these areas.

From the Onset, the Partnership Approach Should Focus on Implementation: The key to implementation is a trained instructional staff that has a network of resources with which to

engage. In the Gateway/ESTO project, hands-on training was not limited to technical training, but was employed at every stage. Conducting meetings, monitoring action items, engaging with local business leadership, and building relationships were stressed, modeled and employed from the beginning of the project. This depth of engagement will be vital to ongoing work toward the project's goals. A system for input, feedback, and growth must be in place.

Linkages to Economic Growth and Workforce Development Must Inform the

Public/Private Partnership: The national pact for the emerging industry presented in 2010 focused on three fundamental issues: Networks with clear competitive advantages for industrial recovery, the inclusion of industries to allow the strengthening of the competitiveness of SMEs, improving the climate for business, training and the establishment of integrated industrial platforms (P21), and upgrading the institutional organizations ability to enable the effective implementation of programs. We believe there is a potential for 250 certification centers in the BMENA region. (50 each in Morocco and Egypt, 30 in Jordan, an additional 20 in Tunisia, and 100 elsewhere).

Sustainability Must Be Addressed and Monitored: Now that an NC3 Leadership School has been established in Oujda, Morocco, ESTO is now part of the NC3 network. That connection will help sustain the initiative after the grant-funded project concludes. The turnkey NC3 Certification System website, available 24/7 365 days for curriculum download and certification exam administration, will be an essential ongoing tool. Instructors and their students can access the same curriculum materials and certification tests. All curriculum is driven by and developed by industry with college instructors that lead to certifications that are validated through both knowledge and performance assessments. The curriculum is updated regularly with industry input. These processes will continue to support the awarding of certifications that are recognized globally.

CONCLUSION

Through the assistance and support of the NC3 network, ESTO is well positioned now to produce students in Morocco with marketable skills aligned with industry needs. In addition, the experience ESTO has gained through participation in the Gateway/ESTO partnership further prepares the Moroccan university to become a regional training center for schools throughout the BMENA region. As a regional training center ESTO will host train-the-trainer activities for instructors from high schools and colleges who wish to integrate these technologies into their academic programs.

The impact of this program will continue after the grant project has ended. ESTO has demonstrated its commitment and dedication to keep moving forward. To that end, ongoing engagement by key participants will be vital:

Industry: The many colleges that collaborate regularly with industry often find that relationship to be a transactional process in which industry can assist with discounting the price of equipment or might provide funding to assist with a particular initiative. The public/private partnership model takes this relationship to a new level, which requires industry to be engaged and educators to be receptive to new ideas and input from outside their walls. ESTO is thus poised to build productively on its relationships with industry.

University Staff and Faculty: One of the most important outcomes from collaborations such as this is the opportunity for students and staff in institutions of higher learning to grow professionally and gain valuable knowledge. Having developed important global relationships and knowledge, ESTO is poised to continue to develop and share its expertise in providing instruction in the global economy informed by relationships with global industry partners, translating technical information, and translating technical applications within one industry sector across multiple other industries.

Students: ESTO students are excited about their new opportunities in the automotive program. Both young men and women are engaged in learning about diagnostic equipment in the automotive industry and the types of jobs associated with learning this new technology.

We know that these public/private partnerships will continue to grow based on the following insights we learned in this project:

- We will all have better lives if we build and strengthen partnerships with educators in other countries. We can learn much from each other. As industry leaders have conveyed to educators, we need workers with cultural understanding and a global mindset.
- As we learn to integrate our knowledge and skills across the trades, we can create and build systems that will empower individuals, communities, and countries.
- It is critical that we continue to stretch our creativity and innovation in helping students worldwide learn the skills that will help them build strong futures, both for themselves and for their communities.

ⁱ Aziz El Yakoubi. (2013). *Morocco bids to build auto industry for the region*. Reuters (website). Retrieved July 24, 2015 from <http://www.reuters.com/article/2013/04/17/morocco-auto-industry-idUSL5N0D304W20130417>

ⁱⁱ Oxford Business Group. (2012). *The Report: Morocco 2012*. P. 222-4.

ⁱⁱⁱ Jean R. AbiNader, J.R. & Kinnaird, K. (2015). *What is Morocco's Strategy for Developing a Skilled Workforce?* Morocco on the Move (website). Retrieved July 22, 2015 from <http://moroccoonthemove.com/2015/04/30/moroccos-strategy-developing-skilled-workforce-jean-r-abinader-katherine-kinnaird/#sthash.kh9SfrMv.QCPJxIWz.dpuf>



Broader Middle East and North Africa–U.S. Community College Initiative

Institutionalizing Entrepreneurship Education in Jordan

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PARTNERSHIP AT A GLANCE

Many experienced business people, political leaders, economists, and educators believe that fostering a robust entrepreneurial culture will maximize individual and collective economic and social success on a local, national, and global scale. Students in higher education can learn and inculcate the principles of entrepreneurship—training that can help them exercise creative freedoms, build higher self-esteem, and develop an overall greater sense of control over their own lives. With that in mind, Al-Quds College, in Amman, Jordan, collaborated with Eastern Iowa Community Colleges to institutionalize entrepreneurship education.

PARTNERS

Al-Quds College, Amman, Jordan
Eastern Iowa Community Colleges, Davenport, Iowa

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Initial grant: \$119,015 (July 1, 2010 – September 30, 2011)
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Total Institutional Cost-share contribution: \$91,105

INTRODUCTION

“It’s true, there are a lot of reasons not to start your own business. But for the right person, the advantages of business ownership far outweigh the risks.”

(U.S. Small Business Administration, 2014)

Small business development and creation through entrepreneurship is a key driver of economies around the world. Students who are integrated into an entrepreneurial culture through higher education seize opportunities to exercise creative freedoms, build higher self-esteem, and develop an overall greater sense of control over their own lives. As a result, many experienced business people, political leaders, economists, and educators believe that fostering a robust entrepreneurial culture will maximize individual and collective economic and social success on a local, national, and global scale. With this in mind, Al-Quds College (AQC), in Amman, Jordan, collaborated with Eastern Iowa Community Colleges (EICCC), based in Davenport, Iowa, to undertake a project designed to institutionalize entrepreneurship education at AQC. This partnership was supported by approximately \$490,000 in grants from the United States Agency for International Development (USAID) through Higher Education for Development (HED). Both institutions also contributed institutional resources. The project began in July 2010 and concluded in June 2015.

Entrepreneurship education is expanding throughout the world. Not limited to institutions of higher education, this growth has been perpetuated by the recognition that entrepreneurs are found in all fields and across all disciplines. Educators particularly recognize the importance of entrepreneurship education and work avidly to inculcate entrepreneurial skills and knowledge in students. This case study documents an evolution in thinking and methodology in entrepreneurship education at AQC that progressed from an isolated certificate program to institutionalizing entrepreneurship across the college. Our intention here is to describe the process of this evolution and to share key lessons for others thinking about pursuing a similar project.

CONTEXT IN JORDAN: AN ASSESSMENT OF NEEDS

Jordan's economy is among the smallest of the countries in the Middle East. Insufficient supplies of water, oil, and other natural resources underlie the government's heavy reliance on foreign assistance. Other economic challenges include chronic high rates of poverty, unemployment, inflation, and a large budget deficit. The global recession and regional turmoil have depressed Jordan's GDP growth, impacting its export-oriented sectors, construction, and tourism. Jordan's finances have also been strained by a series of natural gas pipeline attacks in Egypt, causing Jordan to substitute more expensive diesel imports to generate electricity. In 2013, Jordan depended heavily on foreign assistance to finance its budget deficit. An influx of about 600,000 Syrian refugees put additional pressure on expenditures.

Collectively, these challenges have put considerable pressure on employment in Jordan. The government's vision to address these issues was outlined in the *National Agenda 2007-2017*. Most of the items found in that plan are dependent on reducing unemployment from 12.5 percent to 6.8 percent, by creating 600,000 new jobs (Royal Hashemite Court, 2015). While the limited resources of the government must be maximized, relief for Jordan's unemployment problem is more likely to come from job creation generated by the private sector.

Youth in Jordan: Jordan is experiencing significant growth in its youth population, coupled with high unemployment. According to the World Bank, the youth unemployment rate in Jordan increased from 30 percent in 1995–1999 to 33 percent in 2010–2014 (The World Bank, 2015). This statistic includes Jordanians aged 15 to 24 who are available for and seeking work but who haven't found a job. There is a tendency among parents to want their children to work in secure governmental jobs. Parents remain risk-averse when it comes to the possibility of their children pursuing alternate career choices and ways of earning a living. If Jordan is to reduce poverty from 14.2 percent to 10 percent, increase GDP per capita by 65.8 percent, and convert the public deficit from 11.8 percent of the GDP to a surplus of 1.8 percent, entrepreneurs and new small business will be the driving factor (Royal Hashemite Court, 2015). A

significant investment in entrepreneurship education will be a critical component in helping the country achieve these ambitious objectives.

College graduates in Jordan are not entering a favorable job market. Many stay unemployed because their pride will not allow them to take a job they feel is beneath their status or the academic degree they have earned. The private sector is not creating enough jobs to absorb the expanding labor force. This has led to high unemployment, especially among young people and women, and a large number of micro firms pursuing small-scale, low productivity activities (The World Bank Group, 2014). If access to more “good” jobs for Jordanians is to become a reality, youth will need to learn how to rely on innovation, creativity, and drive to own, operate, and grow their own small businesses.

Small Business Sector Connection to New Job Growth: In Jordan, as in most countries in the region, young firms and startups create most of the jobs. Young firms account for 40 percent of the net job creation in the country (The World Bank Group, 2014). As President Obama has stated, “Entrepreneurs embody the promise of America: The idea that if you have a good idea and are willing to work hard and see it through, you can succeed in this country,” (Obama, 2011). The leaders of Jordan are in the process of embracing that idea by creating mechanisms for tax reforms and by seeking to achieve both real GDP growth of 7.2 percent over the next ten years and a reduction in Jordan’s debt from 91 percent to 36 percent of the GDP (Royal Hashemite Court, 2015).

Jordanian Government Expectations of Community/Technical Colleges: The Jordanian government expects higher education and vocational training institutions to meet the needs of the labor market, help the Jordanian workforce find employment, and contribute to the ongoing development of Jordan’s human capital through lifelong learning. Since its founding in 1980, Al-Quds College has trained thousands of students in career and technical fields—students who, in general, would be likely candidates for opening a small business and thus contributing to job creation in the country.

If Jordan plans to meet the goals of the national agenda to create jobs, grow GDP, and address unemployment, new businesses will need to open across the country in a variety of sectors. Jordan needs new businesses in engineering, telecommunications, energy, medicine, retail, and service just to name a few. No single sector will be able to provide the jobs required to meet the national agenda goals.

THE PARTNERSHIP

Through a partnership with a community college from the United States, AQC recognized that along with the technical training required for their specific fields, its students needed entrepreneurship training, and implemented a change process to achieve that goal.

Eastern Iowa Community Colleges, which includes Clinton, Muscatine and Scott Community Colleges, has a long history of undertaking capacity development projects throughout the world. From helping establish the first community college in India in the 1980s to work in Ukraine in the 1990s, EICC has been a leader for extending the community college model around the world.

EICC's Muscatine Community College has a distinguished history of business innovation and entrepreneurship. Once the "Pearl Button Capital of the World," Muscatine today headquarters or houses a major presence for Bandag, HNI Corporation, Monsanto, Musco Lighting, and Stanley Consultants, among other corporations and businesses. As Muscatine entered the 21st century, the community was ready for the next generation of entrepreneurs. EICC saw that graduates of career and technical programs can meet much of this need, producing students who are the most likely to develop small businesses in the communities that EICC serves. Accordingly, EICC created a certificate program in entrepreneurship.

Al-Quds College, established in 1980, is the largest community college in Jordan, enrolling approximately 3,000 students. It is the only college in Jordan that offers both a local associate degree program accredited by Al Balqa Applied University and an international diploma taught in English accredited by Edexcel, the largest British accreditation body, which is recognized in 100 countries and at 200 international universities. A private college, AQC is part of the Luminus Education group, a leading provider of consultancy services, vocational degrees, and professional development training for individuals and public and private sector clients in Jordan and the BMENA region. Luminus Education is committed to delivering quality education services that address the mismatch between the skillsets of Arab youth and the needs of the labor market. AQC is committed to the recruitment of faculty members who have industry experience in their field.

The partner's introduction was fostered by Community Colleges for International Development (CCID). For nearly 40 years, CCID has provided a network for colleges to further their internationalization initiatives and to enhance the development of a globally competent workforce for the communities they serve. CCID members also engage in partnerships with institutions worldwide to open opportunities for exchanges and knowledge-sharing among students, faculty, staff, leaders, and trustees.

In 2009, Mustafa Al Adwin, then dean of AQC, attended the CCID annual conference in search of partners interested in internationalizing their campuses. The executive director of CCID, John Halder, introduced Dr. Al Adwin to Dr. Jeremy Pickard from Eastern Iowa Community Colleges and Jeff Armstrong, then EICC's vice chancellor for education. Over coffee, the three men discussed potential opportunities for collaboration, not knowing then that they were forging a partnership that would ultimately have a significant impact on their respective institutions and the students they serve.

Premise and Tenets of the Partnership: The partnership between AQC and EICC was based on a shared interest in integrating entrepreneurship into career and technical programs. The partners identified champions at each location responsible for infusing

entrepreneurship into their colleges. The partners agreed to offer mutually recognized curricula both institutions, which led to common decision-making, facility improvements, curriculum development, and professional development opportunities. The partners met on a regular basis via webinars and phone calls to plan, develop, implement, and evaluate projects.

Through these contacts, the partners recognized that they shared a belief that entrepreneurship enhances all programs and should not be siloed in the business department. As the partners considered options for developing economic opportunities for graduates and community members, they agreed that such opportunities would best come from small business startups within career and technical programs at their respective colleges.

The initial focus was to create a program that helped students learn the business skills they needed to succeed as an entrepreneur. The partners originally designed a three-course certificate program in entrepreneurship that students could complete in tandem with or in addition to their own degree program. It became apparent, however, that this method would reach only ten to twenty students, while switching to a one-course requirement for all graduates would have a bigger impact and truly model integration and institutionalization of entrepreneurship. Shifting their focus, the partners introduced the entrepreneurship course *Build Your Business (BYB)*, described in detail below.

Key Achievements of the Partnership:

In sum, the key achievements of this partnership included the following:

- Developed a mutually recognized credential in entrepreneurship for career and technical students.
- Created an institutional culture of entrepreneurship at Al-Quds College.
- Created an advisory board for the AQC entrepreneurship program.
- Identified mentors for entrepreneurship students.

- Integrated a mandatory course for all students in entrepreneurship called *Build Your Business* (BYB).
- Conducted the Great Teachers Workshop, professional development for faculty.
- Created a monitoring system for faculty professional development
- Created a study-abroad opportunity for Jordanian students to visit small businesses in the United States and attend an International Future Entrepreneurs Exchange (IFEE) program.
- Created a study-abroad opportunity for American students to study Jordanian business, culture, language, and government.
- Replicated the entrepreneurship education model at additional local and regional higher education institutions in Jordan.

These activities have helped effect a cultural shift in which entrepreneurship has essentially been woven into the DNA at AQC. Project activities were designed to be sustainable after grant funding ended. Especially because AQC has developed a capacity to conduct professional development workshops, established study-abroad programs and an advisory board, and required a mandatory entrepreneurship course for all future graduates, the program activities listed above will continue.

INSTITUTIONALIZING ENTREPRENEURSHIP AT AQC

The process of institutionalizing entrepreneurship at AQC involved a series of interrelated steps.

Innovation Within a Rigid Curricular Structure: Entrepreneurial higher education institutions are designed intentionally to empower staff and students to demonstrate enterprise, innovation, and creativity in research, teaching, and the pursuit and use of knowledge across boundaries (Gibb, 2013). If entrepreneurial thinking and practice is going to thrive at a college, a culture of innovation must be embedded into courses, programs, departments, and the institution as a whole.

Traditional structures, systems, and practices in higher education tend to impede rather than foment a culture of innovation. For example, the processes of registering for classes, earning credits, and adhering to course objectives and outcomes can often constitute barriers to innovation. Educators interested in helping a student progress from merely understanding business concepts to generating his or her own business must balance the restrictions of the traditional university structure with the need to infuse innovation into educational programs.

At the same time, however, the rigid structure of higher education offers some tangible benefits to budding entrepreneurs. It provides an environment that forces future entrepreneurs to meet deadlines, produce business plans, and create financial projections, and provides a venue where business plans can be presented to peers and critiqued. Further, higher education systems support student entrepreneurs by providing access to faculty members, business incubator managers, and mentoring programs.

The Process: The first step in the process of institutionalizing entrepreneurship curriculum was to identify champions at each partner institution who were experts in the field and who had the passion and willingness to be involved in a project of this nature. After several phone conferences and planning, the two teams met in Jordan in January of 2011. Toward a goal of developing a mutually recognized credential in entrepreneurship, meeting participants drew on a variety of models, resources, and curricula. At the end of the three-day work session, the partners had determined that a three-course approach would best address student needs and help prepare them to be successful in launching a business. The focus throughout the three courses would be the development of a solid business plan so that students would leave the training with a working strategy to launch their own businesses.

While developing the courses was challenging, getting them to fit into the different systems of education was the real test. Following the meeting in Jordan, each team took home the proposed courses and curriculum outline and began the hard work of getting them recognized by accreditation bodies in their respective countries. (The importance of an internal champion for a project such as this cannot be overemphasized.

Exacerbating this challenge, AQC went through a number of partnership directors. In the first 18 months of the project four project directors were assigned and then left the organization. The project was in real jeopardy until Dr. Sameer Barhoumeh was assigned to direct the project from AQC.)

As the courses were being developed and gaining approval from appropriate accreditation bodies, the partners began to identify entrepreneurship professional development opportunities for faculty. Teaching a course about entrepreneurship is very different from leading students through the process of creating a business plan. Faculty members attended workshops, participated in peer mentoring, and collaborated on methods of instruction. AQC began offering the Great Teachers Workshop (GTW), a training program developed by EICC in the 1990s and held annually in Iowa. GTW, which has also been offered in three different countries, seeks to provide faculty members with principles of effective teaching and strategies for resolving teaching challenges, managing the classroom effectively, and developing more effective lesson plans. The GTW training was coupled with the concept of integrating entrepreneurship into the classroom.

The GTW was offered for three days during the summers of 2013, 2014, and 2015. Of the 120 faculty members at AQC, 89 have participated in the workshop. The CEO of AQC said that this was the best professional development the organization had conducted in five years. The workshop rejuvenated faculty and also enabled faculty and departments that had never collaborated to find common ground. This synergy contributed to the success of offering courses in entrepreneurship to all students across disciplines. Faculty were not forced to work with someone they didn't know but rather were given an opportunity to collaborate with a friend they had made at GTW.

Obtaining membership for AQC in the National Association of Community College Entrepreneurship (NACCE) was another key to changing the institution's culture. NACCE works to empower its members to approach the business of leading a community college with an entrepreneurial mindset, and to grow the community

college's role in supporting job creation and entrepreneurs in their local ecosystem, exactly what the partners had in mind.

The next step was to gain broad buy-in among faculty, staff, and students for the principle that a culture of entrepreneurship within higher education should not be segmented or restricted to one department or group of courses, but rather should be infused throughout the curriculum and across disciplines. The work of building a culture that encourages autonomy, risk-taking, and innovation began with training some 55 AQC faculty members in small-business development, operations, and growth. Participants began to understand the economic and societal impacts a shift to an entrepreneurial culture could have on their students, communities, and country.

Once final approvals were granted for the new certificate program, each institution piloted classes with cohorts of 7-10 students. Evaluations of these pilots helped inform enhancements to content, curriculum, and delivery. After completing the third course in the new program, students were awarded a certificate in entrepreneurship.

The partners realized, though, that the certificate program would reach only a handful of students and thus would not realize the depth of impact that both colleges desired. The project needed to be scaled up. This goal was met through a shift in delivery method to the *Build Your Business* course, which had been developed by Microsoft and the International Youth Foundation. This single course offered outcomes identical to those of the three courses the partners developed for the certificate program. Reducing this content to a single course meant that more students were inclined to take it and that faculty from a variety of department could teach it.

BUILD YOUR BUSINESS COURSE AS A FOUNDATION FOR THE PROJECT

The *Build Your Business* course was selected because it targets young people between the ages of 16 and 35, offering 30 hours of instruction that includes games, exercises, and videos focused on the “how to” of running a business. Offered in English, French, and Arabic, BYB is currently used by over 300 organizations in 20 countries to empower the next generation of entrepreneurs.

Accessible on- and off-line, the BYB course employs a blended- learning approach in which skills are introduced by computer and reinforced with indispensable in-person instruction by a BYB-certified facilitator. Program instructors are linked via a robust, online entrepreneurship network. Instruction is coupled with hands-on assignments conducted in local communities. Youth who complete the digital curriculum receive a certificate of achievement. The course is taught in 14 modules, which fits well with AQC’s 16-week semester. During the 2015 academic school year, 850 AQC students took the BYB course.

The International Youth Foundation (IYF), which provides trainers with valuable insights into the implementation of youth development programs based on its nearly 25 years of experience, was willing to provide training at AQC for faculty who were planning to teach the course.

The BYB course and learning management platform was also attractive because there were no upfront costs. IYF was looking to gain access to the Jordanian higher education market and approached AQC as a strategic partner. IYF was willing to wave all fees associated with the course and initial training.

Al-Quds College began the BYB experience by first conducting entrepreneurial training for some 30 faculty members. The minimum qualifications for faculty members who wanted to become BYB trainers were that they have business industry experience as well as embrace a teaching methodology that is 80 percent practical and 20 percent

theoretical. Most faculty in Jordan still use a theoretical/lecture approach in the classroom which is not conducive to entrepreneurship training. The BYB software and learning management system assisted faculty in making the transition to practical classroom activities. Embracing problem-based learning, case-based learning, inquiry-based learning, and collaborative learning took time, but was ultimately successful. Many faculty members who took the training have now applied this new pedagogical approach to other courses that they teach.

Upon the successful completion of the pilot BYB course, the partners determined that all students would need the course for graduation. The Jordanian Ministry of Higher Education was approached to determine how to make this a mandatory course. After several meetings it was determined that the BYB entrepreneurship course would be added as an enrichment course required for graduation. Because courses required for a degree in specific departments were not modified, this solution required approval only within AQC and not by the Ministry. However, it took two years to obtain the necessary approvals from AQC's faculty, deans, CEO, and board.

International Future Entrepreneur Exchange (IFEE): Another component in the process was creating an exchange program for students from the AQC's entrepreneurship program. Students were selected by a competitive application based on their completion of both BYB and a business plan, and on their participation in AQC's recently established business incubator. (The incubator at AQC was developed through another HED/USAID project, a partnership between AQC and Washtenaw Community College in Michigan. A dedicated space headed by an experienced manager, the business incubator at AQC provides entrepreneur students with additional training, skills, mentoring, support, and experience to help them develop, launch, and grow their own businesses.) Targeted primarily to students in AQC's career and technical education major who were completing the entrepreneurship program, IFEE was open to all students who met the criteria.

Through three annual exchanges, the IFEE program enabled 21 students and two faculty members from AQC to visit the U.S. and participate in leadership training and

professional development activities, including meeting business owners. Participants in the exchange received a full scholarship, including round-trip flight, tuition, basic language training, a living stipend, health and accident insurance, and program-related travel costs. They were given ten days of study at EICC, including a course team-taught by faculty members from Jordan and the U.S.

Most of the students said the highlight of the exchange was the chance to shadow local entrepreneurs on the job. Those entrepreneurs shared real-life experiences and expertise, adding depth and richness to the course. IFEE participants also met with the SCORE organization of Muscatine, Iowa, a nonprofit association dedicated to educating entrepreneurs and nurturing small businesses. SCORE is a resource partner with the U.S. Small Business Administration.

For many students the opportunity to visit and study in the U.S. through IFEE would not have been possible without grant funding. Many more students were interested in the exchange than could be accommodated. Regardless of whether they were able to go on the exchange or not, this potential opportunity served as an effective motivator, driving students to be rigorous in their studies, complete a business plan, and participate in the business incubator.

LESSONS LEARNED: ENGAGING MULTIPLE STAKEHOLDERS

As the team institutionalized entrepreneurship at AQC, planning how all stakeholders could be integrated into the process took substantial focus and time. Stakeholders included students, parents, business community members, advisory board members, faculty members, administrators, and the AQC board of trustees. All internal and external stakeholders were strategically identified and involved as entrepreneurship was institutionalized. One challenging component was how to build momentum with all groups simultaneously. Neglecting a stakeholder could potentially derail the plan. At the

same time, each stakeholder group required strategies tailored to their particular interests and needs.

Faculty Members: Faculty members are the heart and soul of higher education institutions. They can generate excitement or kill the most well-conceived plan. It was therefore critical that we be able to engage this audience as champions for our project, and ensure their involvement throughout the process in developing, integrating, and enhancing an entrepreneurial culture throughout the institution.

Before someone can teach a concept, they have to fully understand it themselves. To encourage faculty to embrace the idea of integrating an entrepreneurial culture, therefore, we needed to commit significant resources to professional development. We targeted mid-career and senior faculty who had entrepreneurial interests, focusing not on specific disciplines but on individuals with leadership skills required of an entrepreneur. Al-Quds College provided these opportunities in a variety of ways. The “Great Teachers Workshop,” for example, addressed the successes and challenges of classroom teaching. Multiple faculty from multiple disciplines were trained to teach the content of the *Build Your Business* course.

Concepts of entrepreneurship are similar across disciplines, but there are unique ways each department can benefit from entrepreneurship training. We therefore took pains to ensure that faculty members, department coordinators, and deans had the opportunity to morph entrepreneurship into their disciplines as they saw fit. Allowing faculty the freedom to be creative in how entrepreneurship objectives are achieved helped engender more buy-in as entrepreneurship was institutionalized.

Students: In Jordan, students do not commonly have an entrepreneurial mindset. Their culture is typically risk averse and students typically seek to secure a stable job with the government upon graduation. One key strategy with student stakeholders, therefore, was to bring local entrepreneurs to the college as guest speakers. That enabled students to hear entrepreneurs’ stories, struggles, and successes first-hand, helping to open their eyes to entrepreneurship as a potential career path.

AQC also created a significant number of opportunities to recognize outstanding entrepreneurial students. This recognition gave the students confidence and clout amongst their peers. As mentioned above, some students were able to join the IFEE study-abroad program to the United States to study small businesses. This was the highest recognition for students and was key in institutionalizing entrepreneurship. The “buzz” this opportunity generated around the concept of entrepreneurship was a game changer. Mindsets began to shift from being satisfied with landing a government job to having the ability, passion, and knowledge to create entrepreneurial opportunities.

It takes a significant amount of programming to fully engage students in entrepreneurship. That engagement cannot be limited to the classroom. Multiple touch-points, such as classroom projects, guest speakers, campus events, an entrepreneurship day, clubs, incubators, and quick-pitch competitions, are all important collectively to help engage students in their journey to becoming an entrepreneur.

Parents: Due to the aforementioned cultural norms, many parents in Jordan struggle with the idea of their children becoming entrepreneurs. As an example, an AQC student reported that his father was giving him one week to get a real job and quit chasing the idea of opening his own business. In a culture where parents expect to be involved in their children’s choices and must be respected, many students face similar tensions. We recognized that ways to bring parents into the process of integrating entrepreneurship had to be developed. We found that inviting parents to recognition events and to listen to guest speakers helped the process. Providing forums for parents to ask questions was also critical. Evidence that such strategies can be effective can be seen in the example of the father mentioned above, who changed his mind about entrepreneurship after watching his son receive recognition for winning a business-pitch competition.

Administrators: In higher education institutions in the Middle East, decisions are made from the top down. This is true for mid-level administrators through the highest position in the organization. Gaining support from department chairs, deans, provosts, vice presidents, presidents, and chancellors or their equivalent is therefore critical.

Indeed, obtaining support of senior administrators is not only recommended, but is required for programs to move forward.

Having multiple touch-points for administrators is just as critical as having multiple touch points for students. Constant communication with upper-level administration is a key to success. We engaged administrators also in the advisory board and in introducing guest speakers and student pitch competitions. We held regular meetings with the CEO and AQC's board of trustees. At these meetings we focused discussions on the intrinsic value of entrepreneurship programming and the value it added to the college. We also talked about the value of attending international conferences, such as those presented by Community Colleges for International Development, and of developing partnerships through such networks. We were also intentional about sharing success stories from professional development for faculty and training for students.

Non-Governmental, Governmental, and Private Organizations: Establishing partnerships with organizations is critical to successfully institutionalizing entrepreneurship. Many organizations have access to financing for small-business startups. Many organizations also have funding for programming, curriculum development, faculty professional development, and equipment. Some organizations sponsor competitions through which students can have their business plans vetted and their business pitches critiqued. Student success in such competitions is a channel for broader recognition of an institution's efforts. For these reasons, we believe it is well worth the effort to establish partnerships and MOUs with different kinds of organizations that can help advance an institution's work.

Micro-Financing Institutions: Partnering with micro-financing institutions is an area where this partnership needs to grow. AQC has strong connections with Jordanian micro-financing companies that will help students with their business startups. Solidifying these relationships is a critical next step in the maturation of institutionalizing entrepreneurship education at the college.

BEST PRACTICES

During the course of the work to integrate entrepreneurship at Al-Quds College, we identified a number of best practices that could help inform similar projects at other institutions.

Integration of U.S. Approaches to Entrepreneurship Education Within Jordanian

Context: Educators in the United States are farther along than their counterparts in Jordan in designing and developing entrepreneurship curricula for higher education. Adapting what works in one culture to another culture is often challenging, but it can be done. Utilizing the best practices of other higher education organizations is essential. Without a healthy exchange of ideas and collaboration between partner colleges, for example, AQC's capacity development in this area would have lagged. In particular, partners in the project were able to draw on EICC's extensive experience in creating an entrepreneurial culture, and to learn from its network of contacts with entrepreneurial expertise.

Giving faculty the time, resources, and opportunities to try new pedagogical approaches is also vital. Exposing faculty to a variety of pedagogical approaches helped advance culture change at AQC. Often a faculty member teaches the way they were taught or using the techniques that are the most comfortable. The integration of U.S. approaches to entrepreneurship education within the Jordanian context, including curriculum design, classroom delivery modules, assessment tools, and case studies, helped integrate entrepreneurship throughout the curriculum at AQC. This is not to say that the U.S. model had all the answers or is perfect, but in this case it provided a means for representatives of the Jordanian higher education systems to see how pedagogical approaches for entrepreneurship work and—importantly—to modify and integrate them in ways appropriate to the Jordanian higher education culture. Integrating changes in ways appropriate to the Jordanian culture made the approaches significantly stronger than if they had merely just been copied from the U.S.

Utilization of Successful Role Models: Because students must be able to see themselves as entrepreneurs before they become entrepreneurs, utilizing role models from the business community is an essential component of building a culture of entrepreneurship within an institution of higher education. AQC found, for example, that alumni who had started their own businesses and were from smaller startups were more effective as role models than speakers from large corporations. Eventually, of course, new graduates of the program will become role models themselves. By sharing their failures and successes, alumni role models help students learn first-hand what it takes to become an entrepreneur, from individuals they can relate to well.

Faculty can also be role models for students. During the course of this project we learned that a number of faculty members at Al-Quds College were operating their own small businesses. Their personal experiences yielded invaluable lessons for students.

Al-Quds College also established an advisory board to help shape and guide the direction of the program. Advisory board members were also utilized as mentors for students who were entering the business incubator. Involving community members in this way provides another pool of role models for students.

Promotion and Recognition of the Program: People want to be a part of something that is exciting. Al-Quds College created a “buzz” for the entrepreneurship education program by creating the IFEE program and by inviting guest entrepreneurs to campus to share their experiences. The program and its students were featured in several television and newspaper articles and received a visit from Queen Rania of Jordan. Ongoing promotion through multiple channels created considerable momentum for the program. Administrators saw the value, students wanted the courses, and faculty wanted to be part of the opportunity. This in turn made it easier to recruit local entrepreneurs to speak at the college.

Now well-known and highly regarded, the entrepreneurship education program at Al-Quds College is touted as a model for universities throughout the country. Through the Jordan Competitiveness Project (JCP; <http://www.jcp-jordan.org/en>), Al-Quds College

has ventured into a new project, titled “Entrepreneurship Curricula Development at Five Jordanian Universities.” Launched in November 2013 with funding from USAID, JCP is a five-year effort aimed at addressing the challenges that Jordan faces in creating high-quality jobs through increased private sector competitiveness. The project encourages collaboration between the public and private sectors to promote policy reforms, build capacity, improve coordination, and attract foreign investment. Drawing on the expertise AQC developed through its projects with community colleges from Iowa and Michigan, the JCP will work to replicate AQC’s model of institutionalizing entrepreneurship in the university setting.

Highlight Student Success: One of our students, Qusai Damrah, was nominated for the Fekrati Award, offered by the micro-financing group Tamweelcom and Silatech, an entrepreneurship organization, and won top prize for his ideas for a waste management system. The Fekrati Award targets all Jordanian youth between the ages of 18-35 years old who have innovative ideas for start-ups or standing projects. This type of recognition is invaluable for helping to promote students and their success as well as the success of their programs.

Value Recognition by College Board and Accrediting Body: The College Board and accreditation body of Al-Quds College decided to make the *Build Your Business* course mandatory for all students in all majors, which gave instant credibility to the project. Seeking this recognition from oversight committees further institutionalized the idea of entrepreneurship as a value-added to the educational model and strategic plan at AQC.

RECOMMENDATIONS FOR INSTITUTIONALIZATION OF ENTREPRENEURSHIP

In the course of our work to institutionalize entrepreneurship education at Al-Quds College, we developed several specific recommendations that would be helpful to other institutions that seek to pursue a similar goal.

Hire a Champion with Authority to Lead: Change initiatives at higher education institutions benefit from champions who push to ensure initiatives are implemented and strategic plans are realized. Such champions should be selected from within the organization, and empowered with the authority to implement the desired change. Without the authority to make key decisions, hire personnel, provide training, and provide input to marketing, the project will likely flounder.

Finding such a champion was a particular challenge for the entrepreneurship program, which had several different project managers in its early stages. This was a significant barrier to the design, launch, and growth of the project. Once the right champion was identified and given the authority to lead the initiative, significant advancements were made towards institutionalizing entrepreneurship.

Include Faculty in the Development and Implementation Plan: The champion that is hired to integrate entrepreneurship throughout the organization must have a strong rapport with faculty. Between the courses they teach and their participation in various committees and service activities, faculty tend to have more than enough to keep them busy in any given semester. Adding one more piece is often challenging. Regardless, in a project such as the effort to institutionalize entrepreneurship, finding meaningful ways to enable faculty members to contribute to the process and have direct input in its implementation is essential for the program's acceptance. In this case, faculty development training, workshops, and certificates related to entrepreneurship benefitted faculty, including providing additional job security, and therefore helped create faculty buy-in for the project.

Ensure the Relevance of Integrating Entrepreneurship to Forwarding the Mission of the College: Community colleges have always been known for attempting to “be all things to all people,” but taking on too broad a mission can challenge an institution's effectiveness. “Mission creep” is therefore a reality that must be addressed.

Understanding how a goal of integrating entrepreneurship fits with and helps advance the broader mission of an institution is therefore an integral part of the process.

Demonstrating the relevance of integrating entrepreneurship to stakeholders begins by linking it to the mission of the organization. It is important to show that you are not recommending a change in the institutional mission per se, but rather a change that will help advance the organization's mission—that can be an important distinction. In our case, given that AQC's mission is Education for Employment (or "e4e,) integrating entrepreneurship was not a stretch. Indeed, adding entrepreneurship to the college gave faculty members, staff, and students new ways of envisioning how they could fulfill the institution's mission by showing how entrepreneurship could play a critical role in their country, culture, college, and personal lives.

Ensure the Fiscal Viability of Integrating Entrepreneurship into the College: No matter how relevant a program is, if it is not self-sufficient and able to generate enough revenue to at least break even, it is unlikely that the administration will invest in such a venture. Al-Quds College was able to make its integrated entrepreneurship program a financially viable part of the college.

Initially, three courses were required for the certificate program, with a minimal number of students involved in the courses. That approach did not generate the resources required to continue offering the program. Rather than continuing to enroll a relatively small number of students in single entrepreneurship courses, the partners made a strategic move to get the college to require all students in all programs to take one entrepreneurship course. This made the program financially viable, enabling AQC to generate a business model with a profit margin based on tuition revenues to support faculty members' salaries, international project expenses, and indirect expenses.

Develop and Utilize a Comprehensive Advisory Board: In the United States it is often required that career and technical programs have an advisory board to help them develop course offerings, clarify required competencies for graduates, identify future trends, and help students find internship and employment opportunities. The concept of developing and utilizing such an advisory board was new to Al-Quds College. Creating an advisory board for the entrepreneurship program provided a channel for students and the college as a whole to engage productively with local business leaders. These

leaders contributed ideas and information, mentored students, and served as guest speakers at events and in classes. This brought credibility to the entrepreneurship program that was not in evidence in other initiatives on campus. Strategically selecting a diverse group for an advisory board should be one of the early objectives of this process.

Create a Project-Based Learning Environment: Entrepreneurship is not something that can be learned through a lecture or by reading a book. The theory of entrepreneurship can help a student, but the greatest learning comes through hands-on project-based experiences. For these reasons, the curriculum, incubator, assignments, and evaluations at AQC were intentionally rooted in hands-on, project-based learning.

Use a Comprehensive Approach: For the institutionalization of entrepreneurship program to be successful within a higher education organization, a comprehensive approach must be planned. This approach must take into consideration students, faculty members, administrators, business leaders, parents, board members, and other key stakeholders. The focus cannot be on one group alone, but rather must factor in many interests from multiple stakeholders.

CONCLUSION: CHANGING THE INDIVIDUAL, THE INSTITUTION, AND THE COUNTRY

Al-Quds College engaged in this project in order to change perceptions and practices about entrepreneurship in Jordan, where most graduating students typically seek careers in private or public sector without thinking of any other alternatives such as creating a startup. Leaving paid employment to strike out on one's own requires a different mindset. To that end, we created an entrepreneurial ecosystem with the goal of helping students see their potential as entrepreneurs and, ultimately, becoming self-employed.

As a general outcome, we have changed mindsets within AQC, including in its human resources and hiring system. For example, the selection criteria for faculty members

now includes that they should come from an industrial background, with experience running a business considered an advantage. This helps faculty members teach practical lessons based on real-world experiences.

Other changes to AQC have been the introduction of the BYB and quick-pitch competition, both suggestions from the project's advisory board. AQC has also added a business incubator, the International Future Exchange Entrepreneurs study-abroad program, and the GTW professional development workshop. All of these components have given AQC competitive advantages in Jordan. The tuition revenues generated by the BYB courses have helped to make the entrepreneurship program financially viable and sustainable. All of these successes have enabled AQC to expand its marketing and recruitment efforts to attract new students.

In light of its success in institutionalizing entrepreneurship, AQC has become a model for higher education in Jordan. AQC was the first college to offer the BYB course and, through its collaboration with Washtenaw Community College, was the first community college in Jordan to establish a business incubator. Such advances have transformed thinking at other Jordanian universities, some of which are now interested in replicating AQC's model. Indeed, the Ministry of Education in Jordan is now using the model developed at AQC in its efforts to see that all higher education institutions in the country provide an environment of innovation through entrepreneurship for all students.

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Broader Middle East and North Africa–U.S. Community College Initiative

Integration to Incubation: A Partnership for Youth Entrepreneurship in Jordan

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PARTNERSHIP AT A GLANCE

To help young people in Jordan learn how to create their own jobs and not simply wait for jobs in the general marketplace that may never materialize, Al-Quds College in Amman, Jordan, partnered with Washtenaw Community College in Ann Arbor, Michigan, to create a clear pathway to entrepreneurship for students in community college. Taking an approach that combined engagement, education, and entrepreneurial experience, the project first focused on building awareness and sparking student interest in entrepreneurship, progressed to the integration of entrepreneurship across disciplines through curricular and co-curricular activities, and culminated in the start of Jordan's first community college student business incubator.

PARTNERS

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Al-Quds College, Amman, Jordan

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INTRODUCTION

The nation of Jordan is experiencing a swelling in its youth population. More than 50 percent of its current population is under the age of 25. Officially, unemployment continues to hover at about 12 percent, but unofficial estimates place the rate closer to 30 percent (CIA, 2014). For Jordanians aged 15 to 25 who are actively seeking work, the unemployment rate is estimated to be 22 percent (World Bank, 2013). With Jordan's educational system producing 50,000 university graduates annually, the need for employment for potential jobseekers far outpaces the availability of jobs (Abuqudairi, 2012). Jobs are scarce, and ideal jobs are even more scarce. In recent years, this discouraging employment outlook has been further exacerbated by the influx of refugees from neighboring war-torn countries. These challenging economic conditions have had a negative social impact, including delays in marriage, social unrest, and even suicide on the part of Jordanian youth (Abuqudairi, 2012).

One strategy for addressing this overwhelming problem is entrepreneurship: Teaching young people to create their own jobs, not simply wait for jobs that may never materialize. Al-Quds College in Amman, Jordan, in partnership with Washtenaw Community College in Ann Arbor, Michigan, took on this challenge with a subaward from the Higher Education for Development BMENA-U.S. Community College Entrepreneurship Program funded through USAID. From 2011 through 2014, the two partner colleges collaborated to create a clear pathway to entrepreneurship for students in community college. To build a roadmap to entrepreneurship, the partnership took a "3-E approach" that included engagement, education, and entrepreneurial experience. The pathway began by building awareness and sparking student interest in entrepreneurship, progressed to the integration of entrepreneurship across disciplines through curricular and co-curricular activities, and culminated in the start of Jordan's first community college student business incubator.

A caveat: There is a paucity of research on community college student incubators and youth incubators. We hope the practices we developed and the lessons learned in the partnership will contribute to the body of knowledge about community college student incubators, particularly in a Middle East context, and assist other community colleges in their plans to start an incubator.

THE PARTNERSHIP

Washtenaw Community College (WCC) is a community college located in Ann Arbor, Michigan. Founded in 1965, WCC welcomes more than 13,000 students from over 100 countries each year and grants more than 1,400 certificates and degrees annually.

Al-Quds College (AQC), Jordan's leading private community college, was founded in 1980. It offers two-year vocational diploma programs in six areas. Its goal is to provide students with a world-class education based on a career-oriented curriculum developed in tandem with the *Jordan 2020* work plan, the country's national employment strategy. All of AQC's programs are accredited by the Jordanian Ministry of Higher Education through Al Balqa Applied University. To date, more than 25,000 students have graduated from Al-Quds.

Through their four-year partnership, WCC and AQC collaborated on many implementation activities to support an ecosystem for a student business incubator. Starting with professional development activities, faculty from both institutions participated in international exchanges jointly developed entrepreneurial classroom content through tool kit activities, and conducted peer-to-peer mentoring. AQC instructors attended trainings that included entrepreneur boot camps. The partners developed a student pathway that included exposing students to entrepreneurship in academic classes, a success-story speaker series, a student entrepreneurship club, quick-pitch competitions, student entrepreneurial boot camps, a business model competition, and a campus-wide entrepreneurship festival. These activities culminated in the establishment of Jordan's first community college student incubator.

THE STUDENT BUSINESS INCUBATOR

We elected to model a student business incubator for several reasons.

First, research has shown a positive relationship between entrepreneurship and entrepreneurial experience (Jang, 2013). If Jordanian youth are given an opportunity to gain experience as entrepreneurs in the protective, nurturing environment of an incubator, it may well increase

the probability that they will become successful entrepreneurs. Incubation not only offers youth the opportunity for immediate earnings through self-employment, but also increases the likelihood that they will become entrepreneurs in the future, even if they do not start a business immediately.

Second, if youth are to develop into entrepreneurs, they need assistance. A review of entrepreneurial organizations and services in Amman revealed that few agencies support youth entrepreneurs. The exceptions, the several organizations that promote youth entrepreneurship, do not provide incubation. Further, existing incubators previously were not available, affordable, or a good fit to the needs of students in community college.

Project outcomes: Three significant outcomes emerged from the partnership. First, capacity building within Al-Quds provided entrepreneurship training for faculty and staff, who in turn created an environment within the college that helped foster an entrepreneurial mindset, develop entrepreneurial skills and knowledge, and provide entrepreneurship experience for students. Second, the partnership created Jordan's first community college business incubator. Third, the partnership produced evidence that youth can indeed become entrepreneurs.

Incubator start-up process: The AQC/WCC team relied heavily on training and materials from the National Business Incubator Association to start the process toward building an incubator at AQC. To open its first incubator, the partnership took five major steps:

Step 1: Assess the environment: An internal assessment required AQC to determine its institutional capacity and readiness through surveys and interviews with faculty and students. An external assessment required AQC to map the local entrepreneurial ecosystem; identify stakeholders, including economic development agencies, government ministries, service providers, and leaders in the entrepreneurial community; identify gaps and unmet needs within the ecosystem to define the target population for incubation; and begin relationship-building within the ecosystem.

Internally, AQC found that capacity-building was necessary among faculty and students before incubation could be supported at the college. In its review of the local

entrepreneurial ecosystem, Al-Quds identified a significant gap in entrepreneurial services for youth, and particularly for community college students, who are generally accorded less respect and credibility in the community than university graduates and are underserved.

Step 2: Profile the target population: AQC found it beneficial to identify and profile a target population for incubation and to develop a profile for the incubator on which it could base key decisions. The profile included a business model for the incubator, a definition of the type of incubator that was planned, an outline of the client services the incubator would provide, the physical environment for the incubator, marketing strategies, and building a pipeline of clients for the incubator. Al-Quds targeted community college students for incubation, which influenced all subsequent decisions about the incubator.

Step 3: Hire an incubator manager: Based on previous experience, AQC thought it critical to hire an incubator manager early in the process, well before the actual start-up of the incubator. The search for a manager was challenging, as experienced talent is difficult to find in a region where incubation is a relatively recent phenomenon.

Step 4: Plan operations: Once the incubator manager was in place, planning resulted in policies, procedures, and decisions for the operation of the incubator, including the composition of the incubator's advisory board, the scope of services and service providers, the client selection process, and information systems for progress tracking and relationship management.

Step 5: Start-up: The incubator manager planned and publicized the opening event, implemented the process for selection of incubator tenants, developed individualized plans for services, provided services, made use of available service providers in the ecosystem, tracked progress, and documented and publicized successes.

COMMON SUCCESS FACTORS IN INCUBATION AND THE AQC EXPERIENCE

The literature on success factors and best practices in incubation suggests a number of practices that are useful in the establishment of an incubator. It is important to note, however, that nearly all studies focus on nonprofit and for-profit community business incubators and university incubators, primarily technology incubators. Few studies examine community college incubators, and even fewer addressed community college student business incubators or incubation practices for youth.

Success Factors in Incubation Management: In the interest of condensing success factors for incubation and focusing on those directly applicable to community colleges, we will discuss three categories: incubation management, incubation services, and incubator physical resources.

Incubator management: Of all the success factors examined, the quality of the incubator manager was the strongest determining factor in the successful start-up of the Al-Quds incubator. The critical role of the incubator manager aligns with both recent and historical research studies on incubation (Smilor, 1987; Lewis, Harper-Anderson & Molnar, 2011; Wolfe, Adkins & Sherman, 2000). The Al-Quds experience also supports research that indicates that hours spent by the incubator manager in providing services to incubator clients correlates strongly with their success (Lewis, Harper-Anderson & Molnar, 2011). Community college student entrepreneurs require extensive time from the incubator manager in delivery of services such as advising, business planning, and training. Al-Quds found that the incubator manager role is best fulfilled as a full-time position, with approximately 80 percent of time devoted to two significant tasks: client services and networking.

The AQC experience identified four key characteristics of the incubator manager that contributed most significantly to an incubator's successful start-up: commitment, connections, a systematic approach to operations, and relatability.

1. **Commitment:** AQC found that the incubator manager must believe in and be committed to incubation and entrepreneurship for youth. As such, he or she must have business or entrepreneurial experience and the time and knowledge needed to provide business expertise, provide access to external expertise, plan programming and events, and connect with the entrepreneurial community. In AQC's experience this role requires a full-time commitment.
2. **Connections:** AQC found that the manager must be strongly connected within the entrepreneurial ecosystem, and be able to network effectively, connect incubator clients with external assistance, and showcase the incubator and its clients to the larger business community.
3. **Systematic approach to operations:** The manager must also demonstrate the organizational ability to create systems for the selection, nurturing, and evaluation of incubator clients, plan events, develop policies and procedures for operations, and define measures of progress. This requires the ability to establish and implement systems for ongoing data collection and evaluation.
4. **Relatability:** Throughout all of these activities, the manager must demonstrate the ability to relate effectively with the target population. In the case of a youthful community college student population, the manager must understand the needs of young aspiring entrepreneurs, their lack of experience and self-efficacy, and the challenges and conflicts they face as student entrepreneurs. The manager must be able to connect with youth and talk with them in ways they are willing to listen to and can understand.

Advisory board: A recent study by the U.S. Department of Commerce identified an advisory board with diverse business expertise as a critical success factor for incubators (Lewis, Harper-Anderson & Molnar, 2011). The AQC experience showed that students who engaged with the incubator and its events benefitted from an advisory board that was both highly visible and diverse, not only in expertise but also in gender. The board of the AQC incubator maintained a high profile as role models for students at events and also served as judges for the college quick-pitch competition.

Policies and selection procedures for entry and exit from the incubator: A selection process for entry into an incubator was identified as a critical success factor in incubation nearly three decades ago, and recent research supports this view (Smilor, 1987; Mian, 1994; Lewis, Harper-Anderson & Molnar, 2011). AQC enacted this best practice through a four-step process to select the best candidates for the student incubator:

1. All AQC students were required to take an entrepreneurship course (this course, *Build Your Business*, developed by Microsoft and the International Youth Foundation, was developed and institutionalized as an AQC graduation requirement through another U.S. community college partnership with AQC).
2. Students who completed the course were eligible to compete in the college's quick-pitch competition.
3. Top scorers in the quick-pitch competition were permitted to attend the entrepreneurship boot camp.
4. Students who completed the boot camp were eligible to enter the incubator if they obtained faculty recommendations and passed an admission interview with the incubator manager. Not surprisingly, AQC student participation in optional entrepreneurship events, workshops, and training sessions showed a positive relationship with entrance into the incubator.

Enforcement of exit policies is also correlated to incubator success (Lewis, Harper-Anderson & Molnar, 2011). Exit criteria are often based on reaching performance milestones or reaching an incubation time limit, or both. AQC enacted and enforced an incubator time-limit of one college term. This strategy has allowed more students to gain the incubator experience before they leave the college, but also appears to have a deleterious impact on actual immediate business start-up. New ventures started by inexperienced youth require more than a single semester to incubate successfully, unless a time-intensive approach, such as "lean startup," is used.

Networking: Integrating within the entrepreneurial network has also been identified as a management best practice in several incubation research studies (Smilor 1987; Lee & Osteryoung, 2004; Lewis, Harper-Anderson & Molnar, 2011). Al-Quds found that relationship-building within the entrepreneurial ecosystem must be a priority for the incubator far in advance of its opening. AQC began this process two years in advance by mapping out and meeting with members of the local entrepreneurial ecosystem, including existing incubators, economic development organizations, government ministries, entrepreneurship clubs and organizations, financiers, successful entrepreneurs, and members of the local business community. Information on all of these contacts was stored and regularly updated in a spreadsheet as a resource to draw upon for strategic partnerships to benefit incubator clients, for example, inviting them to conduct or participate in trainings and workshops, or to be mentors, speakers, advisory board members. AQC found that this network of relationships needed to be widely cast and frequently refreshed so that relationships could continue to be perceived as mutually satisfying and not exploitive, as can happen when the same contacts are repeatedly overused.

Relationship building at Al-Quds resulted in high-profile entrepreneurs speaking to students in a speaker series, workshops and training provided by members of the business community, agreements enabling AQC student incubator graduates to move up into larger community incubators, and student participation in competitions (one AQC student won a national award and received funding from a micro-lender). This networking contributed to the awareness and credibility of the incubator as a serious member of the entrepreneurial community and helped the incubator manager promote the incubator and its successes through face-to-face contact and publicity.

Perceptions of success: The perception of success has long been identified as a success factor for incubation (Smilor, 1987). In a similar vein, showcasing incubator clients has been found to impact incubation success (Lewis, Harper-Anderson & Molnar, 2011). In the case of a community college, however, the perception of success takes on a dual meaning. It is not only that the larger entrepreneurial community must perceive the incubator as a success, but also

that students themselves must perceive that they have the skills and resources to succeed as entrepreneurs.

Success breeds success. The community college student incubator is more likely to achieve positive results if the larger business community views it as successful and supports it.

Therefore, a community college that plans to create an incubator and entrepreneurial support services must build credibility within the entrepreneurial ecosystem. At AQC this recognition was accomplished through the aforementioned networking by the incubator manager in the business community and through well-publicized events. Events that were covered by radio and television stations and in newspapers included high-profile entrepreneurs in the motivational speaker series, members of the business community judging the quick-pitch competitions, high-ranking government leaders in attendance at the grand opening of the incubator, royal visits to the incubator, and the Entrepreneurship Festival, which showcased student business plans. The media also covered an Al-Quds student who won the Fekrati Award (*fekrati* means “my idea” in Arabic), a Jordanian entrepreneurial competition.

At the student-entrepreneur level, perceptions of success mean that students can feel confident they have the skills and resources to succeed. Al-Quds found that the incubator manager and mentors play a significant role in this regard. Community college students often lack the self-efficacy needed to become successful entrepreneurs (Ozgen & Minsky, 2013). Youth need to be provided with milestones for performance and then held accountable. They need to be given positive role models and mentors, and they need a high level of intervention. To this end, Al-Quds' incubator manager established performance contracts for incubator clients, held frequent meetings to assess progress and plan next steps, and worked with faculty mentors and external community mentors to build self-efficacy in student entrepreneurs.

The topic of perceptions of success as it pertains to Jordanian youth entrepreneurship is one that would benefit from further study. In a culture in which youth are often still financially dependent and the norm is to comply with parental expectations, it is likely that youth are vulnerable to the perceptions of the parents. In other words, if their parents do not believe in their ability to succeed as entrepreneurs, youths will not believe they can succeed, reducing the likelihood that they will start a business venture.

Incubator Services as Factors of Success: Several studies on incubation point to services provided to incubator clients and the provision of one-stop business expertise as critical components of incubator success (Smilor, 1987; Lewis, Harper-Anderson & Molnar, 2011). Al-Quds found that the incubator must provide the usual incubator services and more to meet the needs of youth. Services provided by Al-Quds included evaluation of business ideas, business plan development, personalized and group business counseling, business training workshops, a motivational speaker series, boot camps, quick-pitch competitions, preparation for national business plan competitions, mentoring, placements to gain needed industry experience, and showcasing of student entrepreneurs through an entrepreneurship festival.

Al-Quds was able to provide one-stop business expertise to incubator clients on most issues through one-on-one or group sessions with the incubator manager. For specialized expertise, the manager brought community experts to the campus through workshops or presentations. Student entrepreneurs clearly benefitted from the one-stop shop approach to services, as they often lacked the contacts and resources to access service providers on their own.

Finding mentors who could spare the time for student entrepreneurs was challenging. To bridge this gap, AQC brought experts to campus to train faculty on how to mentor their students. This serves as an example of how community colleges can leverage faculty as a resource to provide occasional incubator services such as mentoring or a workshop. Al-Quds found that for this to occur, however, it was first necessary to break a code of silence about faculty entrepreneurship. Through interviews, the college learned that approximately 25 percent of its faculty had been or currently were practicing entrepreneurs, but were afraid to discuss the entrepreneurial practices role for fear of losing their teaching positions. Al-Quds addressed this concern by changing their hiring requirements to require faculty to have occupational or entrepreneurial experience in their respective fields, by making it safe to discuss entrepreneurship, and by asking faculty to serve as mentors for student entrepreneurs. As a cautionary note, however, the sole use of faculty or students to provide services to incubator clients is both impractical and insufficient to deliver high-quality entrepreneurial services in a timely manner.

Access to funding as a service was achieved by inviting lenders, particularly microfinance companies, to campus to speak to students. Access to funding remains the most difficult service to provide to youth entrepreneurs, as the lending community continues to be resistant to youth business ventures. The greatest success to date was achieved by the student who won the Fekrati Award and received a 1,000 JD (\$1,410) prize and a 10,000 JD (\$14,100) interest-free loan.

Incubator Physical Resources as Factors of Success: Also tied to incubator success are the working space and general services offered (Lewis, Harper-Anderson & Molnar, 2011). General services include office space and furnishings, shared office equipment, meeting space, and high-speed internet access. An environment that promotes internal networking is also a necessary physical resource for incubator clients.

Al-Quds discovered through trial and error that the physical incubator space for youth must pulse with energy and convey a message that the incubator is a place where innovative ideas flourish and real businesses start. To become a place where students network, partner, and share ideas, the design of the space should be “cool” and appeal to youth with color, comfortable seating, and whiteboards for capturing ideas. As well as the standard office requirements of desks, conference table, copier, conferencing equipment, and high-speed internet access, youth also require tangible signs that reinforce the message that their businesses are taken seriously. Prominent displays of the names of student businesses, their owners’ names, mission statements, and business cards all help to convey the message.

Beyond the Literature, Additional Success Factors at AQC: In the AQC experience, two additional factors contributed heavily to the successful start-up of the student business incubator: organizational capacity-building and creating a pipeline of potential incubator clients.

Based on a review of much of the literature, it might be possible to believe that starting an incubator is merely a process of securing office space, hiring experienced individuals, establishing policies and procedures, and opening for business. In the AQC experience, two realities impeded such an easy start-up. First, the incubation industry is still relatively young in Jordan, so effort was needed both to communicate the concept of incubation and to develop

talent experienced with incubation. Second, the community college culture is focused on academics and workforce preparation, not entrepreneurship, so a mindset change had to occur in both faculty and students before an incubator could be supported and woven into the fabric of the institution. (AQC was also working on an HED project with Eastern Iowa Community College (EICC) to institutionalize entrepreneurship curriculum; that effort provided additional groundwork in building capacity in entrepreneurship at AQC.)

BUILDING CAPACITY: LAYING A STRONG FOUNDATION FOR ENTREPRENEURSHIP AND INCUBATION

The AQC experience found five essential steps were needed to build a capacity for entrepreneurship at the college:

- 1. *Making entrepreneurship an institutional priority:*** College-wide priorities require support from the highest level in the college. AQC was fortunate in that the CEO is strongly committed to entrepreneurship. The CEO took two major steps to inform the college community that entrepreneurship and incubation were priorities at AQC, first by committing budgetary resources to provide space and personnel for the incubator and second by establishing a requirement that all entering students must complete an entrepreneurship course, regardless of major. (That requirement was prompted through AQC's project with EICC, referenced above.)
- 2. *Committing to time:*** It takes time to change a mindset from occupational to entrepreneurial. At AQC it took nearly two years of communication, meetings, and training to develop a core of supportive faculty.
- 3. *Training and professional development:*** Professional development in entrepreneurship was provided for faculty and staff through four workshops, two boot camps, training on how to mentor, tool-kit training, exchange visits, and visits to incubators in both Jordan and the U.S.
- 4. *Connecting with the external business/entrepreneurial community:*** The urgency and legitimacy of an effort such as Al-Quds' entrepreneurship project were given

credibility when external members of the community reinforced the message. Also, external connections provided workshops and training to increase the entrepreneurial knowledge of both faculty and students.

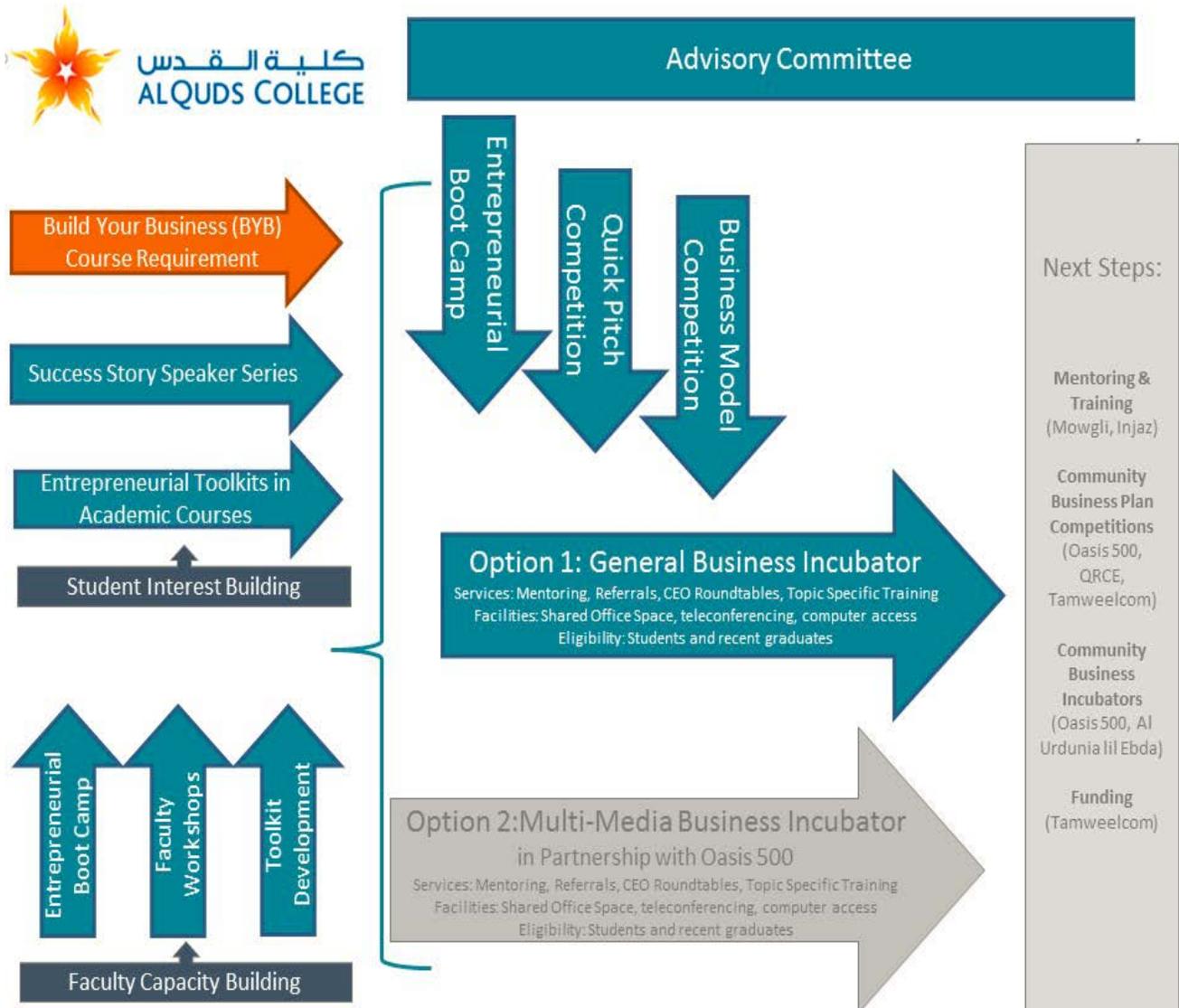
- 5. *Integrating with academics:*** Reaching out to faculty in occupational disciplines beyond the business department to create tool kits of classroom activities, experiential exercises, and assignments that integrated entrepreneurial thinking into their classrooms—without adding courses to their curricula—proved an effective method to engage faculty and students in entrepreneurship across disciplines, keep entrepreneurship in front of students, and build a core of entrepreneurship champions at the college.

BUILDING A PIPELINE FOR A STUDENT INCUBATOR

Through student surveys, AQC found that Jordanian youth did not initially view entrepreneurship as a career option, which meant that work had to be done to build a pipeline of student entrepreneurs. As framed in the graphic below, AQC built a sequential pathway for students to reach the incubator. That work included these three critical stages:

- 1. *Engagement:*** AQC first generated awareness and enthusiasm in students through a motivational speaker series, showcase events, and an entrepreneurship club;
- 2. *Education:*** AQC built entrepreneurial skills and knowledge first through the mandatory entrepreneurship course for all students, taught by faculty from multiple disciplines and developed through the EICC-AQC partnership. Faculty then reinforced entrepreneurial thinking across disciplines through the application of entrepreneurial tool kit activities in classrooms. For students who placed in the quick-pitch competition, intensive immersion into business planning took place in entrepreneurship boot camp.

3. Entrepreneurial experience: Experience in entrepreneurship was provided through the quick-pitch competition for students, and culminated in student business incubation and the provision of entrepreneurial services.



FACTORS UNIQUE TO COMMUNITY COLLEGES THAT CREATE CHALLENGES FOR INCUBATION

The AQC experience in starting a student business incubator encountered four significant challenges described below. Each of these challenges carries implications for the community college approach to incubation.

Community Colleges are Occupationally-focused Teaching Institutions: The faculty and student mindset at an occupationally-focused community college is typically workforce preparation, not business venture creation. However, precisely because community colleges have an occupational focus, many faculty have industry or entrepreneurial experience, which can be leveraged to help build a pipeline for an incubator through classroom experiences or help provide services such as mentoring or workshops.

Because community colleges are teaching- rather than research-focused, the entrepreneurial activities of students are less likely to result in breakthrough innovations or technologies. Instead, a high probability exists that students will develop micro-enterprises that are derivative or “copycat” businesses, including lifestyle or service businesses, adaptations of existing products, services or technologies, or extensions of family businesses. At Al-Quds, nearly all of the student business proposals fell into the categories of service and lifestyle businesses; fewer than 10 percent of pitches were for technology-based business ideas.

The nature of the community college requires that these potential obstacles be addressed for business incubation to be a success. Among other lessons learned, the following implications applied to AQC’s experiences:

1. Faculty engagement and inclusion, professional development for faculty, and curricular changes for students are all needed to develop an entrepreneurial mindset, not simply an employment perspective within degree programs.
2. The hidden entrepreneurial culture among occupational faculty needs to be uncovered, celebrated, and utilized. Faculty spend the most time with students and have the most

direct impact on how or whether they think about entrepreneurship within their field of study. Silence does not foster entrepreneurship.

3. The types of student start-up businesses will impact both the type of incubator developed and the funding model for the incubator. Lifestyle and copycat micro-enterprises generally do not provide strong funding models for an incubator to be self-supporting. The incubator will likely be a mixed-use incubator or focused on a specific sector, such as the arts or creative services. The funding model is unlikely to take an equity stake in the enterprises. AQC chose to fund the incubator as a student service, fully funded by the college operations after start-up.

Youth as Entrepreneurs and Incubator Clients: The very fact that the target population for incubation is youth creates its own set of challenges for successful incubation within the community college. Youth need to be attracted and exposed to entrepreneurship as a career option; at the start of the partnership, only 14.9 percent of students surveyed viewed entrepreneurship as an option.

Young student entrepreneurs tend to lack self-efficacy and need a high level of structure and assistance to start a business. In addition, they often lack extensive work and industry experience, which leaves them at a disadvantage in developing a sound business plan.

Youth also tend not to be taken seriously as entrepreneurs, not only by the business community and potential funders, but also by the influencers in their lives, notably their parents. Jordanian youth also face parental pressure toward employment and away from entrepreneurship and are often pushed toward the most overcrowded employment fields or the government sector, where they are unlikely to find employment.

As a result of these factors, several key implications come to the fore:

- I. Curricular and co-curricular activities are needed to develop an entrepreneurial mindset, attract students to entrepreneurship as a career option, and build self-efficacy in entrepreneurship. As part of activities to attract students, the incubator and entrepreneurship must be “cool” and often in students’ line of vision. After just three

years of AQC implemented events, a speaker series, and the required entrepreneurship course, the percentage of students who considered entrepreneurship an option rose to 31.4 percent.

2. The lack of self-efficacy in youth requires that the incubator manager practice a high level of intervention and create processes, contracts, deadlines, meetings, and schedules to keep young students on track toward their business goals. It also implies that the incubator manager must proactively develop relationships with external organizations that will help students move on to mentorships, funding, internships, competitions, or advancement to a community incubator. As a result, incubation services for youth may differ from traditional models of incubation. Community colleges must recognize the need for hybrid models of incubation, which may include services such as job placement for students to gain necessary experience in the appropriate industry while earning wages and saving capital for the start-up venture.
3. To overcome parental resistance to student entrepreneurship, a college must find ways to engage and educate parents about entrepreneurship. AQC made attempts to engage parents through invitations to events, but was largely unsuccessful at engaging parents or changing the parental mindset. More work needs to be done in this area.

Abbreviated Time to Complete: Community colleges have shorter degree programs than universities, giving faculty and the incubator less time to reach goals toward entrepreneurship. Business venture creation is not easy for students who are taking courses full-time, a challenge that is exacerbated if the curriculum does not reinforce skills needed for entrepreneurship.

The abbreviated time to complete carries some implications for the academic integration of entrepreneurship within the curriculum and also for incubator exit policies, including the following:

- I. Multiple strategies should be applied to achieve a high level of integration of entrepreneurial mindset and skills throughout curricula and to achieve frequent reinforcement of entrepreneurial thinking and skill-sets in students. Some of the techniques found useful in the AQC/WCC partnership included discipline-relevant entrepreneurial activities integrated into courses in the major (known at AQC as tool

kits); the use of entrepreneurial vocabulary in non-business courses; frequent informal mentoring by faculty; the sharing of success stories; building of self-efficacy in all courses through skill-building and accountability; planned reinforcement of entrepreneurial thinking and skills throughout beginning and advanced courses in the curriculum; and the universal requirement that students take the entrepreneurship course.

2. The abbreviated time-span to complete a degree at a community college also carries implications for exit policies. A single semester or term is simply not enough time to incubate a youth start-up. Contracts with students should contain specific, individualized milestones, and students should be allowed to remain in the incubator as long as key milestones are being met. If a short incubation period must be enforced, then students should be given an affiliate status to be allowed to continue to use the services of the incubator, even though they may not be granted continued office space.

Students from Less-Advantaged Backgrounds: Community colleges often serve students from less-advantaged backgrounds. These students face stronger pressures to enter employment and delay entrepreneurial ambitions, face greater financial barriers to business start-up, and have fewer connections to assist them. They may face added social barriers, particularly female students. Implications in this regard include the following:

1. Despite entrepreneurial support and incubation, community college student incubators are likely to see stop-outs in students' progress toward actual business start-up. Students may delay serious start-up activity until after examinations and graduation, due to conflicting time demands and parental expectations. They may need to work in order to amass needed capital for a business start-up. For those reasons, it is important to track, maintain contact with, and offer continued incubation services to alumni. When working with youth entrepreneurs it is also important to recognize that further education, training, or employment may be a necessary intermediate stage in a student's path toward entrepreneurship, particularly if a student's earnings must contribute to a family's well-being or survival.
2. Incubator managers and mentors must be able to assist students with creative options to pursue entrepreneurship, such as business models that will work for female students,

online opportunities, how to start a business on a small scale or part-time basis, and other ways to overcome barriers.

3. Because less-advantaged students are not as likely to have a strong network of useful connections as their more advantaged peers, the incubator manager must help the student build relationships within the business community by actively connecting students with competitions, funders, and mentors.

INSTITUTIONAL LESSONS LEARNED

Through the course of the project, the partnership drew several lessons learned.

Preparing for Incubation:

1. Youth generally are not predisposed to take an elective course in entrepreneurship, because they perceive no use or value for it when it is not a requirement in their course of study. At AQC the shift toward a more entrepreneurial mindset would not have been achieved so broadly or quickly without the required entrepreneurship course, tool kits, and co-curricular events to build awareness.
2. Greater skill-building continues to be needed to help students recognize opportunities and define the value proposition of a potential business. Similarly, students need better guidance to improve the viability of their business proposals, reduce the number of copycat businesses, and increase the number of innovative businesses that find their start in student incubators.
3. Creative business models that make female engagement in entrepreneurship more acceptable, such as e-business or female-to-female sales models, coupled with strong female role models and mentors, are needed to increase female participation in actual business start-up in Jordan.
4. Reinforcement of an entrepreneurial mindset through tool kit activities across disciplines keeps entrepreneurship concepts in front of students after they have

completed their basic entrepreneurship course and are immersed in their major coursework.

5. A project, experience, or course that requires students to start a business has strong potential to increase self-efficacy and provide entrepreneurial experience that correlates with future business start-ups (Jang, 2013). At Al-Quds, an engineering faculty member who also teaches the required entrepreneurship course introduced a tool kit activity in value creation. She challenged her students to go out and create value for profit, given an extremely low spending limit for resources (three Jordanian dinars), and then report their spending and profits. She reported that the students were excited and actively engaged by the assignment, and that one student even made a profit with no expenditures for resources. Even such small steps into entrepreneurship have real potential for giving students an actual hands-on entrepreneurial experience, the realization that they can make money from their own ideas, and a boost to their confidence as future entrepreneurs.
6. After two abortive attempts, an idea to engage student interest via an entrepreneurship club was abandoned as a poor cultural fit in a commuter college, but revealed that social media (in this case Facebook) can be a highly effective tool for engaging youth and should be utilized more heavily.

Incubation:

1. The physical space of the incubator needs to be attractive and highly visible to community college youth: an energizing “cool” place where ideas and innovation happen coupled with tangible signs that student businesses are taken seriously.
2. Exit criteria need to be evaluated for impact on incubation and actual start-up. AQC found that one semester is not long enough to incubate, unless an intensive approach like “lean startup” is used or affiliate status is granted to alumni.
3. Youth need a high level of structure, intervention, and assistance from the incubator manager to stay on track to success.
4. Incubator services must be geared to youth, resulting in a hybrid model of incubation: Mentoring, connections to the business community, internships or job placements,

specific training, preparation for competitions and pitches, and access to funding may all be needed in addition to usual entrepreneurial services. Nonetheless, the quality of services provided to student incubator clients should be equal to those in community or university incubators. It is neither fair nor realistic to provide services solely through faculty or through student projects or student volunteers.

5. Given the community college student population, a student incubator is unlikely to be self-supporting. As such, it should be viewed as a student service and funded internally like all other student services at the college, or funded through donations and grants.
6. The incubator manager position is a full-time job. Extensive time is required to provide individualized services to incubator clients, to build and maintain necessary external relationships, and to plan and evaluate. This role cannot be accomplished effectively by assigning duties to faculty or administrators on a part-time or piecemeal basis.

Sustainability Beyond the Initial Partnership:

1. The business model of the community college student incubator depends on top-level administrative support. To ensure sustainability was not dependent on equity shares in microenterprises or rental revenues, AQC intentionally chose to fund incubator operations as a student service from the inception. Partnership funds were allocated to the start-up of the incubator (such as furnishing the physical space), some outreach activities, and WCC/AQC oversight in the incubator's development.
2. Employee turnover can and does happen, both in teaching faculty and in incubator management. To ensure that entrepreneurial thinking continues to be reinforced across disciplines, a video was developed as a training tool to tell the story of tool-kit development and demonstrate its use. To ensure continuity of operations in the case of turnover of incubator staff, systematic processes and information technology for tracking must be put into place and codified through operations manuals. Policies and procedures for selection and evaluation, schedules for activities and events, milestones for progress, and external contacts can be lost when turnover occurs, unless the information has been captured in an operations manual.

3. Relationships and ideas continue after the grant is complete. Faculty-to-faculty relationships built across the two countries and two partner institutions have spawned further ideas for collaboration through future cross-cultural classroom experiences in entrepreneurship. Project funds were used for faculty exchanges to both countries, which solidified these relationships.
4. Projects can have greater impacts than could be imagined at the start. The experience gained and lessons learned from the start-up of the student incubator have led AQC to look strategically at its strengths and capacity, with the result that it plans to open the region's first multimedia business incubator for the larger entrepreneurial community.

RECOMMENDATIONS

The Al-Quds experience suggests several broad recommendations for addressing challenges of youth entrepreneurship and incubation at the national or regional level.

1. A major marketing campaign is needed at the national or regional level to convince youth that entrepreneurship is “cool,” rewarding, and possible. The marketing campaign should be themed based on actual success stories and should incorporate social media to reach youth.
2. A major marketing campaign is needed with the primary influencers of youth, particularly parents, to reduce their resistance to entrepreneurship as an option for their children.
3. More entrepreneurship competitions are needed at the national or regional level, with financial awards for the winners.
4. More options for funding youth ventures are needed. Funding sources for youth businesses remain scarce. Government intervention, incentives, or sponsored funds may be needed to address this gap.
5. A national or regional association of incubators is needed in Jordan to create a culturally-sensitive support network, best practices, and advocacy, and to solicit funding for more competitions and awards.

6. CONCLUSION

Al-Quds students who reported having already started a business rose from 2.0 percent to 7.9 percent over the course of three years. Community college youth can successfully start businesses, given a pathway to follow and assistance along the way. Youth require a clear pathway to entrepreneurship, beginning with engagement, followed by education, and culminating in real, hands-on experience of entrepreneurship. The community college student incubator provides community college youth with a protective, nurturing environment to start their entrepreneurial ventures and gain entrepreneurial experience with reduced risk. However, an incubator alone is insufficient to prepare youth for entrepreneurship. The incubator can be a vital part, but only part, of a more comprehensive program to develop entrepreneurship (Sherman, 1999).

Entrepreneurship education and experience can open new opportunities for youth who otherwise face a bleak employment outlook. For community colleges considering the development of an incubator, care must be taken to ensure that youth are not trading one bleak future for another. Micro-enterprises and self-employment constitute the most vulnerable forms of entrepreneurship. Therefore, educators and incubator management must work closely, intently, and even intrusively with young entrepreneurs to ensure they develop viable value propositions, differentiate their products or services, produce sound business models, and understand what it takes to bootstrap a start-up venture with little capital.

Success in a community college student incubator is difficult to define and cannot be measured by standard success measures alone, such as number of jobs created, level of funding received, or revenues generated. Even the most basic measures, the number of start-ups and their survival rates, may be distorted by stop-outs. Success measures must take into account time delays to venture creation. Self-employment, extensions of existing family businesses, and new venture creation all need to be incorporated into success measures. (In its first year of operation, for example, the AQC incubator produced three nascent micro-enterprises.)

Expectations for entrepreneurship and incubation programs targeted at youth must be tempered with realism. It would require years of longitudinal research to assess the true impact

of these programs due to delays in venture creation. In the interim, while it is unrealistic to expect that these programs will solve the complex issue of youth unemployment in Jordan, it is worth remembering that a community college graduate who is self-employed or managing his or her own micro-enterprise is contributing more to the economic well-being of a nation than one who is unemployed.

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Broader Middle East and North Africa–U.S. Community College Initiative

Building Collegiate Entrepreneurship and Collaborative Strategies in Morocco

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PARTNERSHIP AT A GLANCE

With an initial planning grant and a second scale-up grant, a community college in Wisconsin partnered with Ecole Supérieure de Technologie d'Oujda in Morocco to build individual and institutional capacity and cultural competencies in entrepreneurship in Morocco.

PARTNERS

Gateway Technical College, Kenosha, Wisconsin
École Supérieure de Technologie, Oujda, Morocco

USAID SUBAWARD SUPPORT UNDER LWA AEG-00-05-00007-00

Proposal Grant: \$52,589 (February 1, 2011 – July 31, 2011)
Scale-up Grant: \$461,575 (March 1, 2012 – September 30, 2014)
Total Institutional Cost-share contribution: \$287,226

INTRODUCTION

During a speech in Egypt in 2009, President Barack Obama highlighted the importance of entrepreneurship in fostering economic opportunity and community development. Speaking in Qatar in 2010, then-Secretary of State Hillary Clinton emphasized the importance of creating partnerships to promote development and opportunity for young people within the Broader Middle East and North Africa (BMENA) region. Given the trends toward high unemployment among youth, increasing poverty, and lack of jobs for skilled workers across BMENA, there is a need to expand job opportunities across the region to ensure regional prosperity and stability. With programs and centers that collaborate successfully with business and industry, community and technical colleges in the United States offer value as potential partners for similar institutions in the BMENA region that are interested in focusing on workforce and entrepreneurship development.

In 2011, Gateway Technical College (Kenosha, Wisconsin) and L'Ecole Supérieure de Technologie d'Oujda (ESTO; Oujda, Morocco) received a six-month planning grant of \$52,589 from USAID, through HED, to explore the current state of entrepreneurialism at ESTO. In six months of planning, the team was able to link personnel to the program objectives in a logical and sustainable manner to build entrepreneurial capacity at an individual and institutional level for the school. In 2012, Gateway received an additional grant of \$461,575 to fund the proposal and expand the initiative. Under the title “Collegiate Entrepreneurship and Collaborative Strategies,” or CECS, the project was expanded to pursue several related goals—increased knowledge and skills in entrepreneurial development, increased capacity to provide quality technical assistance to entrepreneurs and small business owners, increased experiential learning opportunities for students, and value-added linkages to regional businesses and manufacturers—in alignment with national education and workforce development goals in Morocco.

Based on the institutional assessment of its capacity, project goals were framed in the context of three key learning objectives:

1. L'Ecole Supérieure de Technologie faculty have improved ability to teach students and advise local citizens in critical components of entrepreneurial and enterprise development.
2. Strengthen the capacity of students to launch and operate their own business and/or measurably enhance existing small and medium sized enterprises (SMEs) by creating internships and other experiential learning opportunities.
3. Develop and deploy technological innovations that improve instruction and integrate technology and classroom practice to meet the needs of the productive sectors in society.

Our focus in this case study is on how the second learning objective was achieved through an innovative program replication of Gateway's *Biz Squad* course, and how the partners were able to engage the private sector in Morocco to support the project.

Biz Squad is a multi-disciplinary, semester-long course in which students work collectively on problem-centric learning with local businesses. Students work in cross-functional teams—"Biz Squads"—and come from various educational tracks in accounting, business management, graphic design, information technology, marketing, and supervisory management. The teams work with local businesses on a consultant basis to complete projects that have been reviewed and are selected by students and instructors. Each team is unique in the manner in which problem-centric learning is applied during the course of the student consultations with businesses. One of the most outstanding features of this program is its flexibility and how each class unfolds in its own way.

Because perspectives on entrepreneurship in Morocco differ from those in the United States, it was not feasible to simply replicate the Gateway program at ESTO. Social differences, in part based on gender expectations, highlighted the complexity of working

across cultures with different social and cultural norms. This case study explores those challenges, including the need for a fluid approach in developing a *Biz Squad*-style program in Morocco, our focus on the entrepreneurial skill development, and the realities of how process differed from theory to application.

PARTNERSHIP PARTICIPANTS, CONTEXT, AND GOALS

The Collegiate Entrepreneurship and Collaborative Strategies initiative engaged two central partners:

- **Gateway Technical College** serves three counties in southeastern Wisconsin. Gateway offers more than 65 technical programs locally and leads many national initiatives for continuing technical education in the United States. Because Gateway was already engaged in a project at ESTO focused on automotive diagnostics, the opportunity to build on that relationship for a project focused on developing entrepreneurship capacity was viewed as a natural progression.
- **Ecole Supérieure de Technologie Oudja (ESTO)**: ESTO provides a training and research environment that provides quality higher education and offers attractive multidisciplinary training related to regional and national priorities in Morocco. Rigorous and of high quality, the diversified educational programs and courses offered at ESTO are based on current and projected needs of the county's labor market.

The CECS program was developed under the leadership of Gateway President Dr. Bryan Albrecht and Dr. Naima Benazzi, then director of ESTO, and concluded by Dr. Yassine Zarhloule, current director of ESTO. The project was initially led by Dr. Therese Fellner, and concluded successfully under the direction of Robin Hoke, director of business development for business and workforce solutions at Gateway. The program was developed and executed in partnership with Eiger Labs; the National Business Incubation Association, represented by Tracy Kitts; the Wisconsin Business Incubation

Association, represented by Thalia Mendez; and Cheryl Ucakar, an instructor and program chair at Gateway.

Context in Morocco: Background about the current state of entrepreneurship in Morocco provides important context for the CECS program. Morocco began education and training reform in 1999 and recommitted to this reform in 2008, investing 26 percent of its national budget in education.ⁱ This was especially important since youth (ages 15-29) make up 30 percent of Morocco's population.ⁱⁱ One of the strategic shifts in these reforms was to adopt a competency-based approach to education and training, a move that was expected to align educational programs more closely with the needs of employers.ⁱⁱⁱ

These efforts have not reached complete fruition, however, for several reasons. While most unemployed youth in Morocco have little to no secondary education, policy interventions focused primarily on tertiary education, and thus affected less than 5 percent of the total national population. A majority of young women in Morocco are still reluctant or unable to enter the workforce due to societal norms and family attitudes.^{iv} Graduates of Morocco's schools tend not to be equipped to apply their newly acquired knowledge in a professional setting.^v Overall, Moroccan youth have been excluded from the economic growth of the entire nation; a 2007 Gallup poll showed that 41 percent of Morocco's youth were neither in school nor employed.^{vi} While these factors present more than their fair share of challenges and obstacles, they can also create opportunities.

Goals of the CECS Project: The CECS partnership offered significant potential for positive impact on students, faculty, additional higher educational institutions, and Moroccan society overall. Specifically, the project was guided by four key goals:

- increased knowledge and skills in entrepreneurial development
- increased capacity to provide quality technical assistance to entrepreneurs and small-business owners
- increased experiential learning opportunities for students

- value-added linkages to regional businesses and manufacturers

All of these goals were seen as contributing significantly to national development goals in Morocco. In that regard, CECS project objectives aligned with goals and priorities of the Moroccan government that were reflected in the reform document “National Charter for Education and Training” (1999), which emphasized job promotion, education, and training as central tenets of the government’s economic and social development strategy.

Opportunities for Women: With the number of women in Morocco being trained in technical and vocational education steadily rising, female students at ESTO and regional institutions were particularly targeted to benefit from the partnership.

In Morocco, as in many nations in North Africa and the Middle East, an increasingly large number of women are prepared for and wish to enter into the workforce. Yet, demand for women in the labor market is still very low.^{vii} While Morocco had seen an increase in the number of women who were employed due to manufacturing expansion that took place in the mid-1980s, those gains were unsustainable when market forces changed in the early 2000s. This trend led to more women in Morocco becoming entrepreneurs as a means of earning income.^{viii}

Focused on entrepreneurialism, the CECS project was targeted to help both genders. At ESTO, however, there are more female students than male, and consequently the demographics in the “Biz Squad” course that was modeled at ESTO followed suit. Young women in the program thus had an opportunity to work with entrepreneurs on an international basis. In addition, many of the students had the opportunity to participate in entrepreneurial training offered through this project under the umbrella of its first learning objective, which was to develop individual and institutional entrepreneurial capacity.

Connections to Industry: Besides touching the lives of young women in an entirely new entrepreneurial manner, the project contributed to aligning education at ESTO with industry's needs and interests.

In Morocco, as in many places globally, siloes exist between education and industry and the interests of two entities are not always in sync. While a progressive monarchy in Morocco has worked diligently to increase the advancement of a job-driven economy through partnerships between business and education, there is still a gap in alignment. In Oujda, for example, local businesses tend not to look to universities as resources for economic growth. The CECS project's "Biz Squad" approach provided a meaningful alternative to the status quo by directly linking local economic growth with students in tertiary education.

The "Biz Squad" model is predicated on serving businesses by providing a service, solving a problem, or cultivating an opportunity. Instructors at ESTO followed the model that Gateway uses to find businesses to serve by contacting their personal and professional networks to make them aware of services being offered through the *Biz Squad* course. The businesses were selected based on the scope of the work they required. The call for proposals included an outline of potential business needs (e.g., website or database development, or development of a marketing plan) and expected outcomes. A panel of instructors and students reviewed possible projects, determining which were achievable in the given time frame of a semester based on the composition of the class and specific student skill sets. Students and instructors then worked with business owners in a consultative manner to evaluate their problem or need, and then outline potential solutions, timelines, and resources required. Students engaged with the businesses throughout the course.

One local entrepreneur was so engaged with the program that he attended all the trainings the project offered. He even attended the American Language Institute where he focused on developing fluency for conversing with American partners. It was an extraordinary metamorphosis to watch this individual develop an idea for a business into a profitable entity. He continued to serve as a public cheerleader for the "Biz Squad"

model, advocating businesses to use this opportunity to develop students and grow the economy.

THE “BIZ SQUAD” MODEL AND THE CECS REPLICATION

As designed at Gateway, the “Biz Squad” model serves the business community by actively seeking consultative work from current, new, and emerging businesses. The goal for students is to provide them an opportunity to apply a problem-centric approach in a team context by consulting with a business. Businesses identify problems or issues that they wish students to address. Requests from businesses for consultancies go through a formal process of application. The relationship between the student team and the business is a formal contractual relationship: The business is the client or customer, with students serving collectively as the consultant under the guidance of specialized instructors.

This service-learning format enables instructors to guide classes with a flexible coaching style that helps students achieve an outcome, or completion of service or product, as formally agreed upon between the school and business. Further fluidity comes in the form of the diverse skill sets that students bring, based on their knowledge and experience and variables such as the academic program they represent. Similarly, instructors in the program are experts in subject matter from content areas across the college.

In its initial visit to ESTO, the CECS team from Gateway determined that the “Biz Squad” model could be replicable at ESTO as a project-based learning environment to achieve the development of entrepreneurial capacity. Students were selected by instructor nomination, which was significant because it allowed a true representation of multi-dimensional skill sets across academic disciplines to participate. This methodology replicates a systems approach in learning across organizational matrixes.

Replication Process: Starting in September 2012, the ESTO instructors shadowed the Gateway “Biz Squad” course and participants. They connected via videoconference to watch interactions between Gateway students and instructors. This experiential learning opportunity helped the instructors understand the processes of problem-centric learning and helped them see how cross-functional teams work in a consultative manner.

The initial intention was to prepare ESTO instructors to be trained on how to conduct a *Biz Squad* course. After training in Fall of 2012, the CECS team determined it would help in application if students and faculty from both ESTO and Gateway worked on projects collectively. The training plan evolved for the first ESTO “Biz Squad” to work in tandem with Gateway students in the Spring of 2013. This approach enabled ESTO instructors to experience the interaction between students and faculty under the direction of the Gateway program leads and demonstrated how problem-centric learning evolves and is coached. (There typically is no set agenda per se for preparing instructors on how to “teach” in *Biz Squad* course. Each group differs based on participants, their specific skill sets, and the problems at hand. One “Biz Squad” teacher has compared teaching this course to snowflakes in the sense that no two are ever the same.)

In January 2013, ESTO implemented its first “Biz Squad” class with 14 students from cross-functional programs. Biz Squad teams from Gateway and ESTO worked collectively on two businesses from Wisconsin and Oujda through problem-centric learning. They met weekly via videoconferencing throughout the semester. Two more classes followed in September 2013 and January 2014, engaging 30 more students, three additional U.S. businesses, and four more Moroccan businesses. Projects included website development, graphic design, database development, and marketing.

The successful launch of this effort increased opportunities for ESTO and Gateway students to work on diverse international projects, which increased the depth and breadth of programming for both schools. The involvement of faculty, students, and entrepreneurs dramatically increased participants’ international exposure to different

cultures, business practices, and educational models. Students at both institutions had the opportunity to work as a team with students from very different cultures, working in a consultancy manner with businesses that have different policies and practices.

Key Elements of Adapting the “Biz Squad” Model: It was through extensive outreach to the local business community that ESTO was able to attract projects for consulting work. A working relationship was established between the ESTO “Biz Squad” team and the Confédération Générale des Entreprises du Maroc (CGEM), a local business organization similar to a local chamber of commerce chapter in the U.S. The CGEM support for the project included a visit to USAID in Morocco, where CGEM representatives spoke on behalf of the value of the CECS initiative.

At the close of this project, more than 44 ESTO students had worked on a total of 13 consultancies with local businesses in Oujda. These students also worked with businesses in the United States in partnership with Gateway students. Working cross-functionally with colleagues in another country to serve their local economies was an unprecedented experience for students from both partner institutions.

Cultural adaptation was a critical component for each educational institution. The U.S. students gained a greater appreciation for the importance of research, which is a critical part of creating project specific work. Before they engaged in any videoconferencing, they researched the Moroccan culture and how business was conducted there in order to be better able to work with their ESTO counterparts. Students in the U.S. did not realize, for example, how close Morocco was to Europe geographically and how this proximity affects Morocco’s business culture and practices. Students also had to take into account language considerations, given that both French and Arabic are spoken at ESTO.

Entrepreneurialism is a relatively new concept in Morocco, where a majority of the population works in government and industry, so having your own business is not a common endeavor or even encouraged. Projects in the CECS initiative required a different mindset, considering variables such as markets, targets, and technical

requirements that stretched students to look beyond an ethnocentric perspective either in field of study, or literally.

Students from both Gateway and ESTO found it more of a challenge than they expected to keep lines of communication open. Students felt that not having a shared language was sometimes an obstacle. The students communicated through weekly video conferences and e-mails. When each party submitted a document to the group, they would do so in their own language and then use a translator tool. Sometimes the literal translation missed the essence of what was really being communicated—some lingual and cultural nuances proved difficult to translate effectively. As a result, the students needed to reconnect often to clarify intention versus perception. Students' technical communication skills grew. Several students learned some French/English as they became familiar with greetings and signatures. One student expressed appreciation for the faculty who were involved in the project because they did not expect perfection and acted as a safety net in case the Biz Squad students ran into problems.

OVERCOMING BARRIERS AND DEVELOPING CULTURAL COMPETENCIES: LESSONS LEARNED AND BEST PRACTICES

Among many lessons drawn from the CECS project, we learned that assumptions were fundamentally the most challenging obstacle to overcome. The old adage “you do not know what you do not know” applies here: A very real challenge was a lack of awareness that assumptions were an obstacle at all. During the project's development phase, for example, participants knew that there would be strong differences with language and culture, and each stakeholder prepared with what was thought to be appropriate training to bridge these gaps. Despite diligent and well-intentioned efforts in language training on both sides, along with deep explorations of each culture, it proved nearly impossible to prepare for some of the fundamental social, educational, and religious dissimilarities that impacted the project. Basic differences in business communications and practices emerged throughout the project.

While distinct differences emerged that could be perceived as barriers, very positive group dynamics emerged that helped to address many of these challenges. During the first visit of the U.S. team to Morocco, Gateway staff found that many of the ESTO instructors had not heard of the CECS project or the “Biz Squad” model. There was a lack of clarity about the project and its scope and about replicating the “Biz Squad” model in Morocco, causing understandable apprehension. This confusion presented an opportunity for representatives from Gateway to describe its success with the “Biz Squad” model and to outline how it might work in the context of ESTO. There was an almost immediate buy-in from instructors at ESTO. By the end of the first day of meetings, the group was infused with palpable energy. This energy would remain in evidence throughout the project, particularly among the core instructors, and was reflected both in instructors’ regular attendance at training sessions as well as in their integration of concepts from the training into all of their classes, not just the “Biz Squad.” course. The emergence of this very positive dynamic helped set a strong foundation for the project’s success.

Initial programmatic challenges included the identification of ESTO partner team members to participate in the planning process and subsequent project activities. It was really not until the U.S. team visit to Morocco in May 2011 that we began to link personnel to program objectives in a logical and sustainable way. Project personnel were further solidified, as were project objectives and deliverables, as a result of the Moroccan team visit to the U.S. in July 2011.

One of the programmatic challenges in the CECS project related to obtaining visas for travel and navigating related logistics in the host country. Fortunately, the U.S. team spent a day in Rabat during the May 2011 meeting with U.S. Embassy representatives to discuss the partnership. Subsequently, we were able to leverage this relationship to expedite interviews in Morocco, receive needed visas, and maintain our condensed travel schedule. This was a valuable lesson learned—involve local embassies and State Department help, along with that of funders; their influence is invaluable in navigating the labyrinths of bureaucracy.

Early in the project, subject matter experts, school administrators, and those identified as participants in program replication and implementation carefully mapped out a detailed three-year timeline for the project. In practice, however, many unforeseen factors conspired against the timeline. While each partner agreed to meet all deadlines, for example, we learned that the timeline was aligned more to U.S. work practices and assumptions, and did not adequately reflect time constraints of the Moroccan partners, academic calendars, and holiday schedules. These discrepancies were never formally communicated, but rather were discovered.

Differences in language, culture, and structures of our respective academic institutions also influenced project progress. The language barriers often seemed to overshadow tasks at hand. When planning the project a language lag was expected, but knowledge of this in the abstract and its application in practice proved rather different. At times it seemed as if there was more time invested in waiting for translation, or verifying content, than doing the project work. This would often prove frustrating for both groups. Cultural difference surfaced most in business practices, timeliness, and commitments. There was a disconnect in general business practices: Where in the U.S. there is more of a “pull” based on outcomes, in Morocco the “push” is relational, which in turn creates the byproduct of the outcomes. Another important lesson learned, therefore, was that it is imperative to expect and to plan more directly and proactively for such differences.

We learned that flexibility was critical to allow for the unexpected and unplanned. While a clear outline of how to replicate the program was established during the planning phase, achieving that goal in practice proved different than what was planned. Further, when the project proposal was written, it was done collaboratively with diverse stakeholders. However, from the time the project was initiated until the time the project ended, there were changes of key stakeholders and personnel at both partner institutions. These changes included leadership and key implementers. All of these factors required flexibility at virtually all stages of the project.

In regard to the changes in project personnel, we learned that it was important to have a solid project plan with buy-in from many key stakeholders, to ensure that the project would not dissolve with changes in personnel or leadership. In that regard, we believe the project relationship has to be at the institutional level, with engagement from the top down as well as from the bottom up, with more than one person on each end of the spectrum. Because the CECS project had these degrees of engagement at multiple levels within both institutions, it was insulated from changes in leadership that did occur. Solid planning, well-articulated objectives, and a results-based project framework all helped to drive and guide the CECS team even as personnel changes occurred. Regardless of unknown variables or changes, teachers and students had a clear pathway to follow.

Another lesson learned was about the importance of having a project roadmap. The project planning phase was cumbersome and labor intensive, involving months of rigorous work. Each objective stated a goal followed by an expected outcome that would result if the objective was achieved. The plan mapped expectations for the timeline of actions necessary to achieve the outcomes. Neither group anticipated the level of evaluation that would drive the program plan, but ultimately evaluation measures were the metrics that drove the objectives, outputs, outcomes, and activities. As simple as it seems, that element of planning was not simple. While the team labored over this, investing considerable time, that exercise proved to be a powerful learning experience. The takeaway lesson, therefore, is to start a project with clear objectives and actionable steps that can be measured—that approach served as our roadmap. We remained flexible and fluid enough to be able to respond to unexpected and serendipitous situations, but the roadmap served as a hallowed guide throughout the project and contributed to its success.

Political savvy was equally important for coping with changes in personnel on the project. Given the level of personal engagement in the project, it was difficult at times to keep a professional distance when political turnover took place resulting from changes in leadership. This is no different than when there is a sweeping change in a U.S. institution and top management exits or is removed. Changes in leadership at ESTO

were no exception. There was a change from the original project initiator to a director who had a different leadership style and priorities. While skeptical at first about the project, perhaps due to lack of information about it, the new director grew to understand the impact the project had on students and became the greatest advocate of the partnership in seeking to find ways to grow the relationship.

The U.S. team had to examine their own perception of what was “right and wrong,” recognizing they might be viewing the situation through an ethnocentric scope. The U.S. team was not always privy to how school politics were conducted at ESTO and needed to refrain from involvement in interpersonal dynamics there. This was not always easy since personal relationships and friendships had developed. We learned, therefore, that an unbiased approach, with the project objectives as the goal, was vital for handling ambiguous situations with respect to our partner’s political structures and situations.

RECOMMENDATIONS

The replication of the “Biz Squad” model required both diligence and flexibility on behalf of the program leads. Without the flexibility of the team, the outcomes may have been very different. While replication would have taken place as part of the project; the sustainability of the replication may have been short-lived had the scope of the project not been flexible to “fit” within ESTO. A rigid structure would not have worked in the context of the Moroccan culture or ESTO as an institution. Customizing the initiative to fit in Morocco was the true key to success.

Recognizing this, we suggest a number of recommendations for those planning to undertake a process of adapting a student entrepreneurship experiential learning program to a new country and cultural context. With the caveat that our recommendations are intended to serve as a guide rather than a standardized “one size fits all” model, our recommendations are as follows:

- **Challenge Your Assumptions:** Throughout this project, the partners continued to discover information or nuances that were new and unexpected. This discovery process emerged in almost every area possible, including paradigms which this project hoped to shift. Structures, processes, and methodologies differed in academic and business institutions in both countries. The academic calendar and programming also differed, so working collaboratively required team members to work twice as hard to make the effort to compensate for these differences. Given the six-hour time difference between Wisconsin and Morocco, for example, a class at Gateway usually scheduled in the evening had to be shifted to the morning. The students at ESTO and Gateway worked late to meet outside of their program schedules, into the summer and over their misaligned breaks, to allocate the needed time to complete the projects. While everyone tried to be respectful of sacred times (e.g. Friday afternoons in Morocco), the misalignment of timing made it difficult. But the lessons learned from such experiences—that partners need to regularly challenge their own assumptions and expect the unexpected—was powerful.
- **Tap Into Existing Resources and Create Synergies Across Initiatives**

Pursuing Similar Goals: This partnership had the opportunity to link with other training initiatives and to develop parallel prospects for students. For example, leadership at Morocco’s Mohammed I University (Université Mohammed Premier) decided to create a business center where local businesses, professional/vocational education schools, and university faculty and students work together with the aim of strengthening business-education ties. This initiative aligned with the goals of the “Biz Squad” approach in terms of focusing on economic development of new and existing companies. Other projects with similar goals would do well to seek and capitalize on such synergies.
- **Creating Ample “Entrepreneurial Space:”** In service learning-focused programs such as the CECS program, we believe that facilitating the creation of an “entrepreneurial space” that fosters an openness to entrepreneurialism is important. The space is given meaning by the users. If there is not an innovative mindset, the space is merely a building or room. For example, within the

business center, there was a shared library of resources and working space for all stakeholders. Videoconference equipment was accessible to classes, businesses, and faculty. Having this common space helped establish strong linkages between higher education institutions, vocational schools, and local businesses, helping these varied partners develop a shared mindset about the project and thus creating part of a foundation for the project's success.

- **Seek Support From Key Leaders:** Having the support and buy-in of higher education institution leaders helps to promote and spread a shared entrepreneurial spirit within the institution and beyond its walls.
- **Use Available Resources From the U.S. Government:** The U.S. embassy's strong support for the CECS project was important to overall success and sustainability. Ambassador Kaplan's visit to ESTO and subsequent contact with the U.S. Embassy through the project, including a luncheon the Embassy hosted for project stakeholders, resulted in strong connections that proved very helpful when project participants had difficulty with visas and navigating bureaucracies to stay on travel timelines.
- **When Working in Programs That Are Traditionally Theory-based, There is an Expected Result or Outcome if a Specific Action is Taken:** The Moroccan partners have experienced a paradigm shift following the U.S. Team visits to ESTO and the University resulting in a stronger belief in education for employment as opposed to traditional theory-based models of education. This change was expected based on the project activities outline at the onset of the project.
- **Insist On and Nurture Commitment to the Project From All Participants:** It may seem obvious, but a genuine commitment to CECS by all parties was a requisite for its success. In this case, ESTO's interest in establishing collaborative ties with a U.S. institution was a critical motivating factor in their ongoing involvement in the project. An opportunity to build relationships and follow best practices was of great value to ESTO, as was its desire to serve as a center of excellence in the BMENA region. These interests on the part of ESTO helped keep it engaged in and committed to the project from the onset forward.

- **Focus On Similarities, Not Differences:** Students and instructors in the United States and in Morocco are more similar than different. While there were decided differences in culture, education, and language, we found that in terms of craving knowledge students at ETSO had much in common with their counterparts at Gateway. Similarly, faculty at ETSO had the same commitments to teaching and guiding their students as did faculty at Gateway. These similarities are building blocks of a successful partnership.

CONCLUSION

The CECS project centered on building business and education partnerships that provide current industry training, a model to sustain that training, and the sharing of expertise between faculty, university staff, and local businesses. The project provided a unique opportunity to strengthen the cooperative relationship between Morocco and the United States through global commerce, with the common denominator being workforce development and economic development. The relationships established between the participating schools were exemplary and continue to foster new educational exchanges through unanticipated results. A student exchange is one unanticipated result: Students at Gateway can now work with and learn about their counterparts in Oujda through a newly established international exchange program. Students in Oujda can work with businesses locally and internationally, participate in the student exchange program, and develop connections rooted in this project.

One of the greatest unexpected outcomes was the rippling impact on Gateway. In ways that exceeded the scope of the grant funds, this project stretched participants to creatively navigate uncharted ground at the college. Under its extremely progressive leadership, Gateway's mantra is to "blaze trails." The CECS project challenged Gateway staff to build capacity to connect internationally in an impactful manner. It opened the opportunity for the export of our "Biz Squad" model to international partners outside of our relatively like-minded European partners. While many students and businesses in

Oujda, Morocco, will benefit from the fruits of our labor, it is the communities that Gateway serves which may benefit the most. Today, this experience has blazed a trail for replicating programs and building partnerships around the world. Here at Gateway we believe we can better serve our community as a result of the privilege we have had to collaborate with partners in Oujda, Morocco.

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Broader Middle East and North Africa–U.S. Community College Initiative

Linkages for Entrepreneurship Achievement Project (LEAP): Joint Cooperation Between U.S. and Moroccan Colleges and the Ministry of Education, Scientific Research and Professional Training of Morocco

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PARTNERSHIP AT A GLANCE

Two community colleges in Massachusetts and two postsecondary institutions in Morocco partnered to implement the Linkages for Entrepreneurship Achievement Project (LEAP). Established to strengthen already existing strategic and economic development projects jointly developed by Morocco and the United States, the LEAP project aimed to promote entrepreneurship, workforce, and economic development in Morocco by increasing institutional and human capacity- building at the Moroccan colleges.

PARTNERS

Middlesex Community College, Bedford and Lowell, Massachusetts

Bristol Community College, Fall River, Massachusetts

Ecole Normale Supérieure de l'Enseignement Technique, Rabat, Morocco (ENSET Rabat)

Ecole Normale Supérieure de l'Enseignement Technique, Mohammedia, Morocco (ENSET Mohammedia)

USAID SUBAWARD SUPPORT UNDER LWA AEG-00-05-00007-00

Initial grant: \$58,525 (February 1, 2010 – July 31, 2011)

Scale-up grant: \$459,747 (January 1, 2012 – December 31, 2015)

Total Institutional Cost-share contribution: \$115,452

INTRODUCTION

In 2012, two U.S. community colleges in Massachusetts, Middlesex Community College and Bristol Community College, and two postsecondary technical colleges in Morocco, Ecole Normale Supérieure de l'Enseignement Technique in Rabat (ENSET Rabat) and Ecole Normale Supérieure de l'Enseignement Technique in Mohammedia (ENSET Mohammedia), engaged in a partnership to implement the Linkages for Entrepreneurship Achievement Project (LEAP).

Established to strengthen already existing strategic and economic development projects jointly developed by Morocco and the United States, the LEAP project aimed to promote entrepreneurship, workforce, and economic development in Morocco by increasing institutional and human capacity building in the Moroccan institutions. To these ends, the partners received a USAID award of \$58,525 for a six-month planning grant from Higher Education for Development (HED), followed by \$460,852 for the LEAP project period of February 2010–December 2014.

CONTEXT IN MOROCCO

The LEAP partnership focused on entrepreneurship as a solution for social and economic problems in Morocco. In Morocco, as in several other BMENA countries, tradition and cultural norms lead many young people to pursue careers in government, employment that is seen as stable. Recent economic conditions, however, have led to circumstances where there are not enough government jobs for those who seek them. Moreover, a sluggish economy overall has led to problems with unemployment, particularly among young people.

As in many developing countries, Morocco needs to learn how to create jobs in the private sector that can help it sustain social and economic development. Job creation expertise would help address this challenge, particularly for growing youth populations. Self-employment offers another significant path forward. Given these contexts, a key challenge in Morocco is to shift focus to job creation in the private sector and through self-employment. Entrepreneurship education at all levels can help advance those goals.

GOALS OF THE LEAP PARTNERSHIP

To help reduce the unemployment rate in Morocco, the partners in the LEAP project focused their efforts on entrepreneurship promotion at the two ENSETs. LEAP had the following three principal objectives:

- Build the capacity of faculty at the ENSETs to teach students the critical components of entrepreneurship and enterprise development.
- Create an educational curriculum framework that will succeed in delivering high quality experiential learning opportunities to strengthen the capacity of students to launch and operate their own businesses.
- Increase the capacity of ENSETs to carry out extension and outreach activities.

Among many important outcomes of LEAP, this article will focus on outcomes from the second objective, creating new and revised curricula, and the approval of 14 new and revised programs at the national level by the Ministry of Education, Scientific Research and Professional Training.

We will look in particular at how engaging several Moroccan government agencies that are directly involved in employment development helped the LEAP partners to achieve this objective. The LEAP partnership for example, offered many opportunities for the partner institutions to connect, share their experiences, and work toward common objectives. However, program and course approval in Morocco is complicated by the need to satisfy the requirements of the Ministry and the University which provides leadership to the colleges. Our paper will explore the challenges faced and solutions designed to meet our goal of embedding entrepreneurship modules across the ENSETs by establishing linkages with both ministries to enable a smooth approval process for entrepreneurship courses and co-curricular activities. The paper will review many creative ways in which the ENSETs engaged members of the ministries, including their participation in all training sessions held in Morocco, one-on-one meetings with Ministry of Education, Scientific Research and Professional Training members, and their inclusion in co-curricular activities.

DEVELOPMENT OF COLLABORATION

During the summer of 2010, Higher Education for Development (HED) issued a Request for Proposals for a planning grant to build entrepreneurship capacity through collaborations between higher education institutions in the U.S. and the BMENA region. Discussions at Middlesex Community College (MCC) ensued and it was decided that the college would look to partner with a higher education institution in Morocco. Morocco's King Mohammed VI had identified the development and growth of a strong entrepreneurship culture as a key priority throughout the Kingdom of Morocco. The Ministry of Education, Scientific Research and Professional Training planned to support this priority by building capacity at educational institutions to teach entrepreneurship and create a shift in thinking away from careers in government and toward self-employment. Those goals were in sync with educational priorities at MCC.

Salah Dahany, coordinator of languages in MCC's Flexible Studies Department and a Moroccan citizen, was asked to join the grant development team. He identified Omar Bouattane of ENSET Mohammedia as a key collaborator in the planning grant. Two additional partners emerged through an HED-sponsored webinar. First, Mourad Taha Janan of ENSET Rabat asked if we were interested in collaborating with his institution in building an entrepreneurship culture and capabilities. Second, Bristol Community College (BCC), located in southwestern Massachusetts, reached out to MCC to partner on the grant. Those development topics discussed on the webinar corresponded well with the expertise and capability of MCC and also meshed with the capabilities of BCC. Discussions that followed identified several areas of need regarding the creation of an entrepreneurship program.

In Morocco, each technical college is led by a regional university. As part of the LEAP project, ENSET Rabat and ENSET Mohammedia immediately engaged with the University Mohammed V and Hassan II University, respectively. During the planning grant, the U.S. and Moroccan LEAP management team met with the president and vice presidents of both universities. The partners outlined a strategy for implementation, gaining insight from the university leadership that was incorporated into LEAP planning.

Soon after these discussions, an Entrepreneurship Committee was established at University Mohammed V. Two of the team members from ENSET Rabat were asked to sit on that committee. They apprised the university of grant activities, accepted input from the university leadership, and incorporated suggestions from the university into LEAP plans at ENSET Rabat. University representatives also identified activities they would engage in to enhance the entrepreneurship education of their own students, such as an entrepreneurship day on campus.

ENGAGING MULTIPLE MINISTRIES IN THE CREATION OF AN ENTREPRENEURIAL ECOSYSTEM

Governments worldwide know that entrepreneurship is one of the best engines of economic development. For example, a report of an OECD conference held in June 2004, “Promoting Entrepreneurship and Innovative SMEs in a Global Economy,” noted that “education and training can encourage entrepreneurial culture.” The teaching of entrepreneurship in general, and that of innovation in particular, is growing rapidly worldwide because it contributes to economic growth, job creation, and reintegration of disadvantaged people such as the unemployed.

In Morocco specifically, the teaching of entrepreneurship contributes to building a culture of entrepreneurship both within and beyond Moroccan institutions of higher education, improving the image of entrepreneurship in general and enhancing the role of the entrepreneur in society. It also helps develop risk-taking qualities and acceptance of innovation and change in Moroccan students, opening their eyes to career opportunities outside the tradition of government employment. Further, it increases the prospects of survival and success for businesses and enhances companies’ mindset of discovery and learning.

Through the LEAP partnership, the ENSETs nurtured connections among universities, community colleges, and private sector businesses from Morocco and the United States. The LEAP project collected many suggestions from these stakeholders about how to develop a true entrepreneurial culture in Morocco.

Government agencies in Morocco were also pivotal partners in this work. From the very

beginning of the grant activity, for example, the Ministry of Education, Scientific Research and Professional Training was part of LEAP's integration plan. Representatives of the Ministry attended both training sessions held in Morocco. LEAP partners including Mourad Taha Janan and Omar Bouattane updated government representatives regularly on the activities of the grant and made it a point to incorporate their suggestions into the implementation plan. Furthermore, government representatives were updated on advances in curriculum design and framework construction. All of this engagement helped instill a sense of involvement and ownership on the part of the Ministry of Education, Scientific Research and Professional Training, support that was critical for achieving the LEAP partnership's goals.

APPROVAL OF NEW AND REVISED PROGRAMS

We believe one of the most significant achievements of the LEAP project was the creation of 14 new and revised academic programs, all of which included entrepreneurship curriculum developed through the partnership and all of which were approved by the University/Ministry of Education, Scientific Research and Professional Training of Scientific and Research Education.¹ The work of the partnership aligned with and contributed to a directive from King Mohammed VI that entrepreneurship be inculcated across the curriculum in Moroccan institutions of higher learning. Interest in facilitating this requirement helped spark the ministers from the Ministry of Education, Scientific Research and Professional Training to engage in our work and ensure that entrepreneurial content was integrated into the ENSET curriculum. The Ministry recognized that the project would help it develop a deeper understanding of entrepreneurship content that it could share with other colleges and universities throughout Morocco, and help it deliver on the King's priorities. After sitting in on the U.S. training sessions, the ministers had a deeper understanding of the curriculum proposal and this led to a swift approval of the materials.

Ten years ago, entrepreneurship training in Morocco was almost absent in universities and schools, except for a few applied components in business courses. Starting in the early 2000s, some schools and colleges began inserting entrepreneurship courses in their curriculum. Those

initiatives emerged due to the changing economic context and the higher education system. A confluence of specific developments helped spark those reforms, including the following:

- Reform of the Moroccan Higher Education (Law 01/00), which gave a new impetus to entrepreneurial vision in the educational curriculum. The first entrepreneurship teaching experiences led to creation of business incubators and more development of university-business interfaces.
- The establishment of industry specific sector strategy programs that prompted some institutions to implement entrepreneurial training courses for students and courses in disciplines related to specific industries.
- The establishment of regional investment centers (RICs), in response to a Royal Decree of January 2002, brought a new approach to business creation in Morocco. The decree granted more authority and responsibility to the 16 regions of Morocco in facilitating and promoting investment, including serving as a “one-stop-shop” for business registration, investment, and enterprise development. RICs are now being promoted as good partners for institutions that offer entrepreneurship training.
- Expanded involvement by associations and aid organizations in business creation in Morocco. These associations hosted a variety of activities that complemented the LEAP project to promote the spirit of enterprise in Moroccan universities, including:
 - The program *Understanding the Company* at the universities in partnership with International Labor Office
 - The *Entrepreneurial Culture Program* in Moroccan engineering schools
 - The *Entrepreneurial Spirit Development Program* under the ALEF project of USAID

While such programs are commendable and helpful, training beyond just building enthusiasm for entrepreneurship is vital. Fortunately, government agencies have officially adopted requirements that entrepreneurship courses or modules in vocational training programs in all Moroccan universities and colleges. In that regard, for example, a collaboration between the Ministry of Education, Scientific Research and Professional Training and the Ministry of Industry, Trade and New Technologies (Ministre de l’Industrie du Commerce, de l’Investissement et de l’Economie Numérique) developed a training module on innovative entrepreneurship and sought to create

200 innovative companies by the end of 2014. Toward this goal, Moroccan universities committed to help develop innovative companies.

To create an educational curriculum framework that would strengthen the capacity of students to launch and operate their own businesses, the partners developed a number of experiential-focused curricula, degree programs, and awareness initiatives, or adapted existing ones based on international best practices and the specific cultural and economic contexts and needs of Morocco. With input from private industry partners, LEAP faculty developed new engineering programs which have entrepreneurship concepts embedded into the curriculum, while more traditional business-oriented programs are directly aligned with national priorities on developing an entrepreneurial culture in Morocco. All of these programs were developed with either direct or indirect input from business leaders, and require completion of experiential/applied learning opportunities (through internships and business plan development). Further, partners collaborated to develop a technology platform for entrepreneurship teaching and learning, which provides a practical approach to deploying technological innovations that make education more accessible and provide opportunities to support self-study.

The results of this work are reflected in the following tables, which summarize new or revised programs at each ENSET.

ENSET Mohammedia: Approval of New or Revised Programs for the		
<i>Program</i>	<i>Program Title</i>	<i>New Or</i>
Engineering	Electrical systems and renewable energy	NEW
	Industrial Logistic management	REVISED
	Software engineering and distributed computing	REVISED
Master	Management control and Financial engineering	NEW
	Distributed Information Systems	REVISED
Professional Bachelor	Economic and Accounting Sciences	REVISED
	Trade and distribution	NEW
	Mechanical engineering of industrial systems	NEW
	Administration and enterprise management (Two	NEW
DUT	Electrical engineering and industrial computing	REVISED

ENSET Rabat: Approval of New or Revised Programs for the Academic Year		
<i>Program</i>	<i>Program Title</i>	<i>New Or</i>
Engineering	Electrical Engineering	NEW
	Industrial Design and Production	NEW
	Biomedical Engineering	NEW
Master	Mechanical Engineering	NEW
	Water, Energy and Environment Sciences	NEW
	Electrical Engineering	REVISED

In addition to the specific programs listed in the tables, all the departments at both ENSETs introduced entrepreneurship modules into their programs. Mandated by the Ministry of Education, Scientific Research and Professional Training, this addition of entrepreneurship-related material was bolstered by the partnership's work to share American understandings of entrepreneurship concepts and show how they could be readily implemented in ENSET classes. This work included curriculum development, active learning strategies and assessment.

The celebration of Global Entrepreneurship Week in 2013 (GEW 2013) was another important milestone in the project. GEW 2013 was held from November 18 to 24, 2013, across 160 countries. ENSET Mohammedia, as part of this partnership, organized a series of events to celebrate GEW 2013, hosting various activities to promote entrepreneurial culture. In addition to those activities, ENSET Rabat held an entrepreneurship day in collaboration with a project funded by the UNSECO/UNEVOC jointly with the Ministry of Education, Scientific Research and Professional Training.

In sum, all of these activities help create an educational setting in the two ENSETs that offers high-quality learning opportunities in entrepreneurship for students and local citizens, providing them with theoretical and practical tools they need to start and run their own business as well as strengthen and improve existing small-and-medium enterprises.

PROGRAM AND CURRICULUM APPROVAL PROCESS

The process to have program and curriculum approval awarded to programs includes the development of a proposal based on criteria established by the Ministry. The proposal includes general administrative information, program personnel and university approvals, program rationale and linkages to sector-focus, curriculum module descriptions, academic structure, and syllabi with learning outcomes, modalities of delivery, and assessments.

These proposals are then sent to the University charged with oversight for that college. It is reviewed by the Curriculum Committee at the university based on criteria established by the Ministry and either approved, rejected, or sent back to the college for revisions. If the proposal is approved it is sent to the Ministry for final review.

The Moroccan partners completed the proposals using curriculum developed during the LEAP partnership. The full process was slated to take 18 months; however, the Ministry made changes to the proposal process which delayed the approval. In actuality approvals took the full three years of the partnership.

As part of the grant, advisory boards were established. Board members, met regularly over the course of the three years for various reasons including event planning and curriculum review and comment. Having the insight of entrepreneurs and agency staff responsible for driving entrepreneurship on the board was invaluable in providing a real life perspective and input into the curriculum design and proposal development.

The following table shows the program accreditation process and its different steps.

Step	Concerned entity
1. Proposal of programs	Faculty/Departments
2. Institutional approval	Institution council
3. Approval by the university	University council
4. Accreditation	Ministry of Education, Scientific Research and Professional Training (National Agency for

CHALLENGES, SOLUTIONS, AND LESSONS LEARNED

The resolution of key challenges encountered in the course of integrating more entrepreneurship training in the ENSETs helped the LEAP partners draw important lessons that could be instructive for similar projects. The tables that follow summarize this part of the partnership.

Challenges Related to the Moroccan Ministry of Education, Scientific Research and Professional Training of Education and Vocational Training	
Action 1	
Partners:	<i>Ministry of Education, Scientific Research and Professional Training of Education and Vocational Training</i>
Activity or Event subject:	<i>Entrepreneurship promotion</i>
Achievements:	<i>Establishing links with neighboring institutions to raise the awareness of high school students and teachers of the importance of entrepreneurial culture</i>
Challenges:	<i>Need for official and institutional framework to train teachers of these schools.</i>
Solutions to challenges:	<i>Organizing open houses for teachers and high school students with the agreement of the educational head of the district of Mohammedia</i>
Action 2	
Partners:	<i>Ministry of Education, Scientific Research and Professional Training of Higher Education and Scientific Research</i>
Activity or Event subject:	<i>Engagement of the Ministry of Education, Scientific Research and Professional Training in the training</i>
Achievements:	<i>Mandatory strategy to include entrepreneurship courses or modules in vocational programs in all Moroccan universities</i>
Challenges:	<i>Decisions and directives were introduced in the new national education standards to take effect starting in the academic year 2014–2015</i>
Solutions to challenges:	<i>The ENSETs introduced entrepreneurship courses and modules, beginning in September 2013 in all professional programs in the form of raising awareness and unofficially supplementing some of the existing courses</i>

Challenges Related to the Moroccan Ministry of Education, Scientific Research and Professional Training of Higher Education and Scientific Research	
Action 1	
Partners:	<i>Ministry of Education, Scientific Research and Professional Training of Higher Education and Scientific Research</i>
Activity or Event subject:	<i>Program approval procedures</i>
Achievements:	<i>All revised or new programs were approved in 2013–2014</i>
Challenges:	<i>Delay in approval compared to the progress of our project</i>
Solutions to challenges:	<i>Organization of sessions on awareness raising and conference meetings for the benefit of our students and teachers and our partners</i>
Action 2	
Partners:	<i>Ministry of Education, Scientific Research and Professional Training of Higher Education and Scientific Research</i>
Activity or Event subject:	<i>Approval process</i>
Achievements:	<i>This process lasted throughout 2013–2014</i>
Challenges:	<i>Delay on approval compared to the progress of our project</i>
Solutions to challenges:	<i>During this period ENSETs conducted these training activities and awareness raising programs outside the official programs as supplementary activities.</i>

One of the most critical dimensions of the LEAP partnership was that it focused on students, keeping their interests at the center. That focus helped us convince stakeholders to support the project. One key impact of the project has been the embrace of entrepreneurship on the part of students. The challenges now will be to sustain that very positive change in student behavior and attitudes and to further develop an entrepreneurial mindset through other institutions in Morocco.

RECOMMENDATIONS

To strengthen this kind of partnership exchange and connect more Moroccan universities with U.S. institutions working in the field of entrepreneurship, we offer the following recommendations:

Recommendations for different committees inside ENSETs

1. Strengthen and sustain the results of this project in different ENSETs.
2. Engage in other projects related to entrepreneurship, including creation of business incubators.
3. Share this experience with other institutions and universities throughout the country.
4. Consolidate exchange relationships with member companies of advisory boards.
5. Organize and expand outreach seminars on entrepreneurship for the benefit of high schools in Morocco.

Recommendations for different departments at ENSETs

1. Encourage departments to train their faculty in entrepreneurship through representatives who have already benefited from such training.
2. Organize and expand outreach seminars in entrepreneurship in every department.
3. Develop and continuously improve the entrepreneurship modules in each program.
4. Infuse training about entrepreneurship in teaching practices for different disciplines.
5. Develop partnerships with companies that fit with departmental foci and support initiatives that encourage innovation.

Recommendations for students

1. Encourage students to adopt sound business planning practices through the use of the business plan in all practical learning activities.
2. Ensure the establishment of good peer relations and working group respect.
3. Develop a spirit of adventure and practice through collective student projects.
4. Create standing groups to promote entrepreneurial spirit.
5. Collaborate with the LEAP team to organize and expand outreach seminars outside the ENSET.

CONCLUSION

The LEAP project had several significant results. On a very practical level, it enabled four institutions—two in the United States and two in Morocco— to build highly successful collaborative relationships, with some lessons learned about partnering that can be instructive for similar international projects.

More broadly, the project accomplished a great deal in terms of developing a capacity for entrepreneurship training in Morocco. The two participating ENSETs collaborated with their American partners to develop training and curricula to help students, faculty, and administrators at the ENSETs to better understand and inculcate the principles and promise of entrepreneurship. In so doing, they developed a model for bringing more entrepreneurial training into Moroccan institutions of higher learning that is already being scaled.

More specifically, curricula in entrepreneurship that were developed or refined during the course of the LEAP project were approved by government officials for five years (approvals that we hope will be renewed after that). Given that the Kingdom of Morocco is steadfast in its support of entrepreneurship training as part of every higher education program, the models developed during the LEAP partnership are strongly influencing curriculum standards that require all of Morocco's colleges and universities to offer courses in entrepreneurship over the life of a student's academic program. Even after the official end of the LEAP grant, therefore, its work continues to have a strong impact across Moroccan higher education.

There are strong indications that the work started in the LEAP partnership will be sustained. One of the U.S. partners, Middlesex Community College, has been awarded a grant from the Coleman Foundation to develop additional entrepreneurship curriculum content. MCC will share this information with both ENSETs so that going forward they will have fresh ideas and content. Further, members of the LEAP advisory boards have pledged to stay involved with the ENSETs and will continue to mentor faculty and the students on topics related to entrepreneurship and general business practices. Advisory boards will continue to meet on ENSET campuses and at the sites of individual board members.

We look forward to building on and extending the strong relationships that were established between institutions during the LEAP project, and to further scaling the training and curricular models in entrepreneurship that were develop as part of this important project.

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ⁱ The 14 revised or newly developed programs include bachelor's degree programs in Industrial Design and Production, Electrical Engineering, Biomedical Engineering, Electrical Systems and Renewable Energy, Industrial Logistics Management, Software Engineering and Distributed Computing, Economic and Accounting Science, Trade and Distribution, Mechanical Engineering of Industrial Systems, and Administration and Enterprise Management. Master's degree programs in Electrical Engineering, Management Control and Financial Engineering, and Distributed Information Systems