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### Teaching Entrepreneurship: The Role of Liberal Arts Institutions

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# Teaching Entrepreneurship: The Role of Liberal Arts Institutions

*Mourad Dakhli*

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## ABSTRACT

*Entrepreneurship has been recognized as one of the most effective engines for sustainable economic growth and development. To be an entrepreneur requires certain individual attributes that go beyond mastering the managerial and financial tools necessary for running a business. Unfortunately, whether as a stand-alone course or as a complete program of study, entrepreneurship has in general been placed under the management or business programs at many leading educational institutions in the U.S. and other countries. Furthermore, the structure and content of entrepreneurship programs have in general been transposed into other regions including the MENA countries without any significant adaptation to the local socio-cultural and economic environment.*

*In this paper, it is argued that liberal arts institutions are uniquely positioned to develop and implement a holistic, multifunctional approach in teaching entrepreneurship, and in developing and implementing context-specific entrepreneurship programs that build on student motivation, community engagement, as well as local and global institutional networks.*

*We survey the structure of entrepreneurship programs in a number of U.S. and Middle Eastern countries, and propose ways in which liberal arts institutions in the region can leverage their unique mission and roles in developing human capital for the purpose of furthering entrepreneurship education and subsequently entrepreneurship-driven socio-economic development.*

## INTRODUCTION

Teaching entrepreneurship has been gaining a great deal of attention in many colleges and universities. This growing importance is to a large part driven by the fact that entrepreneurship has been recognized as one of the major drivers for innovation and economic development (Dakhli and DeClercq, 2004; Leff, 1979). As a topic of study, entrepreneurship education is traditionally offered as a stand-alone course(s), or quite often as one of the concentration in undergraduate or graduate education along with the other business functional areas (Edelman, Manolova, & Brush, 2008).

In this paper, I argue that entrepreneurship education requires a radically more holistic and innovative approach. More than any other area of study, entrepreneurship requires the development of a set of skills, a unique mindset, and a strong grounding in the local institutional context. This argument mirrors the fact that entrepreneurship itself has been shown to be embedded in the local institutional setting, and its development and affect on the socio-economic environment is subject to the macro-level factors associated with the context (Baker, Gedajlovic, & Lubatkin, 2005; Shane, 1992; Danis, DeClerq, & Dakhli, 2007). This, in addition to the fact that entrepreneurship is truly a multidisciplinary subject (Navarro, 2008), liberal arts institutions are uniquely positioned to lead the way in developing a more balanced approach to developing entrepreneurial spirit, initiative, and activities within the appropriate parameters of the institutional context.

This paper is organized as follows. First, a brief survey of the institutional profile for entrepreneurship is provided. I build on the work of Scott (2002) and Busenitz, Gomez and Spencer (2000) to outline the institutional variables that affect entrepreneurship. Second, I survey entrepreneurship education at leading educational institutions in the Middle East and North Africa region (MENA) and compare the trends with those found at top North American institutions. Finally, I propose ways in which best practices in entrepreneurship education can be transferred and adapted to the local institutional and cultural context of the MENA region.

## LITERATURE REVIEW

A country's institutional environment is comprised of rules, cognitive structures, and social norms that guide and constrain human interaction (North, 1990; Scott, 2001). There has been extensive work on institutional theory that dates back to the late Nineteenth Century (see Scott (2001) for a full review of the development of institutional thought). Based on this body of work, Kostova and Roth (2002) introduced the concept of a country's institutional profile, defined as the 'issue-specific set of regulatory, cognitive, and normative institutions,' which provide a framework for human interaction in a given country.

Subsequent work in the area has specifically addressed the concept of institutional profile in the area of entrepreneurship (Busenitz, Gomez and Spencer, 2000).

I provide a survey of key entrepreneurship programs and use the country institutional profile concept to explore the degree to which transfer of practices in the area of entrepreneurship education should be adapted. First, the regulatory component of a country's institutional profile comprises the laws, regulations and government policies that might favor, or disfavor, entrepreneurial activity. This includes property rights laws, financing laws, and regulations applicable for starting a new business venture (Baumol, 1990; Claessens and Laeven, 2003). Government policies are an important dimension of the regulatory profile as it directly affects the level of available support for entrepreneurial ventures and impact their ability to acquire resources (Spencer and Gomez, 2004). Conversely, uncertain or inconsistent government policies toward the private sector may prevent entrepreneurs from crafting long-term strategies (Tan, 1996). The regulatory profile represents the entirety of the set of laws and regulations that define the rule of the game for both public and private enterprise. Significant differences exist among countries along these dimensions (Kostova and Roth, 2002). The institutional profile develops over a long period of time and is the result of a wide array of social, cultural, historical and other factors (Scott, 2001).

The regulatory dimension of the institutional profile is an important factor for entrepreneurship, and as such an important factor for entrepreneurship education. It is thus normal to expect the nature of entrepreneurship education to vary according to the factors that affect the regulatory dimension. Political system, transparency, activism, governance and the like would be expected to significantly affect how entrepreneurs acquire resources and put them to use (DeClerq and Dakhli, 2008).

Second, the cognitive component of a country's institutional profile reflects widely shared social knowledge and cognitive categories used by people to interpret a particular phenomenon, and are especially relevant to the context of education (Kostova and Roth, 2002). In the specific context of entrepreneurship education, this dimension comprises knowledge and skills about how to establish and operate new businesses (Busenitz, Gomez and Spencer, 2000). In some countries, especially in the United States, knowledge about how to establish a new firm might be well developed and widely dispersed (Spencer and Gomez, 2004). This is often the case in developed market economies, which tend to share relatively stable political and economic systems that have fostered and promoted private sector development and entrepreneurial skill-acquisition over decades or centuries (Hoskisson, Eden, Lau, & Wright, 2000). In contrast, across many countries, there may be more variation with respect to how knowledge about entrepreneurship is made available and processed. For instance, countries in the MENA region have in general large public sectors with significant government intervention in the economy. Private sector entrepreneurial activity is not actively encouraged, and the public sector tends to drain the economy out of a large portion of the local human capital (Barber, Mourshed, & Whelan, 2007). Furthermore, countries may also differ with respect to their cognitive institutional profile based on the availability of reliable market information, small business development programs, and financial infrastructure targeted at entrepreneurs (Spencer and Gomez, 2004). These differences, in turn, call for adapted approaches to entrepreneurship education where cognitive profiles differ. One would expect the structure and content of entrepreneurship programs to reflect the level of cognitive development in a given country, and to support a context-specific cognitive development.

Finally, the normative component of a country's institutional profile reflects the 'values, beliefs, norms and assumptions about human behavior held by the individuals in a given country' (Kostova and Roth, 2002), and emphasizes social obligation as the basis for shaping and constraining human interaction (Scott, 2001). The normative dimension is in fact a slightly different conceptualization of the value-based definitions of culture. Similar to cultural norms and values, normative prescriptions impose constraints on social behavior while at the same time empowering and enabling social action. In the context of entrepreneurship and entrepreneurship education, the normative dimension of a country's institutional profile pertains to the extent to which societal values, beliefs, and norms are supportive of entrepreneurs and creative, innovative behaviors in a business context (Busenitz, et al., 2000). In many advanced market economies, people tend to view entrepreneurs in positive terms, in that entrepreneurs are often perceived as innovators whose activities provide the 'indispensable driving force' that empowers capitalist economic growth (Livesay, 1982). In contrast, in many MENA region countries, and especially those of the GCC, starting a new venture is often not seen as the "best" alternative, and secure, high-paying government employment tends to be the choice for many young university graduates (Barber, Mourshed, & Whelan, 2007).

In summary, the concept of institutional profile provides a solid framework through which country-level differences can be illustrated. Previous work on the regulatory, cognitive, and normative dimensions of a country's institutional profile, and their application to the area of entrepreneurship provide insight into the applicability of these construct to entrepreneurship education across different countries and regions. A review of leading entrepreneurship programs shows that the United

States remains the leader in the area. Consequently, the American model of entrepreneurship education has been the main sources for program development across the world. I focus on the MENA region, and use differences in the institutional profiles between the United States and MENA area to suggest ways to adapt and improve entrepreneurship education in MENA higher education institutions.

## **METHODOLOGY AND DISCUSSION**

In order to gain a better understanding of the state of teaching entrepreneurship in the MENA region, we survey the structure and content of entrepreneurship programs at leading educational institutions in the U.S. and the MENA region. The main objective is to complete a survey of entrepreneurship education practices and to develop guidelines for transfer of best practices to the MENA region. Our list is partially-compiled from the annual (Business Week, 2006) ranking of higher education institutions in the United States.

We survey the following three groups. These are 1. the leading ten universities in the United States, 2. the top ten liberal arts institutions in the United States, and 3. the most prominent English-language universities in the region (Appendix 1). Our choice of these three groups is based on the following. First, we believe that educational institutions in the United States have led the way in the area of entrepreneurship programs and education. The U.S. itself is recognized as a leading economy with high levels of entrepreneurial initiatives and activity (Shane, 1992). We also survey leading English-language universities in the MENA region to identify best practices and also weaknesses in the area of entrepreneurship education. More importantly, our choice to survey a number of liberal arts institutions is driven by the need to assess what role entrepreneurship education plays within such institutions, and if education and entrepreneurship programs here are different from other main stream institutions. In addition, a number of educational researchers have outlined the shortcomings of adopting purely functional methods to business education and have called for a more holistic approach (Navarro, 2008). Liberal arts institutions with their balanced curriculum, and focus on both cognitive and affective dimension of learning, can be better positioned to offer a more innovative, comprehensive, and context-relevant entrepreneurship programs.

As Appendix 1 shows, there is a great variance in the way entrepreneurship is included in the curriculum. This ranges from a complete absence of the subject to highly-developed undergraduate and graduate programs that include extensive course offering, strong academic-business partnerships, and solid practical and theoretical research streams.

The focus of current entrepreneurship programs can also be assessed by surveying the entrepreneurship textbooks that are most commonly used (Appendix 2). Edelman, Manolova and Brish (2008) provide an appraisal of the main entrepreneurship textbooks used around the world. A few conclusions can be made based on Appendix 2. First, the leading textbooks are American authored and published reflecting the role American universities play in the area of entrepreneurship education. New venture creation processes and start-up activities tend to be the focus of most books. The individual is generally the focus of these books. This reflects to a large degree the individual-level focus of most business programs in the United States. This fact is related to the high level of individualism in the American society (Hofstede, 1991). There is also an emphasis on the practical aspects of new venture establishment and growth. This pragmatic and direct approach is also a reflection of the low context nature of American culture.

Needless to say, knowledge generation and trend-setting in the area of entrepreneurship education has been and is still to a large extent dominated by the American approach to the subject. The nature of entrepreneurship education, including textbooks used to teach the subject is a reflection of the values and norms that characterize the American society (Hofstede, 1991; Triandis, 2005).

## **RECOMMENDATIONS FOR TRANSFER OF BEST PRACTICES IN ENTREPRENEURSHIP EDUCATION**

There is no question that innovative and successful templates can be found in assessing the American model in developing and implementing entrepreneurship programs at higher education institutions. One of these should be based on adopting a more holistic, liberal arts approach in recognition of the many political, socio-cultural, and historical factors that underlie entrepreneurship, and in turn, should underlie entrepreneurship education.

There is also a true need of knowledge generation in the area of entrepreneurship education and research. While this issue is not limited to the area of entrepreneurship, it is unfortunately noted that no textbook exist that focus on venture creation

in the MENA region (World Bank MENA Development Report, 2008). The regulatory, cognitive and normative aspects associated with entrepreneurship are associated with the American model. Consequently, the transferability and relevance of such models may be limited.

## CONCLUSION AND IMPLICATIONS

In their study about entrepreneurship education, Edelman et al. (2008) found a lack of correspondence between education and practice. Nonetheless, these authors argue that textbooks are typically used as guides, and that good instructors often augment books with their own experiences and examples. I believe that this point can be further developed for the context of this paper. I argue that while most of the research and instructional material on entrepreneurship are developed in the United States, qualified faculty need to play an active role in adapting the material to the local contexts through conscience and continuous use of context-relevant material and supplements. These can be in the form of examples, articles, case studies, guest speakers, field trip, and the like in order to adapt the U.S.-centric knowledge to the MENA institutional profile. This is especially critical with respect to the regulatory dimension of the institutional profile. The laws and regulations that sanction new venture creation, and business in general, in the MENA region are significantly different from those in the U.S. As such, developing models of entrepreneurship education that take into account the local regulatory context can be more effective as drivers for greater entrepreneurial undertaking.

The critical role of local “role models” is something that needs to be recognized. Role models provide guidance, and act as examples for others to follow. The normative dimension of entrepreneurship education can substantially be addressed by strengthening the positive views, perceptions, and attitudes associated with entrepreneurship. Universities can build partnerships with leading individuals and associations that can provide context-specific standards for reference with regards to entrepreneurship. Creative programs for associating undergraduate and graduate students of entrepreneurship with successful and respected entrepreneurs can go a long way in raising the status of entrepreneurship as a field of study and a career option.

I have presented the MENA area as a uniform region and discussed the countries as a single group. However, it is important to recognize the intra-regional differences with regards to institutional profiles of the countries included. In fact, there are important economic and regulatory differences as shown in the 2002 Economic Freedom Index and the 2006 Corruption Perception Index (Appendix 3). There are also significant differences in educational attainment among MENA countries as shown by the differences in the scores of the various countries on standardized test results (Appendix 4). Nonetheless, the region shares a common language, heritage, and culture. More importantly, the region shares many of the shortcomings associated with educational systems as described in the World Bank’s 2008 MENA Development Report that offered a critical view of the state of education in the MENA region.

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**Appendix 1. Survey of Entrepreneurship Programs at selected American and Regional Higher Education Institutions.**

Top 10 Universities	Graduate Programs	Undergraduate Programs	Notes & Remarks
<b>Entrepreneurship (USA)</b>			
<b>1) Babson College</b>	“Entrepreneurship as the epicenter of the school’s pedagogy with the adoption of a holistic and integrated core curriculum for full-time students. The program traces the new venture creation cycle and introduces traditional business principles within the context of entrepreneurial thought.”.... Entrepreneurship Intensity Track (ETI) was developed in 2000. This is a customized elective curriculum which is designed for students committed to starting a high-potential venture while completing their MBA.	Second year undergrad students have the option of enrolling in an “Accelerated Curriculum for Entrepreneurship” a yearlong program that addresses the fundamentals of entrepreneurship. The course titles and descriptions are outlined at <a href="http://www3.babson.edu/ESHIP/academic/undergrad/ugcoursedescriptions.cfm">http://www3.babson.edu/ESHIP/academic/undergrad/ugcoursedescriptions.cfm</a>	This is the leading American Institution in the area of Entrepreneurship Education and Research. The Annual Babson Entrepreneurship Conference is the leading forum where advances in Entrepreneurship programs and research are presented.
<b>2) Stanford University</b>	Practical, technically focused <a href="http://spric.stanford.edu/">http://spric.stanford.edu/</a>  <a href="http://www.gsb.stanford.edu/exed/epse/">http://www.gsb.stanford.edu/exed/epse/</a>	No undergraduate program in Entrepreneurship, but specific courses are offered.	
<b>3) University of Pennsylvania</b>	The school offers an “Entrepreneurial Management” major that is presented as a program that provides MBA students with the analytical tools and experiences to prepare them for careers that leverage their “entrepreneurial mindset,” <a href="http://www.wharton.upenn.edu/whartonfacts/entrepreneurship/">http://www.wharton.upenn.edu/whartonfacts/entrepreneurship/</a>	Entrepreneurship is offered as second concentration under the label: “Entrepreneurship and Innovation.” The concentration is focused on new venture in technology intensive industries.	A strong program, using multiple perspectives to develop the ‘entrepreneurship mindset.’
<b>4) Harvard University</b>	“Incubator of ideas” Must take course for all MBA students: The Entrepreneurial Manager This course addresses the issues faced by managers who wish to turn opportunity into viable organizations that create value, and empowers students to develop their own approaches, guidelines, and skills for being entrepreneurial managers.	No undergraduate program in Entrepreneurship.	
<b>5) MIT</b>	Two programs that concern entrepreneurship: Entrepreneurship and Innovation and Global Entrepreneurship. Both focus greatly on the technology aspect of the discipline. <a href="http://www.hbs.edu/entrepreneurship/">http://www.hbs.edu/entrepreneurship/</a>	Separate courses covering different area of entrepreneurship are offered	
<b>6) University of Southern California</b>	Entrepreneurship concentration is offered	Linking entrepreneurship undergrad students with mentors and is what makes USC standout from the others. <a href="http://marshall.usc.edu/greif/">http://marshall.usc.edu/greif/</a>	

7) Northwestern University	Offers a Technical Entrepreneurship program which is focused on the opportunities and challenges associated with starting a technology venture. The school site states that “The single greatest wealth creator of our generation and of every generation before us has been technology.” <a href="http://www.cei.northwestern.edu/curriculum/">http://www.cei.northwestern.edu/curriculum/</a>	“IEMS 325 Engineering Entrepreneurship. The goal of the course is to provide you with an understanding of the environment of the entrepreneur. At the same time we will look at the concept of intrapreneuring (the entrepreneur inside the corporation).	Technology-focused & New-business start-up directed.
8) University of Michigan	No graduate program in Entrepreneurship	“The College of Engineering has built an entrepreneurship curriculum that integrates education in technology, business, government and culture.” <a href="http://cfe.engin.umich.edu/academics">http://cfe.engin.umich.edu/academics</a>	Technology-focused.
9) University of Texas	Entrepreneurship is classified as an interdisciplinary program <a href="http://mba.mcombs.utexas.edu/students/academics/special/specmgent.asp">http://mba.mcombs.utexas.edu/students/academics/special/specmgent.asp</a>		One of the few interdisciplinary programs in Entrepreneurship.
10) University of California-Berkeley	<a href="http://mba.haas.berkeley.edu/specialties_02.html">http://mba.haas.berkeley.edu/specialties_02.html</a> . Their entrepreneurship center attempts to merge all disciplines.		
<b>Liberal Arts (U.S.A.)</b>			
1) Williams College	Non-Academic: <a href="http://www.williams.edu/resources/commservice/index.php?id=3">http://www.williams.edu/resources/commservice/index.php?id=3</a>		
2) Amherst College			
3) Swarthmore College	For Alumni, Non-Academic <a href="http://www.swarthmore.edu/lax/index.php">http://www.swarthmore.edu/lax/index.php</a>		
4) Wellesley College			
5) Middlebury College			
6) Carleton College	Non-Academic, program with businesses. <a href="http://apps.carleton.edu/news/features/?story_id=131048">http://apps.carleton.edu/news/features/?story_id=131048</a>		
7) Bowdoin College			
8) Pomona College			
9) Haverford College	<a href="http://cdoapps.haverford.edu/resources/blog/">http://cdoapps.haverford.edu/resources/blog/</a>		
10) Davidson College			
<b>MENA Region</b>			
1) American University - Sharjah	The school offers a set of Entrepreneurship courses within the MBA program <a href="http://www.aus.edu/search/results.php?q=Entrepreneurship&amp;cx=004386407101174383583%3Aagxov3axdgg&amp;cof=FORID%3A11&amp;sa=Search#998">http://www.aus.edu/search/results.php?q=Entrepreneurship&amp;cx=004386407101174383583%3Aagxov3axdgg&amp;cof=FORID%3A11&amp;sa=Search#998</a>		



2) American University of Beirut	<p>Concentrations in the MM&amp;E (Management, Marketing and Entrepreneurship) Track: Management and Marketing directed at entrepreneurship</p> <p>The track offers two concentrations: (1) General Management and (2) Marketing.  <a href="http://sb-lb.aub.edu.lb/student/concentrations-bba.asp">http://sb-lb.aub.edu.lb/student/concentrations-bba.asp</a></p>		
3) American University of Cairo			
4) American Lebanese University			
5) Kuwait University			
6) Zayed University	<p>The university offers an MS degree in innovation and entrepreneurship.  <a href="http://www.zu.ac.ae/msie">http://www.zu.ac.ae/msie</a></p>		
7) Lebanese American University	<p><a href="http://www.lau.edu.lb/centers-institutes/ifeb/about.html">http://www.lau.edu.lb/centers-institutes/ifeb/about.html</a></p> <p>The Institute's vision is to be a valuable resource center and the leader in the family business activities in Lebanon and the Middle East</p>		
8) University of Qatar			
9) American University of Kuwait (AUK)	No graduate programs	Limited Entrepreneurship courses offered to Undergraduate business majors	

## Appendix 2. Main Textbooks Used in Teaching Entrepreneurship

Entrepreneurship Textbooks and Textbook Objectives

Textbook	Author	Publisher	Textbook Objectives
<i>Growing &amp; Managing an Entrepreneurial Business</i> , 1999 <sup>a</sup>	Allen, K. R.	Houghton Mifflin and Company	The key issues in this book revolve around the customer, the product/service, the process, the organization and leadership (p. xx).
<i>Launching New Ventures: An Entrepreneurial Approach</i> , 3rd, 2003 <sup>b</sup>	Allen, K. R.	Houghton Mifflin and Company	<i>Launching New Ventures</i> is organized around the process of creating new ventures, from recognition of an opportunity to launch of the business (p. xv).
<i>Entrepreneurship: A Process Perspective</i> , 2005 <sup>a</sup>	Baron, R. A., & Shane, S. A.	Thompson: South-Western	Our guiding principle when writing this book is that entrepreneurship is a process which unfolds through several distinct phases (p. ix).
<i>The Guru Guide to Entrepreneurship</i> , 2001	Boyett, J. H., & Boyett, J. T.	John Wiley and Sons	<i>The Guru Guide to Entrepreneurship</i> is a clear, concise, and informative guide to the wisdom of some of the world's most successful entrepreneurs (p. ix).
<i>The Portable MBA in Entrepreneurship</i> , 3rd 2004	Bygrave, W. D., & Zacharakis, A. (Eds.)	John Wiley and Sons	The book is for would-be entrepreneurs, people who have started small firms and others who want to improve their entrepreneurial skills—indeed anyone who wants to get involved in the birth and growth of an enterprise (p. viii).
<i>Entrepreneurship In Action</i> , 2nd, 2003	Coulter, M.	Prentice Hall	<i>Entrepreneurship is Action!</i> conveys the exciting realities of entrepreneurship (p. xvii).
<i>Entrepreneurship: Strategies &amp; Resources</i> , 3rd, 2003 <sup>a</sup>	Dollinger, M. J.	Prentice Hall	<i>Entrepreneurship: Strategies &amp; Resources</i> is organized into three major areas: theories and themes; the environment for entrepreneurship, and the formulation and implementation of entrepreneurial strategy (pp. xix-xxi).
<i>How To Really Start Your Own Business</i> , 2003	Gumpert, D. E.	Lauson Publishing Co.	<i>How to Really Start Your Own Business</i> provides extensive worksheets and lessons so readers can evaluate their own business ideas and plans (p. ix).
<i>Entrepreneurship</i> , 6th, 2005	Hisrich, R. D., Peters, M. P., & Shepherd, D. A.	McGraw-Hill: Irwin	To provide an understanding of the person and process of creating and growing a new venture (p. xix).
<i>Entrepreneurship: Theory, Process and Practice</i> , 6th, 2004 <sup>a</sup>	Kuratko, D. F., & Hodgetts, R. M.	Thompson: Southwestern	To structure and illustrate the discipline of entrepreneurship in a manner that is as unique and creative an entrepreneurship itself (p. xiii).
<i>Entrepreneurial Intensity: Sustainable Advantages for Individuals, Organizations, and Societies</i> , 1998	Morris, M. H.	Quorum Books	Entrepreneurship occurs in varying degrees and amounts and environments can be created in ways that heighten entrepreneurial intensity at all three levels (p. xvii).
<i>The Entrepreneurial Venture</i> , 2nd, 1999	Sahlman, W. A., Stevenson, H. H., Roberts, M. J., & Bhide, A. V. (Eds.)	Harvard Business School Press	The readings assembled here attempt to cover the spectrum of the entrepreneurial experience, from idea generation to harvest (p. 3).
<i>Essentials of Entrepreneurship: What It Takes to Create Successful Enterprises</i> , 2003	TiE: The Indus Entrepreneurs	John Wiley and Sons	The book starts with a perspective on entrepreneurship discussing the attributes of a region or a nation, which foster the spirit of risk taking and economic value creation, and the characteristics of successful entrepreneurs (p. ix).
<i>New Venture Creation: Entrepreneurship for the 21<sup>st</sup> Century</i> , 6th, 2004 <sup>b</sup>	Timmons, J. A., & Spinelli, S. S.	McGraw-Hill: Irwin	<i>New Venture Creation</i> is about the actual process of getting a new venture started, growing the venture, successfully harvesting it (p. xi).

<sup>a</sup> These texts were mentioned at least 3 times in our on-line survey.<sup>b</sup> These texts were mentioned 4 or more times in our on-line survey.

**Appendix 3. Economic Freedom Index for Selected Countries in the MENA Region (The United States and other countries are included for reference purposes)**

<b>COUNTRIES</b>	<b>SUMMARY INDEX</b>	<b>RANK</b>
Hong Kong	8.7	1
Singapore	8.6	2
United States	8.2	3
United Arab Emirates	7.5	16
Kuwait	7.4	18
Oman	7.4	18
Bahrain	7.1	31
Jordan	7.0	36
Tunisia	6.3	68
Egypt	6.2	74
Morocco	5.9	83
Syria	5.4	103
Algeria	4.6	118

**The 2006 Transparency International Corruption Perceptions Index for MENA Region Countries**

<b>COUNTRY RANK</b>	<b>COUNTRY</b>	<b>2006 CPI SCORE</b>
1	Finland	9.6
20	USA	7.3
31	United Arab Emirates	6.2
32	Qatar	6.0
36	Bahrain	5.7
39	Oman	5.4
40	Jordan	5.3
46	Kuwait	4.8
51	Tunisia	4.6
63	Lebanon	3.6
70	Egypt	3.3
70	Saudi Arabia	3.3
79	Morocco	3.2
84	Algeria	3.1
93	Syria	2.9
105	Libya	2.7
111	Yemen	2.6
156	Sudan	2.0
160	Iraq	1.9

Appendix 4. Standardized Math and Science Achievement Scores for Selected Countries \*

■ Participating Gulf Cooperation Council (GCC)<sup>1</sup> state

2003 TIMSS 8th-grade math achievement<sup>2</sup>

Rank	Country	Mean score	Rank	Country	Mean score
1	Singapore	605	24	Serbia	477
2	South Korea	589	25	Bulgaria	475
3	Hong Kong	586	26	Romania	475
4	Chinese Taipei	565		<b>International average</b>	<b>467</b>
5	Japan	570	27	Norway	461
6	Belgium (Flemish)	537	28	Moldova	460
7	Netherlands	536	29	Cyprus	459
8	Estonia	531	30	Macedonia	435
9	Hungary	529	31	Lebanon	433
10	Malaysia	508	32	Jordan	424
11	Latvia	508	33	Iran	411
12	Russia	508	34	Indonesia	411
13	Slovakia	508	35	Tunisia	410
14	Australia	505	36	Egypt	408
15	United States	504	<b>37</b>	<b>Bahrain</b>	<b>401</b>
16	Lithuania	502	38	Palestine	390
17	Sweden	499	39	Chile	387
18	Scotland	498	40	Morocco	387
19	Israel	496	41	Philippines	378
20	New Zealand	494	42	Botswana	366
21	Slovenia	493	<b>43</b>	<b>Saudi Arabia</b>	<b>332</b>
22	Italy	484	44	Ghana	275
23	Armenia	478	45	South Africa	254
				England <sup>3</sup>	496

2003 TIMSS 8th-grade science achievement<sup>2</sup>

Rank	Country	Mean score	Rank	Country	Mean score
1	Singapore	578	24	Bulgaria	479
2	Chinese Taipei	571	25	Jordan	475
2	South Korea	558		<b>International average</b>	<b>474</b>
4	Hong Kong	556	26	Moldova	472
5	Estonia	552	27	Romania	470
6	Japan	552	28	Serbia	468
7	Hungary	543	29	Armenia	461
8	Netherlands	536	30	Iran	453
9	United States	527	31	Macedonia	449
10	Australia	527	32	Cyprus	441
11	Sweden	524	<b>33</b>	<b>Bahrain</b>	<b>438</b>
12	Slovenia	520	34	Palestine	435
13	New Zealand	520	35	Egypt	421
14	Lithuania	519	36	Indonesia	420
15	Slovakia	517	37	Chile	413
16	Belgium (Flemish)	516	38	Tunisia	404
17	Russia	514	<b>39</b>	<b>Saudi Arabia</b>	<b>398</b>
18	Latvia	512	40	Morocco	390
19	Scotland	512	41	Lebanon	393
20	Malaysia	510	42	Philippines	377
21	Norway	494	43	Botswana	365
22	Italy	491	44	Ghana	259
23	Israel	480	45	South Africa	244
				England <sup>3</sup>	544

<sup>1</sup>Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.

<sup>2</sup>TIMSS = Trends in International Mathematics and Science Study, an international examination conducted every 4 years, most recently administered in 2003.

<sup>3</sup>Excluded from ranking because of sampling problems; England and Scotland participated separately in TIMSS in 2003.

Source: TIMSS

• Source: McKensey Quarterly, 2007