The Need for Entrepreneurial Education in Jordan- An Empirical Investigation

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ABSTRACT

Entrepreneurial or entrepreneurship education aims at developing an interdisciplinary mindset and a whole set of opportunity recognition and problem solving skills that go beyond the promotion of startups and business ventures management. Through the Rethinking Education Communication and the Entrepreneurship 2020 Action Plan, the European Commission has explicitly recognized the importance of investing into entrepreneurship education, as a response to the challenges posed to the educational system by globalization, increased international concurrence, and youth unemployment. Jordan also faces these challenges, but substantial and coordinated efforts in entrepreneurial education are still missing.

We believe that entrepreneurial education may represent a way of improving the dramatic situation with youth unemployment, boosting the structurally underdeveloped private sector, and preparing a new generation of youngsters capable of constructively adding to the labor market, by recognizing and exploiting new opportunities in an entre- and intrapreneurial way. The present analysis reviews and elaborates the concept of entrepreneurial education and empirically evaluates the need and potential of entrepreneurial education in Jordan. This is done via a questionnaire study run over a sample of undergraduate students from public universities in Jordan. Results are benchmarked to the findings of a large scale study run over European students in the frame of the ASTEE project (Moberg et al., 2014).

Keywords: Entrepreneurship, Entrepreneurial education, Jordan, Middle East, Youth unemployment, Behavioral economics, Questionnaire study.

INTRODUCTION

The prestigious Academy of Management signaled, among the essential challenges the Middle East is exposed to, the need for supporting entrepreneurship and for modernizing the educational systems, in particular strengthening research capabilities and promoting an effective knowledge transfer between universities, industry, and business (Zahra, 2011). The underlying consideration is hereby that promoting innovation and knowledge creation go hand in hand with modernizing the educational systems. A possible answer to this may be to promote the establishment of entrepreneurial higher education institutions (Zahra, 2011). At the core of entrepreneurial education are the promotion of an entre- and intrapreneurial mindset, the strengthening of individual analytical and research capabilities, and the knowledge transfer between higher education institutions and the industry.

Through the Rethinking Education Communication (European Commission, 2012) and the Entrepreneurship 2020 Action Plan (European Commission, 2013), the European Commission has explicitly recognized the importance of investing into entrepreneurship education

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and into entrepreneurial education institutions. Thus, there is growing attention towards this approach to education, which has been posited as one of the possible ways by which higher education institutions can respond to the *"storms of change"* (Barber et al., 2013) brought about by globalization and by the knowledge economy (Smith, 2002).

Thus, the need for modernizing the educational system is a global issue and should be a main concern for all countries. The case of Jordan is no exception: Jordan is a small resource poor country of the Middle East, with an almost total literacy rate and a large share of university graduates, which is very high also in comparison to several OECD countries (Khasawneh et al., 2008). Still, the country is suffering from high unemployment and, in particular, youth unemployment rates. The fact is aggravated considering that demographic growth is still sustained in Jordan, what is also in tune with the rest of the Arab Middle East.

In the Middle East, there are still, at best of our knowledge, no coordinated efforts in regard to entrepreneurial education. In Jordan, the debate on reforming higher education is flourishing and is very much concerned with meeting the needs of the labor market and promoting knowledge transfer between university and industry. Nevertheless, the concept of entrepreneurial education is still new and extraneous to the main debate, the single very recent, interesting, but still isolated experience discussing entrepreneurial education in Jordan being Mehtap (2014).

The aim of this study is to discuss the concept of entrepreneurial education and explore its potential for the case of Jordan. For this purpose, a questionnaire (both in Arabic and in English) has been distributed to 187 students of three public universities in Jordan, namely German Jordanian University, University of Jordan, and Yarmouk University. The questionnaire aims at eliciting several dimensions, skills, and attitudes that are relevant to entrepreneurship and that can be influenced by entrepreneurial education. The questionnaire is based on the tool developed by Moberg et al. (2014) for the Assessment Tools and Indicators for Entrepreneurship Education (ASTEE) project, which has been already validated over a large sample of students from 13 different European countries.

The present research contributes to the existing literature, in that it explores and empirically tests the potential of a very promising line of development in education, namely entrepreneurship education, which is at present very widely discussed and find a broad consensus worldwide, but still did not find a suitable ground within the debate on reforming educational systems in the Middle East, and in the specific, in Jordan. This is, at best of our knowledge, the first investigation empirically testing entrepreneurial constructs in Jordan, thus, in other words, testing the fertility of the ground for entrepreneurship in the country, and benchmarking the findings to that of a large international sample.

The starting point of the investigation, which signalizes the importance and the urgency of the issue, is that social and political stability, as well as economic growth and its sustainability in Jordan (as well as in the whole Middle East) are seriously threaten by the "avalanche"of change brought about by globalization and by the knowledge economy (Barber et al., 2013), which are adding to the structural underdevelopment of the private sector and to existing demographic pressures. The present analysis sustains and finds empirical support for entrepreneurship education to be a promising principle to modernize the educational system in Jordan and reduce the mismatch between it and the labor market.

The paper is articulated as follows: in section 2 the

concept of entrepreneurship is defined and discussed and a framework for entrepreneurship education is elaborated, both in theoretical and in operative terms. Section 3 presents some reflections on the need for modernizing the educational system in Jordan Section 4 presents the design and the tool of the empirical investigation and its underlying research hypotheses, Section 5 the main empirical results, and Section 6 concludes.

Entrepreneurial education

Entrepreneurship is defined as the process of new ventures creation. A definition of entrepreneurship may centre on the figure of the entrepreneur and should merge formal and functional aspects: accordingly, the entrepreneur is the owner and/ or founder of a firm (Reitan, 1997), who assumes the risk and takes responsibility (Schmölders, 1971), as well as someone acting entrepreneurially and pushing innovations (Schumpeter, 1952; Drucker, 1985).

Entrepreneurship has been recognized to be a driver of economic development, of empowerment, and of employment possibilities generation. It has been now an enduring trend, lasting throughout the last decade, for policy makers in the industrialized world to focus on entrepreneurship as a device to strengthen economic growth, to defeat economic crisis, promote knowledge based development, self-employment, and generate new job opportunities (see e.g. European Commission, 2003, and UNECE, 2012). The same is valid for developing countries, for which entrepreneurship has been in addition seen by politicians and developing agencies as a viable way to stimulate development from bottom to top, to empower people, and to defeat poverty (for a discussion of challenges linked to promoting entrepreneurship in developing countries, see e.g. Wim, 2010).

Entrepreneurship has to do with growth, as it deals with pursuing opportunities going beyond the resources currently under one's control (Stevenson and Jarrillo, 1990). The creation of a new venture involves recognizing and exploiting new (profit) opportunities (Hitt et al., 2002) and entrepreneurship is thus *„a dynamic process of vision, change, and creation. It requires an application of energy and passion towards the creation and implementation of new ideas and creative solutions"* (Kuratko and Hodgetts, 2004). The process of entrepreneurship consists of four main blocks: (1) it starts with the intention to launch a new venture, which is then followed (2) by the active search and recognition of an opportunity. The successive decision (3) to exploit this opportunity, requires among else evaluating risk and ambiguity connected, should be finally put into practice, with (4) the factual exploitation of this opportunity (Heinonen and Poikkijoki, 2006). What emerges from this enumeration of steps of the entrepreneurship process clearly signals that entrepreneurship does not merely require the command over solid management skills, but rather a broad and interdisciplinary spectrum of skills and attitudes, ranging from problem-solving, to flexibility to respond to changes.

The entrepreneur is the one who gives life to the process of entrepreneurship, putting into practice its constitutive elements. This requires the entrepreneur to possess specific skills and personality traits and to be capable to perform specific tasks and activities. From this consideration, two compelling approaches on the figure of the entrepreneur have been developed: the personality traits approach and the behavioral approach.

The main research question which originates the different approaches is whether entrepreneurs are born or made: the traits approach sustains the view that certain individual becomes entrepreneurs because they

reveal specific personality traits and characteristics. These traits are essentially need for achievement (Komives, 1972, McClelland, 1961; McClelland and Winter, 1969), locus of control (Brockhaus, 1980) risk taking (Brockhaus, 1980; Hull, Bosley, and Udell, 1980; Liles, 1974; Palmer, 1971), values (DeCarlo and Lyons, 1979; Hornaday and Aboud, 1971; Hull; Komives, 1972).

Contrasting this view on the entrepreneur as a set of personality traits, the behavioral approach sees the entrepreneur as the *"set of activities involved in organization creation"* (Gartner, 1988). The behavioral approach thus takes distance from the idea that entrepreneurs are born (for a discussion on the genetics of entrepreneurship, see Schane, 2010) and focuses on the view of entrepreneurship as a process (Low and MacMillan, 1988, Neck and Greene, 2011) and as a distinctive domain (Venkataraman, 1997), highlighting thus the interdisciplinary nature of entrepreneurship and of the analytical tools needed to develop a sound theoretical framework to be taught.

Entrepreneurship education stems from this line of research and assumes that entrepreneurship can be taught: what can be taught are the capabilities to preside and analyze a complex process such as the entrepreneurship process.

Entrepreneurial education aims at educating enterprising individuals, i.e. demonstrating behaviors, attitudes, and attributes often associated with the entrepreneur, but not constrained to him and therefore observable in any context (Bath and Bourke, 2011). Entrepreneurial education is thus neither a question of teaching how to start a successful business, nor of becoming an entrepreneur, but it is rather conveying a method for approaching and managing the complexity of reality.

In other words, entrepreneurial education deals with transferring a model of entrepreneurship, not just notions of management and enterprise. To make the point clear, it may be useful to review some main characteristics of a standard entrepreneurship curriculum so far and to evidence its differences to an entrepreneurial education curriculum.

A standard entrepreneurship curriculum tends to be the domain of business schools'students (Wilson, 2008), contradicting thus the interdisciplinary profile wished by real entrepreneurial education. The standard way of teaching entrepreneurship further focuses on the phenomenon of entrepreneurship and on its process on a mere managerial perspective (Gibb, 2005). In particular, entrepreneurship curricula are typically strongly business plan centered and they tend to sub aggregate management knowledge into the different management functional disciplines. What is mostly lacking and is on the contrary posited by entrepreneurship education, is thus a holistic approach to management, the focus on the importance of tacit knowledge, including herewith heuristics and intuitive decision-making (Gibb, 2005). In addition, standard entrepreneurship courses tend to be dominated by a heroic view on the entrepreneur, focusing on the difficulties faced by entrepreneurs and skeptical about the possibilities of obtaining high levels of growth (Gibb, 2005). This somehow also reflects in the centrality of SMEs in many curricula, which all too often is based on the underlying consideration that high growth rates are a mere prerogative of larger entrepreneurial firms (Wilson, 2008).

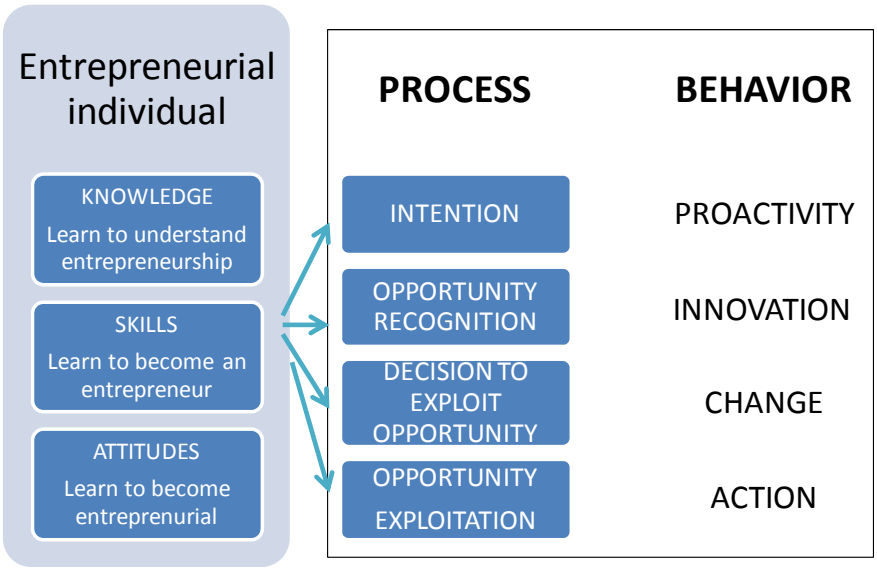
Elements of entrepreneurial education

A result of entrepreneurship education should be to contribute developing strategic thinking, appreciating and understanding that entrepreneurial behaviors can be practiced in different contexts, internalizing the process of opportunity seeking, evaluating, and capturing in

different context (not only, but also, business) (Gibb, 2005). In general, *„[e]ntrepreneurial higher education institutions are designed to empower staff and students to demonstrate enterprise, innovation and creativity in research, teaching and pursuit the use of knowledge across boundaries"* (Gibb, 2013).

Fig1. summarizes some of the essential elements of the entrepreneurial process highlighting the behavioral substrate underlying each of them. It can thus provide some guidelines for defining what makes an entrepreneurial individual and helps herewith specifying and disentangling the domains for entrepreneurial education.

Figure 1. Elements of entrepreneurial education (adapted from Moberg et al., 2014)



Legend: Entrepreneurial individuals should be in possess of specific skills, knowledge, and attitudes, enabling them to start the entrepreneurial process of opportunity recognition and exploitation. In order to foster this process, education should then focus on the specific behaviors and behavioral traits needed.

As it can be read from Fig. 1, in order to be able to initiate and manage the process of entrepreneurship, an individual needs to reveal certain attitudes, to possess certain skills, as well as to be in command of some basic knowledge in entrepreneurship.

The attitudes comprehend strive for independence, motivation, and determination and they can be related to the so-called locus of control, self-efficacy, persistency and tolerance of failure, self-confidence (which is difficult to disentangle from overconfidence), innovativeness and creativity, risk propensity and tolerance for ambiguity.

The skills are wide scattered and this reflects the view of the entrepreneur as jack-of-all-trades (Lazear, 2005; Silva, 2008; Åstebro and Thompson 2011). Further, it seems to be favorable for entrepreneurs whenever these skills are balanced (Rosendahl Huber et al., 2014).

Core entrepreneurial skills include planning, organization, and management skills, together with leadership, communication, and negotiation skills. On top of that, the entrepreneurial process also requires

creative and problem-solving skills, as well as risk and ambiguity management.

Overall, skills and attitudes correspond somehow to the essential personality traits of entrepreneurs.

Doing entrepreneurial education

Entrepreneurial education is not a question of adding to the study plans one or two courses dealing with entrepreneurship, but rather a question of rethinking how to promote entrepreneurial behavior in a very broad and interdisciplinary sense. With the guiding principle that *"entrepreneurship education must be entrepreneurial"* (Kent, 1990), scholars are actually debating on how to implement entrepreneurship education (Neck and Green, 2011; Coyle et al., 2013) and from the discussion it emerges that there is no unique way to approach the issue, but rather a plurality of ways that should be adopted tailoring them to the reality in which they should be implemented.

The present research only focuses on entrepreneurial education at universities, but in general, entrepreneurship education can be very well applied starting from primary education: being a holistic approach aiming at developing certain skills and at promoting creativity and proactive mindset, the earlier it is started with, the better the results will be. Entrepreneurship education, in particular for primary and secondary education, has also very much to do with the role of the teacher as a coach and as a support to the individual development of the pupils (European Commission, 2011).

Entrepreneurship should be taught as a method, including a body of skills or techniques, including promoting planning abilities, creativity and active problem solving, and putting a strong focus on iteration, experimentation, and practice (Neck and Greene, 2011). An entrepreneurial university would be then a university actively promoting entrepreneurial education as a holistic approach to didactics and beyond its school of business and / or management, as *"current analytical-functional quantitative, tools-oriented, theoretical, left-side of the brain, overspecializes, compartmentalized, approaches are not adequate to begin solving ill-defined, unstructured, ambiguous, complex, multidisciplinary, holistic, real world problems"* (Plaschka and Welsch, 1990).

Entrepreneurship education should foster innovation and innovative thinking, should spread an entrepreneurial culture within students and staff, and should find ways to encourage exchange and knowledge transfer between the university, the industry, and the local communities. For a comprehensive review and discussion on different approaches and experiences to entrepreneurial education, see Coyle et al. (2013) and for a further discussion on modalities of stakeholders' involvement, see Gibb (2005). Further guidelines for implementing entrepreneurial education (at university, but also at school level) can be found in European Commission (2013).

The need for modernizing the educational system in Jordan

The higher education system is typically judged by the way it responds to changes in the economy and in the society and it is very often assessed by the degree at which is it able to accommodate the new societal and economic needs (Gibb et al. for Heinnovate). The essential question is hereby "*whether a university education is a good preparation for working life and citizenship in the 21st century or, more precisely, whether it will continue to be seen as good value, given the remorseless rise in the cost of a university education over recent decades"* (Barber et al., 2002). Globalization is a very complex phenomenon, which also includes new

paths of knowledge creation and distribution: knowledge is ubiquitous, the cost of sharing it tends to zero, so that innovation is steadily accelerating (Barber et al., 2002 and Gibb et al. for Heinnovate). This inevitably affects the value of two main outputs of universities, namely degrees and research, and adds to the need of modernizing the higher educational systems. The increased competition between universities in attracting students, which no longer takes place at national, but rather at international level, is a further element pointing at the urge of reforming higher education.

All that can be particularly well applied to the Arab Middle East and may have particularly severe implications for countries of the region, including Jordan: the Arab countries of the Middle East are currently facing several common economic challenges (O'Sullivan et al., 2012), such as high unemployment and in particular youth unemployment rates, combining with demographic structures with a large number of youth. This is threatening (Malik and Awadallah, 2013, which interprets the Arab Spring to be a product of economic issues and structural problems of the region) and may further threaten the political stability of the region and hamper its economic development (Yousef, 2004, and Mirkin, 2013).

According to the Jordan's Department of Statistics (2015), in the year 2014 unemployment in Jordan was 11.9% and gender differences in it were pronounced with 10.1% unemployment rates among males and 20.7% among females. Youth unemployment was assessed for the same year to be 30.6%, with male youth unemployment being 26.3% and female reaching 53.3%. The literacy rate in Jordan is almost complete: literacy rate among adult population (aged 15 and above) was namely 97.9% in 2012 (World Bank Database, 2015), between 2003 and 2013 primary enrollment rates were 98% among males and 96% among female, with an overall primary completion rate of 98% (UNICEF, 2014). Secondary enrollment rates were estimated by UNICEF (2014) to be 86% for males and 89% for females. Tertiary level graduation rates (bachelor and above) are very high also in international comparison (Khasawneh et al., 2008). Unemployment of individuals with a bachelor degree and above is still very high: according to the Department of Statistics (2015) unemployment rate among graduates (bachelor and above) was 17.3% in 2014, 11.7% for males, and a dramatic 62.4% for females.

From the one hand, figures on unemployment in Jordan signals the need for creating job opportunities and to invest into the private sector for progressively changing the existing social contract according to which the state is still employing a large share of the population (according to the Jordan's National Employment Strategy 2011-2020, 38% of the employed was working for the public sector). The situation is further aggravated by the high population growth (more than 2% per annum over the last decade, according to the Jordan Economy Profile, 2015), by an unbalanced dependency ratio of 1:4 (figure for 2013, as of NCHRD, 2014), and by the massive inflow of refugees, mostly from Syria (628,160, as of UN data presented in http://data.unhcr.org/syrianrefugees/country.php?id=107).

From the other hand, the high unemployment among graduates questions the returns on higher education (even though the wage differential still seems to be favorable to the investment into education, Khasawneh et al., 2008) and contribute increasing the brain drain (De Bel-Air, 2010), which builds on a longstanding traditions of Jordanian work-related migration (Alshyab and Al Khasawneh, 2008). With the increased international competition for jobs, but also for study opportunity, higher education institutions in Jordan are under a clear pressure to reform.

The authorities in Jordan are aware of the need to

modernize the education system and several reform attempts have been implemented, also in cooperation with international institutions (e.g., the Second Education Reform for the Knowledge Economy Project, ERfKE II, as in World Bank, 2005). It is a widely recognized fact that *"unemployment problem also has structural causes rooted in mismatches between job expectations and skills needed in the growing economy. Thus, the education system is in need of reforms to produce skills needed for the global knowledge economy"* (IEG, 2011).

An empirical investigation of the need and potential of entrepreneurship education in Jordan

The approach of this study is that the need and potential for entrepreneurial education in Jordan should be empirically investigated and validated. As follows, the design of the questionnaire, its underlying theoretical constructs, the main research hypotheses, and the empirical findings are discussed. Overall, the empirical investigation aims at taking stock with the behavioral substrate, knowledge and skills for entrepreneurship among undergraduate students in Jordan in order to evaluate (1) whether entrepreneurship education is needed and (2) whether Jordanian students may offer a fertile ground for this approach to education. As a first step of evaluation, the comparison between the Jordanian sample and a larger sample of students from different European countries who took part to the ASTEE assessment (Moberg et al., 2014) is presented (between groups comparison). As a second step, it is searched for group effects within the Jordanian sample (within group comparison).

Methodology of the empirical investigation

The empirical evaluation of the need and potential for entrepreneurial higher education in Jordan relies on the Assessment Tools and indicators for Entrepreneurship Education, ASTEE (Moberg et al., 2014). This tool, which has been developed by a consortium of universities and research institutes under the frame of the ASTEE project, has been verified and tested in 13 countries of the European Union at primary, secondary, and higher education levels. The tool has been validated in each of its dimensions and constitutes therefore a valid and reliable tool towards which quasi experimental findings (such as findings from the administration of the ASTEE questionnaire to samples of different sizes, nationality, and demographic characteristics) can be benchmarked.

The ASTEE questionnaire aims at assessing the elements of entrepreneurial education (Fig.), focusing in particular on entrepreneurial knowledge, skills, and attitudes. The evaluation of each of these dimensions is based on the respondents'self assessment over a scale from 1 (strongly disagree) to 7 (strongly agree).

In particular, entrepreneurial knowledge is elicited in terms of the respondents'self assessment of their financial literacy, of their assessment of business opportunities, of their understanding of the role of the entrepreneur for the society, and of their perception of entrepreneurship as a career opportunity. The elicitation of the entrepreneurial skills relies on measuring the self-perception of the respondents' creativity, planning, marshalling of resources, uncertainty and ambiguity management. Among the entrepreneurial attitudes, the questionnaire focuses on mindset, and core self-evaluation. Entrepreneurial mindset is linked to pro-activity and action and includes thus personality traits like perseverance, grit, and drive for independence (Tough, 2013) As entrepreneurial attitudes are very much related to the perception of an individual of his / her own capabilities in successfully performing tasks and overcoming challenges, the ASTEE tool evaluates them according to the Self Core Evaluation (CSE) measure

as developed by Judge and coauthors (2003). CSE has been validated as reliable measure for individual self-efficacy, locus of control, and self-esteem.[1]

The questionnaire is in Appendix in its English version. The Arabic version of the questionnaire can be provided by the authors upon request.

Empirical investigation and research hypotheses

A questionnaire based on the ASTEE tool as in Moberg et al. (2014) was distributed among a representative sample of 187 undergraduate students from three public universities in Jordan, namely German Jordanian University (GJU), University of Jordan (JU), and Yarmouk University (YU). The questionnaire was made available to the respondents both in English and in Arabic. A total of 184 questionnaires have been considered for evaluation and three questionnaires could not be considered as due to incomplete answers. The sample considered for evaluation includes 81 business students and 103 students from other schools. The sample is gender balanced with 86 of the respondents being male and 98 females. The sample only refers to undergraduate students as higher level tertiary education from Jordanian universities still regards a small group of the population.[2]

The research hypotheses are (H1) that Jordanian undergraduate students significantly differ in their self-assessment from the European students who were exposed to entrepreneurial education, but (H2) they do not significantly differ in most of the dimensions elicited from the European students who did not receive entrepreneurial education. Believing in the still insufficiently unexplored existence of cross-national differences in many psychological aspects and in particular in self-esteem and overconfidence among different populations,[3] a further expectation is related to (H3) a significantly higher core self-evaluation (CSE) by the Jordanian students in comparison to the European non entrepreneurially educated students and to a (H4) non significantly different CSE of Jordanian and entrepreneurially educated students.

Looking then at possible group effects within the sample of Jordanian students, we (H5) do not expect significant gender differences, as entrepreneurial traits are not a gender biased phenomenon (Pines and Schwartz, 2008). Further, interpreting entrepreneurial education as a holistic approach to education, we (H6) do not expect significant differences in the responses of students who took a course in entrepreneurship and of the ones who did not take it, (H7) neither we expect significant differences between business students and students from other schools. Hypotheses 6 and 7 are herewith thought to be a validation of the theoretical discussion introducing the study and of the overall concept of entrepreneurial education to be introduced and merged into the existing curricula of the different fields of higher education.

Main empirical findings

As a first step, the Jordanian sample has been compared to the benchmark of the respondents to the ASTEE questionnaire: this consists into two groups of undergraduate students from different European countries differing in their exposure to entrepreneurial education. In particular, the first group of 557 students took part to entrepreneurial education programs (group 1), while the second group of 426 students did not have entrepreneurial education of any kind (group 2).[4] The group of 184 Jordanian undergraduate students (group 3) was benchmarked to these two groups.

The evaluation is based on the mean of self-assessment for each individual, which has been then aggregated into a mean evaluation for the respective dimension. The results are presented in Table 1.

Table 1. Sample of Jordanian undergraduate students vis a vis ASTEE sample (for the data for the ASTEE sample, see Moberg et al., 2014)

Sample / Variable	Group 1 EU Ent-Edu (n=557)			Group 2 EU Non Ent-Edu (n=426)			Group 3 Jordan Non Ent-Edu (n=184)		
	Mean	95% CI		**Mean**	95% CI		**Mean**	95% CI	
Creativity	**5.24**	5.15	5.33	**4.94**	4.84	5.04	**5.07**	5.06	5.07
Planning	**5.31**	5.22	5.40	**5.02**	4.91	5.13	**5.00**	4.99	5.00
Financial literacy	**4.61**	4.51	4.71	**4.37**	4.25	4.48	**4.50**	4.49	4.50
Marshalling of resources	**5.36**	5.26	5.45	**5.13**	5.02	5.24	**5.18**	5.17	5.19
Managing ambiguity	**5.41**	5.33	5.50	**5.11**	5.00	5.21	**4.94**	4.93	4.94
Entre. knowledge	**5.96**	5.87	6.04	**5.47**	5.36	5.58	**5.20**	5.20	5.21
Entre. mindset	**5.12**	5.03	5.20	**4.82**	4.71	4.92	**5.12**	5.11	5.12
Core self-evaluation	**5.46**	5.39	5.54	**5.25**	5.15	5.35	**5.39**	5.38	5.39
Entre. attitudes	**5.62**	5.51	5.73	**5.40**	5.28	5.53	**5.35**	5.34	5.36

Focusing first on the skills (creativity, planning, financial literacy, marshalling of resources, managing of ambiguity, and entrepreneurial knowledge) and comparing the mean self-assessment of Jordanian undergraduates (group 3) with those of European students, who were exposed to entrepreneurial education (group 1), it emerges that group 3 scores significantly lower in all skills. This provides support to the first research hypothesis and validates the results from the comparison between group 1 and 2, i.e. between European students who were respectively exposed and not exposed to entrepreneurial education. Overall, this corroborates the view that entrepreneurial education is an effective way to increase the skills'profile of students.

An interesting result is that, from the comparison between group 2 and 3, which are both non familiar with entrepreneurial education, the Jordanian sample (group 3) perceives significantly different (higher) than the European counterpart (group 2) its skills in creativity, financial literacy, managing ambiguity, and entrepreneurial knowledge. This is against our expectations as in the second research hypothesis, but can be better interpreted together with the evidence on the dimensions shaping the entrepreneurial mindset (entrepreneurial mindset, core self-evaluation, and entrepreneurial attitudes) and discussed in relation to the next two research hypotheses (H3 and H4).

Concerning the entrepreneurial mindset, a first very encouraging fact is that the Jordanian sample does not perceived itself significantly different than the European entrepreneurially educated sample: there are no significant differences between the results of group 3 and 1 in entrepreneurial mindset and core self-evaluation, whereas both group 1 and 3 scores significantly higher in this dimensions than group 2. This, in general corroborates the hypothesis that there is

potential for entrepreneurial education in Jordan, in the sense that the mindset seems to be in tune with the entrepreneurial mindset and to favor entrepreneurial attitudes. Entrepreneurial education may thus find a suitable ground within Jordanian students.

This is further reinforced by the better self-assessment of group 3 compared to group 2 regarding creativity, financial literacy, managing ambiguity, and entrepreneurial knowledge. As a corollary, these results may be also related to overconfidence, which has been shown to differ in cross-national comparison (Yates et al., 1996), and which has been also discussed as an important trait of the typical entrepreneur. Overconfidence can be defined as the tendency to overly rely on the own capabilities and encompasses beliefs ranging from feeling better than the average (the so called better-than-average effect, BTE) up to the illusion of control (Lambert et al., 2012).

In order to have a closer look at the Jordanian sample and detect eventual group effects (H5, H6, and H7), we first checked for the homogeneity of the samples from different universities: accordingly, we checked for the existence of no significant group effects between the responses of students from German Jordanian University, University of Jordan, and Yarmouk University.

For testing then hypothesis 5, we compared the responses of males and females. The results are presented in Table 2.

Table 2. Test of H5, gender effects

Gender / Variable	Male (N=86)	Female (N=98)	t-test P
Creativity	4.945	5.177	0.157
Planning	4.792	5.179	0.048
Financial literacy	4.467	4.527	0.729
Marshalling of resources	5.057	5.291	0.187
Managing ambiguity	4.952	4.921	0.850
Entrepreneurial knowledge	4.948	5.434	0.017
Entrepreneurial mindset	5.194	5.052	0.486
Core self-evaluation	5.348	5.420	0.692
Entrepreneurial attitudes	5.110	5.577	0.090

The p-coefficients for a t-test (95%) corroborate the idea of no significant gender related differences for most of the dimensions elicited, with the exception of planning, entrepreneurial knowledge, and entrepreneurial attitudes. The idea of better planning skills of females may support previous empirical findings (Naglieri and Rojahn, 2001), whereas a better female perception of their own entrepreneurial

knowledge does not match the results of the ASTEE evaluation of the sample of European students (Moberg et al., 2014). A better, but only marginally significant, self-assessment of females concerning the own entrepreneurial attitudes also contradicts the predictions of the ASTEE research, which pointed out at male European students being more confident over the own entrepreneurial attitudes (Moberg et al., 2014). Overall, data do not corroborate the existence of strong gender effects, so that H5 cannot be rejected.

To validate the posited approach towards entrepreneurial education, stating namely that entrepreneurial education is a question of profoundly rethinking curricula, teaching modalities, and schemes, and cannot be thus simply realized via introducing a course in entrepreneurship, we grouped the respondents according to their participation into an entrepreneurship course. The result of the intergroup comparison is shown in Table 3.

Table 3. Group effects from a course in entrepreneurship

Course in entre Variable	No (N=83)	Yes (N=101)	t-test p
Creativity	4.955	5.161	0.214
Planning	4.803	5.161	0.070
Financial literacy	4.451	4.538	0.619
Marshalling of resources	5.067	5.277	0.240
Managing ambiguity	4.904	4.963	0.722
Entrepreneurial knowledge	4.914	5.448	0.009
Entrepreneurial mindset	5.197	5.053	0.485
Core self-evaluation	5.359	5.408	0.789
Entrepreneurial attitudes	5.189	5.496	0.268

The results substantially corroborate the posited approach to entrepreneurship education and are in tune with the corresponding research hypothesis (H6): some elements of entrepreneurship in a study plan are not enough to significantly improve entrepreneurial skills and attitudes. The only dimensions that are positively, and not surprisingly, affected by a course in entrepreneurship are entrepreneurial knowledge and, only marginally significantly, planning skills.

The last research hypothesis (H7) is tested comparing the responses of business schools'versus other schools'students. The results of a t-test with 95% degree of confidence are summarized in Table 4.

Table 4. Group effects by schools

School / Variable	Business school (N=81)	Other schools (N=103)	t-test p
Creativity	4.852	5.244	0.015
Planning	4.675	5.255	0.003
Financial literacy	4.298	4.664	0.033
Marshalling of resources	4.925	5.394	0.008
Managing ambiguity	4.725	5.111	0.016
Entrepreneurial knowledge	5.032	5.347	0.133
Entrepreneurial mindset	4.650	5.490	0.000
Core self-evaluation	5.144	5.579	0.014
Entrepreneurial attitudes	5.466	5.235	0.403

Students from other schools than business seem to outperform business students for what concerns their planning skills, their marshaling of resources, and, paradoxically, financial literacy. Even though several studies corroborate the idea of overconfidence increasing with an individual's expertise (Lambert et al., 2012), in the case of undergraduate students it may be more realistic to sustain the view that business schools' students may be less confident in their financial literacy having to face more financial and related concepts and being thus more aware of the limits of their own knowledge.

As for the mindset, a highly significant result is the higher entrepreneurial mindset and core self-evaluation of non business students. An explanation can be found looking at the composition of the sub group considered: most of the non-business schools were namely students of technical disciplines and, in particular, of different fields of engineering. Thus, their higher core self-evaluation may be linked to the high grade from high school required for admission at engineering's colleges. The entrepreneurial mindset seems to confirm findings by the Massachusetts Institute of Technology (MIT), according to which alumni from engineering and from management departments revealed a very similar propensity to become entrepreneurs (Roberts and Eesley, 2011).

Table 5 provides an overview on the research hypotheses and a summary of the main empirical findings.

Table 5. Overview on the research hypotheses and summary of empirical evidence

Research Hypotheses		**Summary of empirical evidence**
I.	Between groups comparison	
H1 (group 1 vs. group 3)	Differences between Jordanian and EU entrepreneurially educated respondents	**Yes**
H2 (group 2 vs. group 3)	No differences between Jordanian and EU non-entrepreneurially educated respondents	**No** (group 3 scores better in several dimensions)
H3 (CSE of group 2 vs. group 3)	Higher CSE among Jordanian than among EU non-entrepreneurially educated respondents	**Yes** (overconfidence)
H4 (CSE of group 1 vs. group 3)	Different (lower) CSE among Jordanian than among EU entrepreneurially educated respondents	**No**
II.	Within group comparison	
H5 (gender effects)	No differences between male and female respondents within the Jordanian sample	**Yes**
H6 (entrepreneurship)	No differences between respondents having taken a course in entrepreneurship and not	**Yes**
H7 (school effects)	No differences between respondents of different schools	**Yes**

Conclusion

Entrepreneurial education has being increasingly recognized as a possible way of improving the dramatic situation with youth unemployment, overcoming the competitiveness gap, and preparing a new generation of youngsters capable of constructively adding to the labor market and to the ongoing societal and political changes, by recognizing and exploiting new opportunities in an entre- and entrepreneurial way.

Considering the labor market and the economic situation of Jordan, we really believe entrepreneurial education should be promoted to modernize the higher educational system in the country, to foster knowledge transfer between higher education institutions and the

industry, and to support job creation. Overall, the importance and urgency of reforming and modernizing the higher education system is that Jordan can be further appreciated considering the large number of Jordanians studying and working abroad: it is thus, very important for the country to increase the competitiveness of its higher education institutions, from the one hand, and, from the other hand, to offer job opportunities to limit the brain drain.

After having discussed the main theoretical fundaments of entrepreneurship education, the present research empirically tests these propositions, analyzing the results of a questionnaire assessing the self perception of a sample of Jordanian undergraduate students on dimensions that are relevant for entrepreneurship and benchmarking the sample's results with a large scale study run in the European Union (Moberg et al., 2014). The results signalize the potential of Jordanian undergraduate students for entrepreneurship, revealing good scores in entrepreneurial mindset and attitudes, but also point at the need to invest into the existing potential, for improving the lower than average self-assessment concerning important entrepreneurial skills and attributes that entrepreneurial education has been shown to be able to improve.

NOTES

1- The only difference between the CSE in its original formulation its reutilization for the ASTEE tool, is the omission of neuroticism, which may have disturbed the sensitivity of the young respondents (Moberg et al., 2014).

2- As reported by Khasawneh et al. (2008), the graduation rate from master and diploma programs from Jordanian universities was, in 2005, 0.46%.

3- A study providing evidence for existing cross-national differences in overconfidence is, e.g. Yates et al., 1996.

4- For an operative definition of entrepreneurial education program to be considered by the ASTEE questionnaire, see Moberg et al. (2014).

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الحاجة إلى تعليم ريادة الأعمال في الأردن: دراسة تحليلية

سيرينا ساندري*

ملخص

يهدف تعليم روح المبادرة أو ريادة الأعمال إلى تطوير عقلية متعددة التخصصات ومجموعة من المهارات للتعرف الى الفرص وإيجاد الحلول للمشاكل وليس فقط تأسيس وإدارة المشاريع. فقد أكدت المفوضية الأوربية في بيانها بخصوص إعادة النظر في التعليم وفي خطتها 2020 لريادة الأعمال على أهمية الاستثمار في تعليم ريادة الأعمال، وذلك استجابة للتحديات التي يواجهها النظام التعليمي جراء تداعيات العولمة وارتفاع درجة المنافسة العالمية ومعدلات البطالة بين الشباب. والأردن أيضاً يواجه هذه المشاكل والتحديات ولن دون وجود أي <هود فاعلة ومنظمة بخصوص تعليم ريادة الأعمال.

ونحن نؤمن بأن تعليم ريادة الأعمال يمثل طريقاً لتحسين المستوى السيئ للبطالة عند الشباب وتنمية القطاع الخاص وإعداد جيل جديد من الشباب القادر على رفد سوق العمل بإضافات بناءة تمكنه من التعرف الى الفرص الجديدة واستغلالها بطريقة ريادية. وتركز هذه الدراسة على مراجعة وتطوير مفهوم تعليم ريادة الأعمال وبشكل خاص على تحليل الحاجة لتعليم ريادة الأعمال في الأردن وتقييم الإمكانات المتاحة.

وقد تم تحقيق هذا الهدف من خلال توزيع استبانة على عينة من طلاب البكالوريوس في الجامعات الحكومية الأردنية وتم مقارنة النتائج بنتائج الدراسة الواسعة التي أجريت على الطلبة الأوروبيين ضمن المشروع الأوروبي لتقييم أدوات ومؤشرات تعليم ريادة الأعمال (Moberg et al., 2014).

الكلمات الدالة: ريادة الأعمال، تعليم ريادة الأعمال، الأردن، الشرق الأوسط، البطالة بين الشباب، الاقتصادي السلوكي، دراسة استبيانية.

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