UNIVERSITY ROOTS AND
BRANCHES BETWEEN
"GLOCALIZATION" AND
"MONDIALISATION":
QATAR'S (INTER)NATIONAL
UNIVERSITIES

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ABSTRACT

Qatar's higher education system is growing rapidly, as science in the Islamic world witnesses a contemporary renaissance. Steering a course toward becoming a "knowledge society," Qatar and other countries in the Arabian Gulf region are now home to dozens of universities. The establishment of many international offshore, satellite, or branch campuses further emphasizes the international dynamism of higher education development there. The remarkable expansion of higher education in Qatar builds upon unifying two distinct strategies, both prevalent in capacity-building attempts worldwide. First, Qatar seeks to cultivate human capital domestically through massive infrastructure investment

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University Roots and Branches

and development of educational structures, including Qatar University. Second, Qatar seeks to match the strongest global universities through direct importation of existing organizational capacity, faculty and staff, and accumulated reputation. Local capacity in higher education and scientific productivity is built simultaneously with the ongoing borrowing of ideas and talent from different regions of the world. The relative youth of the higher education system and the state's small geographic and demographic size are being compensated by considerable investments in the standard-bearing university - a national university taking root simultaneously with hosting branches of eminent foreign higher education institutions, mainly on the Education City campus. Exemplifying extreme glocalization and mondialisation, Qatar has become a regional hub, bridging the traditional university strongholds in the West and the rising powerhouses in the East.

Keywords: University; higher education; Qatar; Arabian Gulf; glocalization: mondialisation

INTRODUCTION

As in many parts of the world, the organizational field of higher education in Oatar is growing rapidly. Within several decades, education and science have become keys to national development on the path toward becoming a "knowledge society." The countries of the Islamic world, with a significant but long-obscured past of scientific achievement (Ofek, 2011), are witnessing a contemporary renaissance (Royal Society, 2010). In so doing, many countries return to rich traditions, such as scholarly mobility, within Islamic higher learning (Welch, 2012). However, a decade ago the Arab Human Development Report still emphasized that the "anaemic state of indigenous R&D in Arab countries [reflects] ... the region's self-imposed technological dependency" (UNDP, 2003; Zahlan, 2006, p. 103). In fact, the growth of international offshore, satellite, or branch campuses in the Arabian Gulf region exhibits tremendous speed and scope, with more than a third of the estimated hundred such university campuses worldwide existing there (Hanauer & Phan, 2011). Thus, examining the dynamism of contemporary higher education development in the region requires attention to both indigenous and international investments - and achievements.

With an abbreviated history of several decades, Oatar's higher education and research policies currently join two distinct approaches. These contrasting strategies are prevalent in capacity-building attempts worldwide: (1) to match the strongest global exemplars through borrowing and direct importation of existing organizational capacity, faculty and staff, and accumulated reputation; and (2) to cultivate native human capital through massive infrastructure investment and development of educational structures. Thus, university-related and science policymaking on the peninsula has been designed to directly connect with global developments while building local capacity in higher education and scientific productivity. Ultimately, the goal is to establish an "indigenous knowledge economy" (Donn & Al Manthri, 2010). The two-pronged strategy attempts to overcome the limits inherent in the borrowing of scientific products and reputation as well as the challenges of fostering local knowledge production where few scientific traditions and institutions exist (for an overview of higher education and science policies in the Arab region, see Nour, 2011).

Leaders in Qatar ambitiously attempt to transcend both the relative youth of the higher education and science systems and the state's small geographic and demographic size through considerable investments in the standard-bearing university - a national university taking root. At the same time, Qatar hosts a growing number of eminent foreign higher education institutions (HEIs) - international universities branching out at Education City. With this dual strategy, Qatar's elite has positioned the country to become a node of global scientific networks. By utilizing its location between the Western and Eastern centers of scientific knowledge creation, Qatar has risen as a regional hub (Knight, 2013, p. 171) in which global trends and forces in (higher) education are recombined in a locally situated process of particularly rapid institutionalization (see Wiseman, Astiz, & Baker, 2013).

Thus, higher education in Qatar exemplifies "glocalization" (Robertson, 1992, 1995), in which global principles and norms have been accepted and emulated, but also adapted to fit the particular social and religious environment – and an extreme climate. Even as foreign research universities and their scholars and scientists are invited to play a central role in developing the higher education system of Qatar, the country has invested in the construction and expansion of a significant national university that reflects the country's particular heritage and is oriented toward local traditions, like Sharia or Islamic law, and social norms, such as ubiquitous sex segregation. These internationally recognized universities must adapt to the specific opportunities and constraints of Qatar. Within the context of remarkable expansion of higher education and science in the region, Qatar presents a valuable case of university development to test the diffusion of the "emerging global model" (Mohrman, Ma, & Baker, 2008), not only in quantitative, but also in qualitative terms. To what extent and in which ways has this model been realized? How have the original characteristics of the research universities that have moved there morphed (see Cowen, 2009, p. 317)?

These dynamic institutionalization processes likewise represent "mondialisation" in that not solely Education City, but indeed the entire country becomes a world territory as it operates as an ascendant node in transnational higher education and science. It builds a Middle Eastern bridge between Occident and Orient. The tremendous investments in higher education and science in many of the member countries of the Gulf Cooperation Council (GCC) may well pay off, but deeper collaboration and cooperation across social, linguistic, and geographic boundaries will be necessary to accomplish the striving goals of the leading research universities in the Arabian Gulf (see Donn & Al Manthri, 2010, 2013; Royal Society, 2010). To what extent has Qatar's two-pronged strategy succeeded in building such bridges? Does the combination of international branch campuses (IBCs) and a national institution represent a successful and sustainable path for the future of higher education and science in Qatar — and for its neighbors?

To address these questions, we begin with a brief introduction to the State of Qatar and the development of its higher education system over several decades, from its roots in a teacher education college. Second, we present the theoretical framework and analytic approach, based mainly on the tenets of sociological neo-institutionalism and organizational analysis. Third, we analyze the contrasting, but also complementary, strategies chosen and the decisions made to construct a higher education system built on two pillars: foreign expertise and domestic experience. Lastly, we extrapolate from the case of Qatar to the broader context of the Middle East in which a number of countries have engaged in similar experiments in capacity building thought to be fundamental for the successful transitioning of countries dependent on petroleum exports to become producers of knowledge. We conclude with an outlook discussing Qatar's comparative advantages and evaluating the potential for its continued rise in the ranks of science nations, even as it exemplifies the worldwide belief that the "worldclass" university is necessary for productivity and progress in constructing the "knowledge society" (Ramirez & Meyer, 2013).

EDUCATION AND SOCIETY IN QATAR

Occupying a 11,607 sq. km. peninsula surrounded by the Persian or Arabian Gulf, the State of Oatar shares a border with Saudi Arabia to the south. Qatar was formerly a British protectorate, but gained its independence in 1971. Two years later the first HEI was founded to train teachers for the expanding school system. An absolute monarchy, it has been ruled by the Al-Thani family since the mid-1800s (on its contemporary history, see Fromherz, 2012). Likewise, its educational institutions are supervised directly by the ruling family. His Highness Sheikh Tamim bin Hamad bin Khalifa Al-Thani, who succeeded his father Sheikh Hamad bin Khalifa Al-Thani as Emir of the State of Oatar on June 25, 2013, himself oversees the Supreme Education Council (SEC). Formed in 2002, the SEC makes decisions affecting all aspects of the educational system. The newest HEI in Qatar, currently being established, bears the name Hamad bin Khalifa University (HBKU), Her Highness Sheikha Moza bint Nasser Al-Missned, who graduated from Qatar University (QU), is the visionary President of the Oatar Foundation, which distributes the resources and oversees the building of Education City, her brainchild, and other institutions. Professor Sheikha Abdulla Al-Misnad, PhD, also an alumna of QU, is the current President of Oatar University. Not least due to its worldwide reputation for investments in the arts, education, and science, Oatar has become an influential member of the Gulf Cooperation Council (GCC) and the League of Arab States (LAS).

Although this small Gulf country has a booming overall population, only an estimated 15% (roughly 250,000) are ethnic Qataris (see Statistics Authority of the State of Oatar, 2013). According to the last census, of 2010, merely a quarter of the inhabitants (414,696) are female; 1,284,739 inhabitants are male - most are among the rapidly growing group of migrant workers considered to be in Qatar for a limited period. If the total population in 2010 was 1.7 million, it is now substantially higher. 1 By contrast, the majority of participants in higher education are women, which reflects local norms of educational investments and foreign mobility as well as the occupational imbalance in schooling (female) and the construction industries (male). A traditionally Muslim country, primarily Sunni, with native Arabic speakers, Qatari society today is characterized by multiple cultures and languages, especially due to hundreds of thousands of migrant workers and expatriates who communicate mainly in English. Society is highly stratified and segregated, with the bulk of its population and labor force composed of migrants mainly from Asia, especially India, Nepal, the Philippines, Pakistan, and Sri Lanka. These migrants, especially those in the booming construction industry building an impressive skyline and stadiums for the FIFA soccer World Championships to be held there in 2022. face excruciating working and poor living conditions in the desert climate (Human Rights Watch, 2012), especially considering the tremendous wealth of the country. The import of talent spans the full labor market. from services and construction to management and science. If the origins of workers in these sectors is highly stratified and the conditions of work vary dramatically, they have in common their contribution to Oatar's hyperdevelopment, their temporary status as guest workers, and their participation in a thoroughly diverse, global labor force. Because of the undeniable and nearly complete reliance on the work of migrants, a government priority is "Qatarization" of the private sector and professional jobs currently held mainly by expatriates (Rubin, 2012). Businesses operating in Oatar must be formed with majority Qatari shareholding, thus international investment simultaneously serves to further enhance Qatari wealth. Yet the bulk of Oatari natives who are employed work in the public sector. Despite massive state investments, further improvements in schooling and higher education and guidance in transitioning from school-to-work and career development are needed as the overall population booms.

Beginning in the 1950s, formal schooling began to be incrementally developed to replace a few schools and informal classes (*kuttab*) taught in mosques or at home by literate men and women knowledgeable about Islam and based on reading and reciting the Qur'an. Then as now, schooling and education are segregated by sex. In 1956, Qatar's Department of Education was founded, dedicated to reducing the considerable illiteracy rates of a rural, largely nomadic population. Students continue to be gender-segregated, but further types of segregation are also prevalent, on the basis of nationality, social class, and language, as many immigrant communities have established schools for their children. The government of Qatar does provide assistance to private schools and even more generously covers costs of schooling in public schools (see Barnowe-Meyer, 2013).

The first institutions of higher education in Qatar were separate teacher-training colleges for men and women that opened in 1973. Before that, those wishing to pursue higher degrees either studied abroad (mainly in Egypt and Lebanon) or took correspondence courses. A decree establishing the University of Qatar was passed, and in 1977 faculties of humanities, social studies, Islamic studies, and science joined the education faculties of the teacher-training colleges. In the 1985–86 academic year, about 1,000

Qataris received government scholarships to pursue higher education abroad, mostly in other Arab countries and in the United States, Great Britain, and France. Such considerable state investment in the education and training of young adults abroad continues, despite the advance of attractive options at home.

Within very few years, all levels of education have grown massively; this development has been quite compressed in comparison to the decades and centuries that many Western educational systems gradually matured. Given consensual acknowledgment of the limits of the natural resources upon which the booming economy is based, the leaders of Qatar have allocated considerable social and economic investments to implement Qatar's ambitious national development program — the *Qatar National Vision 2030* (Qatar, 2008). If these aspirations are to be realized, such capacity building on top of a few decades of educational expansion is especially needed, but as yet there exists no organically grown "indigenous knowledge economy" (Donn & Al Manthri, 2010).

Financed by enormous resources derived from global exports of its oil and especially liquefied natural gas, Qatar now has the highest per capita GDP in the world according to the International Monetary Fund (2011). Thus, it has the financial wherewithal to achieve many of its visions, yet in what do these consist? How are global models of higher education development and scientific productivity being interpreted and realized in Qatar? And what could other countries learn from the institutionalization processes building on the two contrasting strategies of borrowing scholarship and organizational capacity and investing in domestic higher education, science, and innovation?

THEORIZING GLOBAL DIFFUSION AND NATIONAL (HIGHER) EDUCATION EXPANSION IN THE GULF REGION

Sociological neo-institutionalism has long focused attention on the world-wide diffusion of education ideals, standards, and policies — and the effects of educational expansion globally (e.g., Baker, in press; Baker & LeTendre, 2005; Meyer, 1977, 2009). Institutions can be defined as cultural-cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior (DiMaggio & Powell, 1991; Scott, 2008). If the regulative pillar is enforced through coercion and comprises the defined

rules (such as the decisions the Emir takes in regard to education), the normative pillar of institutions is based on standards and professional practices, which are the means of creating a "world-class" university from scratch. The cultural-cognitive pillar consists of shared conceptions and frames, such as the traditional principles of Qatari society as well as ideas Qatari stakeholders educated abroad have gleaned worldwide and translate for implementation back home.

The ongoing transnationalization of higher education and science tests traditional nation-based analyses of institutional change in education. Yet even cross-national analyses often discount similarities and differences in the foundational principles undergirding these complex systems. In response, neo-institutional analyses have explored the global diffusion of ideas and norms relating to higher education (Drori, Meyer, Ramirez, & Schofer, 2003; Schofer & Meyer, 2005). Such work has uncovered the ideologies, values, and assumptions that guide educators and policymakers as they continuously attempt to optimize their institutions and organizations based on comparisons with other countries. Neo-institutionalist approaches emphasize legitimacy rather than efficiency; the striving for legitimacy leads to the global diffusion of institutional scripts, such as the consensus that higher education and science are necessary for progress and innovation, regardless of national economic or democratic developmental level (e.g., Dobbin, Simmons, & Garrett, 2007; Ramirez & Meyer, 2013). International organizations and supranational governments like the EU accelerate such global diffusion processes (Jakobi, 2009). As the diffusion of these models across national borders accelerates, we need analyses of the consequences of its diffusion, whether convergence or persistent crossnational differences (Ramirez, 2006; Stevens, Armstrong, & Arum, 2008), as convergence or divergence may occur on different levels (discourse, policy, institution, organizational field, and so on), in different pillars of institutions, and both depend on the timeframe of a longitudinal analysis (Powell, Bernhard, & Graf, 2012). Such an approach helps to understand the explosion of higher education based on global models and significantly relying on American and European institutions exporting to and investing in the Gulf region.

Some trends in internationalization, such as the increased spatial mobility of students and faculty or higher education organizations' competition via rankings and benchmarks, seem incontrovertible. All countries must compete in the worldwide rankings, even though the pressure exerted is "mimetic" and "normative" rather than necessarily "coercive" (DiMaggio & Powell, 1991). Yet the global rhetoric surrounding policy

diffusion (see Dobbin et al., 2007) exaggerates the extent to which one national or regional model, whether American or European, fully guides reforms and implementation processes (Powell et al., 2012). Comparisons between nations seem to become easier with efforts at global standardization and the reliance on benchmarks and league tables, even if these are dangerously simplistic (Steiner-Khamsi, 2010); in any case, they increase normative leverage, whether as blueprints or simply to legitimate domestic proposals (Musselin, 2009).

Indeed, in Qatari higher education, not only successful countries such as Canada, New Zealand, or Singapore are referred to often, but also the ruling family and educational leaders cite benchmarks set and standards defined by powerful international organizations, such as UNESCO, the OECD, or the World Bank in responding to challenges and charting the future developments in Qatari education (Donn & Al Manthri, 2010, p. 49). These agencies are immensely influential throughout the Gulf region (Donn & Al Manthri, 2013), with the RAND-Qatar Policy Institute in particular taking a leading role in shaping education reform in Qatar through its involvement with and guidance of programs funded by Qatar Foundation (see www.rand.org/qatar.html). Surely the strongest links in higher education exist with the select group of North American and Western European countries that have been invited to establish branch campuses in Qatar, yet these are located in a context that is simultaneously global and local, the product of hyperdevelopment.

As emphasized in the concepts of "glocalization" and "mondialisation" that attempt to break down facile dichotomies, the global, regional, national, and local levels interact in discussions of world culture and the local/global nexus (see Anderson-Levitt, 2012). This is increasingly so due to communication and transportation networks spanning the globe that raise awareness levels and interconnectivity; distinctions often made between these levels are seriously limited, if not misleading (Robertson, 1995). Exogenous pressure from international organizations and worldwide ideologies are selectively sampled from a surfeit of comparative indicators in lower-level contexts to suggest or inform endogenous reform initiatives or to adjudicate existing policy conflicts. The OECD's PISA studies (see Meyer & Benavot, 2013) or the Bologna and Copenhagen processes (see Powell et al., 2012) provide sufficient contemporary examples of these multi-level dynamics in ideational and policy diffusion and concrete standardization attempts on the ground. If the term "glocalization" emphasizes the acceptance and emulation of global principles and norms as these are adapted to particular local contexts, the term "mondialisation" highlights the reality that the "local" or "national" context of Qatar — as diverse culturally and linguistically as it is — represents a world territory. In bringing scholars and students from around the world to the Gulf, the universities in Qatar become part of a global scientific culture that thrives on crosscultural communication, universal principles, and common goals. "Social and cultural change results from the hugely important transfer of ideas, values and behaviours brought into the region from other continents (Donn & Al Manthri, 2010, p. 36).

Continued growth in the numbers of youth and adults attending all types of HEIs is a key element behind both growing scientific capacity and the role of the university in knowledge production. About half a million (mostly male) students, or just 1% of the youth age-cohort, were enrolled in higher education worldwide in 1900; a century later approximately 100 million youth were enrolled, representing 20% of the college-aged cohort (Schofer & Meyer, 2005). This phenomenal global growth provides the base for recruiting and training future scientists and scholars (Altbach, 2005). The rise of the "super research university," in the United States and elsewhere, reinforces the growth of educational attainment and scientific literacy that affects occupations, businesses, and indeed all dimensions of society (Baker, in press). The original model of knowledge production and innovation and the education needed to supply this system originated and developed in Germany's research universities (Watson, 2010) has been emulated in different parts of the world (Ash, 1999) - and is exemplified in the Oatari case in highly compressed fashion.

While the concrete policies at local, regional, and national levels implemented to pursue internationalization strategies are myriad, the rationale and vision shared by many governments of how to build capacity for science is easily grasped: infrastructure for research lies at the heart of the knowledge triangle - "the beneficial combination of research activity, specialized education/training and innovation that advances our knowledge" (European Commission, 2010, p. 3). In terms of teaching today, internationally oriented universities aim to prepare students for employment as well as for global citizenship, especially in small states like Qatar that rely to a large extent on foreign workers and the worldwide export of goods and services (on the particularities of small statehood, see, e.g., Bray & Packer, 2011; Jules, 2012; Martin & Bray, 2011). In terms of research, governments hope universities will strengthen institutional capacity and broaden networks to contribute to knowledge production on key issues, to enhance prestige and visibility, and to generate revenue (Salmi, 2009). Qatar, with its contrasts of massive investment in science

infrastructure — made possible through low-paid, low-skilled manual labor provided by migrants from around the world — underscores what Appadurai (2000) discusses as two faces of globalization for the academy and intellectuals: the academy's role in facilitating globalization and new forms of hegemony must be self-reflexively thought together in analyses of discourses, policies, social change, and the real resulting inequalities, including those based on educational segregation and stratification.

Despite its relative smallness, the organizational field of higher education in Oatar is increasingly diverse. In terms of types of HEIs, we find several different key organizational forms in Qatar and an even broader range in the region. Developing a typology, Miller-Idriss and Hanauer (2011) differentiate these forms of offshore HEIs operating in the region (as of December 2009): a full-scale, degree-granting, research university or replica campus, such as New York University Abu Dhabi, as part of the "Global Network University"; international, off-shore or branch campuses (e.g., those in Doha's Education City); old and new turnkey foreign-style institutions (e.g., American University in Cairo); transnational or offshore programs (without physical presence abroad); foreign-style institutions (locally established universities modeled on foreign institutions; e.g., the American University in Dubai); and virtual branch campuses (specialized in Internetbased learning). These represent very different strategies, in terms of investment, operations, and prestige. The strategy chosen in Qatar emphasizes IBCs as an internationally recognized component that complements its national flagship - Qatar University - that is also significantly international in terms of faculty, staff, and students.

Thus, we expect that Qatar's higher education and science policies and two-pronged strategy will reflect global norms. Because of the country's increasingly central position in worldwide markets since the discovery of oil and particularly natural gas, and simultaneously its considerable dependence on the import of manual labor and scientific expertise, we expect to find that the isomorphic pressure has affected Qatar to a considerable degree. At the same time, there is a range of strategies available worldwide to expand higher education, and many of the most influential Qatari leaders have attained higher education in Great Britain, bringing semblances of that model home. Further, the Gulf countries are following different paths in their attempts to climb the rankings in global higher education and science (see Donn & Al Manthri, 2010, 2013; Nour, 2011; Willoughby, 2008).

Specifically, we contrast the worldwide diffusion of norms and standards in higher education within self-proclaimed "knowledge societies" and the challenging local realities of Qatar. This small but wealthy and influential state has committed itself to rapid institutionalization of higher education and begun to invest heavily in cutting-edge science. But which strategies is Qatar pursuing and why? Which types of institutions have been established and from which countries? What implications do these choices have for the future of higher education in Qatar and its neighboring countries? This inquiry was a qualitative, case-based analysis, focused on the organizational field of higher education in Qatar, including not only Qatar University but also the array of IBCs hosted primarily at Education City. Evidence was collected mainly from publicly available scientific literature and documents as well as media reports relating to the HEIs themselves, such as annual reports and national development plans. Although with limited availability, existing official statistics and other data sources were consulted. Given the tremendous pace of development, relying only on published literature would have distorted reality, thus these sources were complemented by site visits and expert interviews carried out in 2013.

COMPARING UNIVERSITIES IN QATAR

The following analysis of the institutionalization of Qatar's higher education system provides a specific case study and addresses the larger research questions asked in this volume about the future of higher education and science in the Gulf countries. Looking presciently beyond an economy and societal development funded by the extraction and export of petroleum, Qatar's leaders have chosen the university as the organizational form with much promise as a primary mechanism of modernization; in doing so, they reflect similar choices made in Germany two centuries earlier, the United States after the Second World War, and numerous East Asian societies more recently. The university has shown itself to be among the most durable of all institutions in history; its successful institutionalization in nearly all contemporary societies emphasizes its adaptability to the widest range of contexts. Since 1973, fifteen tertiary-level institutions with very different profiles have been founded in Qatar (see Table 1).

The Qatar Foundation for Education, Science and Community Development, as the key corporate actor building science capacity in the country, simultaneously identified other organizational forms as instrumental in preparing to become a "knowledge society." Both a science and

Table 1. Higher Education Institutions in Qatar.

Higher Education Institution	Home Campus Location	Established	Doha Location
Qatar University	Qatar	1973	West Bay
Qatar Aeronautical College	Qatar	1975	West Bay
Virginia Commonwealth University	Virginia, USA	1998	Education City
Stenden University Qatar	The Netherlands	2000	Al Rumaila West
College of the North Atlantic — Qatar	Newfoundland & Labrador, Canada	2001	West Bay
Weill Cornell Medical College in Qatar	New York, USA	2001	Education City
Texas A&M University at Qatar	Texas, USA	2003	Education City
Carnegie Mellon University in Qatar	Pennsylvania, USA	2004	Education City
Georgetown University School of Foreign Service in Qatar	Washington DC, USA	2005	Education City
Qatar Faculty of Islamic Studies	Qatar	2007	Education City
University of Calgary – Qatar	Alberta, Canada	2007	Muraykh
Northwestern University in Qatar	Illinois, USA	2008	Education City
Community College of Qatar	Cooperation with Houston Community College (Texas, USA)	2010	West Bay & C-Ring Road
HEC Paris in Qatar	France	2010	Education City
University College London (UCL Qatar)	United Kingdom	2012	Education City
Hamad bin Khalifa University (HBKU)	Qatar	2012	Education City

Sources: Crist (2013a); HEI websites accessed February 2013.

technology park and a major research and teaching hospital (Sidra Medical and Research Center) have been established as foundations for cutting-edge science to build bridges between institutions of science, business, and medicine.² The challenge for the future is to provide the necessary communication, exchange, and symbiotic relationships between these to establish a well-functioning scientific environment in the fields identified as most significant for the future wealth and well-being of society.

Originally, the well-resourced Qatar Foundation attempted to invite one full research university to the peninsula, only later switching to the idea of targeting a range of HEIs with particular disciplinary expertise and reputation that meld well with Qatari national interests (Phan, 2010, p. 34). Especially over the past decade, Qatar has succeeded, in particular via its first-mover advantage in the Gulf, to recruit highly prestigious international branches of major Western universities to its burgeoning Education City campus (Kane, 2013; Willoughby, 2008). Crucially, Qatar Foundation has developed strategic plans to select HEIs with specific, internationally recognized profiles, and curricula in particular fields viewed as important and relevant for Qatar in its quest to develop a knowledge-based economy (Knight, 2013, p. 188).

Could this combination of strategies in higher education internationalization provide Qatar a "comparative institutional advantage" (Graf, 2009; Hall & Soskice, 2001) within the Gulf region or are the challenges of sustainability in the context of ongoing educational borrowing and import too great? To address this question, we compare the various organizational forms currently operating on the peninsula: IBCs of leading Western universities, Qatar's national university, and further HEIs, such as the Community College of Qatar. Efforts to erect a science and technology park and the founding of the HBKU adjacent to and linking the IBCs of Education City are further activities in capacity building. These developments must be understood within the context of increased investments in higher education and scientific capacity throughout the Gulf region (Royal Society, 2010). While capital dedicated in many countries has been considerable, such as in Saudi Arabia (50 universities) and Qatar, these investments have been oriented mainly to Western models without sustained reflection on and tackling all of the contextual conditions needed to implement - and sustain - them. Issues here include the challenge of social and spatial accessibility of higher education (especially for members of migrant families and students with disabilities), the gender segregation and mismatch of participation in higher education (majority female) in contrast to that of the labor market (majority male), and the tenuous roles assumed and fixed-term contracts provided to foreign-born researchers.

Often in media reports as well as in the meager academic literature, only one part of the organizational field of higher education in Qatar is discussed. However, the mainly North American IBCs located in Qatar Foundation's Education City and Qatar University (QU) itself, along with several other sites, represent different pathways to secure the future of higher education, science productivity, and societal and economic

development in Qatar. Indeed, we argue that analyses of higher education and research and development in Qatar must examine these key strategies jointly, for they are two halves of a rapidly growing whole. Thus, the Qatari higher education system must be examined holistically to explore the implications of these two parallel strategies of import and transfer as well as of genesis and indigenous growth; in short, of taking root and growing branches. Finally, Qatar's higher education system development must be viewed in the context of the other Gulf countries, as these too increase and broaden their investment in higher learning and knowledge production via university institutionalization.

A National University Taking Root: Qatar University (Established 1973)

Qatar University (QU) was first established in 1973 as a college of education. It clearly reflects national priorities and is set to facilitate their attainment. If the vision is to serve national needs, the mission statement emphasizes that QU is "the national institution of higher education in Qatar. It provides high quality undergraduate and graduate programs that prepare competent graduates, destined to shape the future of Qatar. The university community ... contribute[s] actively to the needs and aspirations of society" (Moini et al., 2009, p. 75). Furthermore, QU seeks to "promote the cultural and scientific development of the Qatari society while preserving its Arabic characteristics and maintaining its Islamic cultural heritage The University shall provide the country with specialists, technicians, and experts in various fields, and equip citizens with knowledge and advanced research methodologies" (Moini et al., 2009, p. 75). While crucial to remember that education in Qatar has only been formalized beginning in the 1950s, with the state replacing within-family instruction, this development is being cemented with tremendous investments - US\$ 4 billion was spent on education and science in 2008 alone (Fromherz, 2012, p. 152). "Oatar has set the bar high with its goal of becoming a knowledgeproducing economy at record speed. But the country holds some strong cards: a clear vision, highly committed leadership, and abundant resources to devote to the cause" (Rubin, 2012, p. 4). While QU has long been considered among the better universities in the Middle East, the recent reforms have counteracted what many viewed as deteriorating performance (Moini et al., 2009). Long-term initiatives, such as the Qatar National Vision 2030, have reinvigorated QU, as it represents a pillar of national development. Indeed, the post-reform vision is that Qatar University "seeks to be a

model national university that offers a high quality, learning-centered education."³

Now governed by the SEC, the university was originally controlled by a state administration with little autonomy due to considerable ministerial oversight and control. Today, the Emir is the "Supreme Head" of the University, with President Prof. Sheikha Al-Misnad, PhD, responsible for the curricular and organizational transformation of QU into a leading university in the Arab world. Yet, both academic and organizational freedom and self-governance remain partial; the university is not led democratically, perhaps especially challenging for small states with one national flagship, such as Qatar of Luxembourg (see Powell, 2012). Recognizing some discordance with global academic norms, reform initiatives aim to strengthen those dimensions and standards to which most world-class universities conform.

In both country and university, Arabic and English are the two key languages, although this duality is contentious. In early 2012, the decision of the SEC to switch some disciplines' language of instruction from English to Arabic was accompanied by controversy that reflected fears among some groups that younger Qataris may be neglecting their heritage and Arabic language skills in favor of the necessity of English for global communication and knowledge transfer (Harron, 2012). The debate about the language of instruction emphasizes the continuous challenge of serving different groups and aiming to place graduates in labor markets at home and abroad.

The university, emphasizing undergraduate teaching in particular, had 8,706 students in 2009/10, with 38% being Qatari nationals and three-quarters women. Students of Qatari origin study tuition-free. Students are taught by a large group of 653 faculty (all ranks), with non-Qataris (70%) on one-year contracts and tenure held by Qatari faculty members (30%) (QU, 2010); thus the teaching staff is highly stratified by origin. QU's structure reflects language divisions, consisting of Colleges in Education (Arabic); Humanities and Social Sciences (Arabic); Science (English); Sharia, Law, and Islamic Studies (Arabic); Engineering (English); and Business and Economics (English). Given its department of computing and engineering, solid ICT infrastructure is provided. Addressing the needs of its community has been a hallmark of an institution located in a society experiencing massive demographic and economic change.

In terms of resources, Qatar has chosen to use its wealth to rapidly develop its education system — and to fund scientific research with 2.8% of GDP. In part to enhance QU's competitiveness given the rising competition in the Gulf region, since 2003 the university has enjoyed considerable

government funding as part of the country's major development program. In 2009/10, the research funding for QU amounted to US\$ 60 million (OU, 2011). The university sets out to improve its teaching and research by recruiting researchers globally. The internationalization of all status groups is the rule due to the extraordinarily diverse population of the country, although inequalities persist; for example, only Qataris can study at QU free-of-charge. Attracting a talented undergraduate student body is difficult because traditionally the brightest students, especially Qatari sons, have gone abroad for their studies. The large majority of female students at OU results from their higher probability of seeking higher educational opportunities close-to-home. Gender is a major cleavage that leads to pervasive inequalities in social status and individual liberty. With a focus on undergraduate teaching, it is clearly focused on the local and national levels and labor markets. Recent significant reforms have transformed and expanded the university. Thus, QU complements, but also increasingly competes with, the exclusive offerings of the newer university branch campuses at Education City.

International Universities Branching Out: Education City (Established 1998)

The 2,500-acre campus at Education City, funded and developed by the immensely influential and wide-ranging Qatar Foundation, hosts diverse education and research organizations, attracting Western universities to establish IBCs there (Lane & Kinser, 2011; see Table 1). Generous funding from the national government, with large portions funneled through Qatar Foundation, provides excellent facilities. As of 2012, the following universities operate there, bringing expertise in targeted fields considered relevant for local and national interests: Carnegie-Mellon (computer science), Georgetown (foreign affairs), HEC Paris (business), Northwestern (journalism), Texas A&M (engineering), University College London (museum studies), Virginia Commonwealth (design), and Weill-Cornell (medicine) (see Kane, 2013). Evidently, it is primarily the American model of higher education that has most direct influence in Qatar, from the community college to the research university, exemplified by the Community College of Qatar, Qatar University, and the half-dozen US-based IBCs that have established themselves at Education City. These institutions draw the elite of Qatari students who seek "the gold standard" in tertiary education (Lewin, 2008). These institutions bring their own principles, personnel, and "student

cultures" (Wood, 2011), even as they contribute their homegrown reputations to Qatar. Around half of all students on campus come from the region or farther afield, a key factor in mondialisation.

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The state invests in the establishment and development (particularly from 2003) of its own national HEIs, embodied not only in the above-discussed Qatar University, but also, most recently, in plans for the HBKU located within Education City. The HBKU represents a distinctive strategy to create a full university. Its programs will focus on interdisciplinary graduate colleges across the sciences and integrate the Qatar Faculty of Islamic Studies (www.hbku.edu.qa). Further, the vision is for it to develop into an umbrella for the diverse discipline-specific IBCs, as it aims to facilitate scientific synergies and networking opportunities for all scholars, staff, and students based at Education City (see Phan, 2010, p. 34f; Crist, 2013a, 2013b).

The two key locations of HEIs in Qatar's capital city Doha are at West Bay and in Education City, both at some remove from the central business district. The city boasts dozens of skyscrapers shooting up along the waters of the Gulf. Questions of sustainability are particularly trenchant in a desert biome on a peninsula surrounded by the Gulf. The construction industry thus far has not embraced sustainable design and green architecture, nor is the migrant labor force provided with fitting working and living conditions for the speed and scale of growth, especially in a tropical desert climate. This is all the more suprising given the country's tremendous wealth based on its vast petroleum resources. Its inhabitants have by far the highest carbon dioxide emissions per person in the world, exacerbated by freely provided utilities and the highest water usage per capita worldwide - although Qatar must use intensive desalination to ensure that precious water supply (UNDP, 2011, p. 3). Indeed, among the "Grand Challenges" identified by the Qatar Foundation for focused scientific attention in the coming years are water desalination; solar energy solutions; sustainable food supply, urbanization, and mobility; education and human development; health management; and the support of Arabic culture, history, the arts and media, and language. All of these issues require and benefit from scientific enquiry. However, they need to be systematically integrated and this requires more connections between all HEIs in Qatar and interactions among scholars, staff, and students. Stepping inside one of the campus buildings, the visitor might well feel transported to Pittsburgh, Richmond, or Washington. The HBKU, with its student center, cafeteria, and other social gathering spaces, is needed to enhance the academic community and provide opportunities for connection. Similarly, the Qatar National Library, under construction in Education City, will provide a crucial space for dialogue and encourage and require more mobility on campus. The interactions in Education City are multicultural; the context of Education City is a *bricolage* of many places — exemplying both glocalization and mondialisation.

CONCLUSIONS IN CONTEXT

While higher education expansion and scientific capacity building continue apace in Qatar, these developments are accompanied by a number of persistent challenges. Within a region rediscovering after centuries the tremendous impact science can have, the foundings of national government-sponsored HEIs and dozens of international offshore, satellite, or branch campuses have transformed the context for higher education and science. In many countries of the Middle East, higher education has grown much faster, for the most part, than in Western Europe, North America, or even much of Asia. Within a few decades, Qatari education, economy, and society have radically expanded, bringing both dilemmas and opportunities. The chosen strategy to differentiate higher education responds more adequately to the myriad trials of language, labor market, and climate, as it provides a superior, more dynamic environment for higher education. That said, networks and knowledge acquired through the importation of talent require integration and demand an indigenous infrastructure and organizational capacity that cannot be established overnight. If IBCs bring their own academic cultures with them, these need to be adapted, not solely to Qatar, but also to the pluricultural and multilingual environment of Education City, where diverse universities and scientists from across the complete range of disciplines contribute their expertise. Further adjustments between the local initiatives to strengthen Qatar University and the goals of the family-led state as well as the diverse IBCs of Education City are required, and such processes take years. Contemporary cleavages are evident as the organizational field expands and differentiates, which makes integration initiatives like HBKU crucial. Yet despite these challenges, the compressed development exhibited at QU and in Education City is remarkable. It demonstrates the power of both the original model of the research university, first institutionalized in Germany two centuries ago, and the more recent "emerging global model" of the "super research

university" at the heart of the knowledge society in construction worldwide (Baker, in press; Mohrman et al., 2008).

While most of the Arabian Gulf countries have been investing heavily in capacity building, their organizational fields of higher education and science are still fledgling. Average research and development spending across the 57 member states of the Organisation of Islamic Cooperation (OIC) remains very low (Nour, 2011; Royal Society, 2010). Ambitiously, Qatar has taken a two-pronged approach of growing its own international university, while enticing select Western HEIs to bring their know-how and long-established reputations to the peninsula. Although most of the Gulf countries continue to experience significant economic prosperity that provides leaders with opportunities to construct some of the newest and most impressive university campuses anywhere, the question remains whether international collaborations and IBCs or rather considerable investments in national universities (with gradual building of reputations) will have the most impact – and prove to be the more successful and sustainable strategy for these demographically volatile and ethnically hyperdiverse societies.

On the one hand, higher education reflects "glocalization" as global principles, such as the nexus of research and teaching, have been accepted and emulated, but also adapted to fit the particular social, political, and religious environment - and an extreme climate. This process of institutionalization likewise represents mondialisation in that not solely Education City, but indeed the entire country becomes a world territory as it operates as an ascendant node in transnational higher education and science, situated between Orient and Occident. Qatar, oriented toward the top, partially exemplifies the emerging global model, especially through the connectivity, inspiration, and knowledge gained by the presence of people from other cultures and all regions of the world. On the other hand, it provides a dynamic context for higher education that continues to rely significantly on importing knowledge and expertise from afar, currently without the necessary local capacity and culture to sustain it. The extent of educational borrowing in Qatar is intense and it remains to be seen how long the heavy branches will hold as the roots take time to spread. The jury is still out whether the major recent investments will allow Qatar to compress, or indeed leapfrog, over a number of developmental stages - organizational, institutional, and societal – to establish a sustainable higher education system that could, in future, replace the natural resource-based economy. If Qatar succeeds, it will indeed provide a model for other Gulf countries and beyond.

NOTES

- 1. http://www.qsa.gov.qa/QatarCensus/Population/PDF/1_1.pdf, retrieved February 2, 2013.
- 2. As Her Highness Sheikha Moza bint Nasser Al-Missned explains, "Education City was born of the concept that education is the key to a nation's future. Qatar has been blessed with many natural resources, but none as vital as our people. The universities and projects that populate Education City are therefore essential building blocks for us. We have brought to Qatar leading degree programs in engineering, business administration, computer science, design, foreign service, and medicine all disciplines that are critical to our ability to sustain the many advances we are making. And there are more universities to come. The addition of Sidra Medical and Research Center to Education City is perhaps our most ambitious and far-reaching project to date" (http://www.sidra.org/en/Pages/index/47/about/message-from-her-highness, retrieved March 14, 2013).
 - 3. www.qu.edu.qa/theuniversity/reformproject/vision.php

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STRATEGICALLY PLANNING THE SHIFT TO A GULF KNOWLEDGE SOCIETY: THE ROLE OF BIG DATA AND MASS EDUCATION

Alexander W. Wiseman

ABSTRACT

The development of a knowledge society in the Arabian Gulf is a nested and contextualized process that relies upon the development of nation-specific knowledge economies and region-wide knowledge cultures. The role of internationally comparative education data and mass education systems in the Gulf as mechanisms for the development of knowledge economies, societies, and cultures are discussed and debated in relation to the unique contextual conditions countries operate within. The role of "big" data and mass education in creating expectations for achievement, accountability, and access is shown to significantly contribute to the development of knowledge societies by providing the infrastructure and capacity for sustainable change, which potentially leads to the

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