



DEVELOPMENT OF SUSTAINABLE ENTREPRENEURSHIP PROGRAMS IN EDUCATIONAL SYSTEM

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ABSTRACT

This paper discusses the important roles of educational system in fostering and developing of entrepreneurship. Educational systems are the most driving forces for sustainable development; because one area that unifies the industry, public, private and academic sphere is the educational system. Students are children transcending to students who with anticipation will turn out as responsible citizens which, hopefully, end up as either employees or as self-employed. The private sphere, the family, is participating by way of the children, the public sphere is responsible for the educational system and the industry sphere is what most hope will be developed, or changed, by way of becoming entrepreneurs.

Facilitating a sustainable future is a process of enabling people to improve their lives and develop their communities themselves. Entrepreneurship courses are fascinating especially for young people; because they can choose entrepreneurship as a sustainable career for themselves.

Entrepreneurship development programs in recent decade are booming. Educational systems (in lower and higher level) and other organizations in top levels in order to getting sustainable development are trying to inject entrepreneurship virus in people; meanwhile, these challenging questions will be arisen:

- How educational system does determine sustainable development via entrepreneurship?
- What are the short term and long term effects of entrepreneurship education?
- Which entrepreneurship programs are suitable for primary school students?
- Which entrepreneurship programs are suitable for high school students?
- In higher education levels, how theory and practice would meet each other via entrepreneurship?



- How is the status of Iran's educational system in entrepreneurship development?

In this descriptive paper all above will be discussed.

Keywords: Educational system – Sustainable development – Entrepreneurship education

1. Introduction

Implementing new strategic goal has major implications not the least in the field of education. If education is to respond to the challenges of the knowledge society, it can no longer consist simply of securing enough skills and qualifications for the individual to gain work. The emphasis now has to be on developing both capacity and motivation to carry on learning through life and adapt constantly to new changes and challenges.

Human capital has become one the key assets of companies' competitiveness in the knowledge society. Moreover learning and lifelong learning are seen as ways to build a productive and satisfying life within which people can use their full potential as professionals and active citizens.

Lifelong learning is the key to employability, competitiveness, adaptability and active citizenship, which interact with one another very closely. Everyone should have equal opportunities to adjust to the demands of social and economic change and participate actively in the shaping of world's future.

Following a well known marketing principle, sustainable development is said to deal with the 3 P's, which stand for People, Planet, and Profit. All three aspects (including the last) have to be satisfied before an entrepreneurial activity can be labelled as sustainable (Crals Evy and Vereeck Lode, 2002).

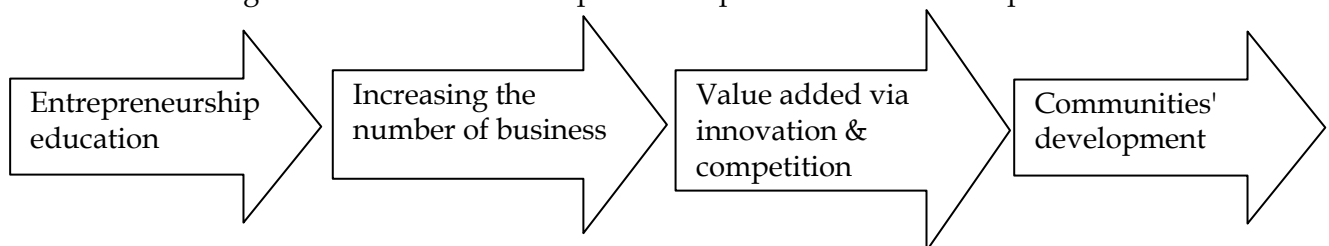
Sustainable entrepreneurship can be defined as the continuing commitment by businesses to behave ethically and contribute to economic development while improving the quality of life of the workforce, their families, the local and global community as well as future generations (World Business Council for Sustainable Development).

Our belief is that the educational system can play an active role in fostering entrepreneurship, through the creation of an environment that enhances entrepreneurial activities. However, a gap exists between the Iranian economic environment, based on an industrial tissue of small and medium firms where entrepreneurship is a rooted tradition, and the Iranian academic context that still tends to stress on offering traditional programmes. In other words, training on entrepreneurial matters is almost missing and new pedagogical methods that are best suited to an entrepreneurial learning style are not so widespread.

2. The effects of entrepreneurship education

Education has always been a key public-agenda item because the economy of any country requires changes in educational policies to match the changes in economic growth (see figure1).

Figure 1: the effects of entrepreneurship education on development





There is no question that there is a growing national and international interest in entrepreneurship. The importance of entrepreneurial education and Training for motivating educated youth to self-employment is recognised by development economists, planners and policy makers, as well as governments of most countries of the world. The entrepreneurial education traces its origin from the growing ideas that entrepreneurial qualities of man can be improved or new skill can be developed through special type of training and education among the potential persons in a society. The entrepreneurship education course includes the contents that help the students to be aware of economic opportunities, business environment, identification of project, preparation of business plan, improving motivation for achievement, techniques of enterprise management, self-development techniques, improving precision skill etc. Other objectives are concerned with building self-confidence, opportunity sense sensitivity and analytical skills. The purpose of the courses is to develop or improve skills that are vitally needed for self-employment as a career.

Today, entrepreneurship education is a popular course in business education and technical curriculum in many American and European countries. The courses are being offered not only in business school but also at community colleges, colleges of engineering education. Entrepreneurship courses have been included in the under graduate and graduate programs on selective basis in order to motivate some students to initiate small venture and take self employment as an alternative source of employment.

There has been recently increased interest from researchers about the link between entrepreneurship and education in general and EEP in particular. In terms of the general educational context, empirical research has shown that both the presence of entrepreneurship education programmes and a positive image of venture creators within educational institutions are incentives for students to choose an entrepreneurial career. For example, Johannisson (1991) and Autio et al. (1997) highlighted the positive impact of students' perceptions of entrepreneurship as a career choice, along with the role played by the resources and other support mechanisms available in the education environment. Chen et al (1998) identified a correlation between the level of entrepreneurial intention and the number of management courses taken by students enrolled in non-management programmes. Varela and Jimenez (2001), in a longitudinal study, chose groups of students from five programmes in three universities in Columbia and found that the highest entrepreneurship rates were achieved in the universities that had invested the most in entrepreneurship guidance and education for their students. Finally, Lu'thje and Franke (2003) underlined the importance of contextual factors in the university environment, which play a role in either inhibiting or facilitating the occurrence and the intensity of entrepreneurial behaviours for technology students. Their results are very close to those of Autio et al. (1997) and Fayolle (1996) derived from the analysis of comparable samples.

Regarding EEP in particular, entrepreneurship education and training have been found to influence both the current behaviour and future intentions of students (Kolvereid and Moen, 1997; Tkachev and Kolvereid, 1999; Fayolle, 2002). Other research works have studied the relationship between EEP and variables such as the need for achievement and the locus of control (Hansemark, 1998) or "self-efficacy" (Ehrlich et al., 2000). They found that entrepreneurship education had a positive impact, enhancing these characteristics and the likelihood of action at some point in the future. Moreover, there are significant differences between students who have attended entrepreneurship courses and those who have not. Noel (2001) looked specifically at the impact of entrepreneurship education on the development of entrepreneurial intention and the perception of self-efficacy. That research involved different groups of students: those who graduated in entrepreneurship, those who



graduated in management and those who graduated in other disciplines. All the students had attended an EEP. The results show that propensity to act as an entrepreneur, entrepreneurial intention and entrepreneurial “self-efficacy” all reach the highest scores among the students who graduated in entrepreneurship.

3. Entrepreneurship programs in educational system

Curriculum for the K-12 Classroom

Curriculum for K-12 classrooms includes programs that have been developed for primary, guidance and high school students. In guidance and high schools, entrepreneurship is often integrated into curriculum as a unit for in social studies.

3-1. Primary school

As for all competences leading to better management of one’s own life, the foundations are laid in the early years of education. At primary level, nurturing qualities such as creativity and a spirit of initiative helps develop entrepreneurial attitudes. This is best done through active learning based on children’s natural curiosity. In addition, learning about society should also include early knowledge of and contact with the world of work and business, and an understanding of the role of entrepreneurs in the community.

In some countries, curricula already encourage schools to guide children towards taking initiative and responsibility. However, examples of more explicit entrepreneurship education are few. In general terms, coherent initiatives or programmes led by education authorities are still rare in primary education; activities are often led by external actors, such as non-profit organisations supported by the private sector. Nonetheless, there are a number of good practices that should be disseminated to public authorities, schools, teachers and parents.

Methods of promoting a more open mindset towards entrepreneurship include working on projects, role games, simple case studies and visits to local enterprises. These are activities that support a number of other subjects, and the motivation of those who learn best by doing. Especially at later stages of primary education, entrepreneurship-related programmes can successfully combine creativity, innovation and a simple concept of business (e.g. pupils selling products in school markets, etc.).

(Commission of the European communities; Brussels, 13.2.2006)

The work in changing attitudes towards enterprising must begin early in school. The school should give the students an understanding of that running an own company is as usual as to be employed (*Berglund, Holmgren; 2006*).

The elementary teacher often has so much to teach that entrepreneurship education does not appear in the curriculum. Because it is crucial to let children know that entrepreneurship is a viable career option and the skills are critical in developing problem solving skills, there are many ways lesson can be integrated into existing curriculum.

In an elementary school has started incorporating a month-long business class into their fifth grade curriculum. The class teaches basic business fundamentals, let’s the children meet with venture capitalists. The kids even get to push their own product as they try to sell bracelets to the fourth graders.

This sounds like a great idea to me, but the program has its critics:



Come on, now. Kids learn hard lessons every day at school. I'm sure the business nerd who gets appointed as the president of the fictional company probably isn't the first one picked when it's time to play dodge ball. And seriously, does anyone really think that a business class is less valuable than an art class? All we ended up doing in elementary school art class was getting paint on our shirts and occasionally eating glue. Here are some entrepreneurial activities that may use in elementary school.

Geography

Have students take a walking tour of community businesses. Snap pictures of the businesses. When the pictures are developed, have the children construct an entrepreneurial map on a large wall.

Students can practice oral and written communication skills by writing interview questions and conducting interviews of the entrepreneurs. The information from those interviews can be compiled in a directory of the types of goods and services, locations, and hours of the businesses.

- Discuss the locations of the businesses; is location especially helpful to any particular business?
- Discuss the signs and advertising of the businesses. Which are most attractive? Why?
- Are any businesses closed or out-of-business? See if the students can research what happened to the business.

Language Arts

Adapt a few basic questions from a business plan and have students answer these questions for writing activities and projects. Ask each student to think of a project or product that others might be interested in buying:

- Describe your project or piece.
- Who will be your audience?
- Who will look at this piece?
- How will you make (or produce) your piece or project?
- What do you need to make this a success?
- With what or whom will your project compete?

Thinking Skills

Teach your students a basic evaluation tool...PMI. Edward DeBono's PMI is as useful for evaluating ventures as it is for evaluating writing, projects, and reports.

P = POSITIVE. What is positive or strong about your work?



M = MINUS. What is a minus or weak about your work? What needs to be changed? What needs to be stronger?

I = INTERESTING. What makes you say "Ah...I wish I had thought of that?"

Decision-making/communication Skills

Teach children to use higher order thinking by this simple decision-making technique to solve problems and make decisions. Assign them the task of using the process for a family or school problem, such as where to eat dinner. The process can be adapted to come up with an idea for a business venture. Use graph paper or design a grid to write down the ideas for each stage..

Six Step Decision-Making Processes

- State the problem
- List the alternatives
- List the criteria for evaluating the alternatives
- Evaluate the alternatives
- Make a decision

And the step usually skipped....

- Evaluate the decision

Higher order thinking

Here is a reality check. Some schools in Canada use a "POP test" for new ventures. Teach your students to use this adaptation of the test for essays and projects as well as business ventures.

- P Is the project POSSIBLE with the resources you have?
- O Is the project ORIGINAL, your OWN idea?
- P Is the project your PASSION? Will you be PLEASED you did this?
Can you PERSEVERE and complete the project?

Language arts/imaging

This is a particularly useful language arts as well as venture creation skill. Collect common and unusual objects and keep them handy. Each day, take out an object. For example, take out a film container. Hold it in your hand for everyone to see and say "I hold in my hand..." And give an unusual response. Then pass the object around for each child to give a response. For example, the film container could be a pill holder, a biscuit cutter, a holder for lunch money, etc. Children learn to see possibilities and look at common items in a new way.

Language arts/Research skills



Use the yellow pages for this activity. Have students look for businesses with interesting names. Have a business "scavenger hunt". Use categories for their research such as business names....

- with colorful adjectives
- with superlative forms of adjectives
- that are made up or are nonsense
- that are foreign words
- that tell what the business produces or sells
- that have alliteration (repeated beginning sounds)
- that are geographic terms
- that have nothing to do with the business's function
- that are named after people

Language arts

Use the newspaper and magazines to collect articles about entrepreneurs. Have students read the article and answer such questions as:

- How did the person get the ideas for the venture?
- What is the unique selling point of the good or service?
- What risks did the person take?
- Did this person have a mentor or "angel"?
- Did the person face any obstacles?
- Does this person have any competition?

Language arts/Social studies

Social studies Collect newspapers articles and train your class to do the same. Look for articles that talk about seasonal economic problems. Articles such as "BEACH TRAFFIC SENDS VACATIONERS RUNNING" or "HOT SUMMER DRIES UP MELON CROP" can be discussed for entrepreneurial opportunities as well as the impact of the problem on entrepreneurial ventures.

3-2. High school students

Curriculum on entrepreneurship, whether for use in or out of a formal classroom, begins by defining the concept of entrepreneurship and developing a framework into which young people can adopt the value of being entrepreneurial. Goals are to teach students the skills to build a business, and in a larger sense, to take responsibility and initiative in their lives. Texts are aimed at giving only the necessary information, and worksheets are used to help students focus on how they will develop their own businesses. Students gain hands-on experience in creating a business, sometimes in a simulated environment and sometimes in the real marketplace.



Marilyn Kourilsky, Vice President of the Kauffman Center for Entrepreneurial Leadership, has lead the way since the 1980's in curriculum development in entrepreneurship education for K-12 classes. She is arguably the preeminent developer of curriculum in this area and has pioneered the expansion of entrepreneurship into a recognized field of study. Her curriculum focuses on the concept of entrepreneurship and teaches general behaviors for working and living successfully, as well as skills in starting businesses. Steve Mariotti, Director the National Foundation for Teaching Entrepreneurship, has created curriculum and programs for teaching entrepreneurship to inner-city at-risk youth outside of the formal classroom. His curriculum has lead the way in providing entrepreneurial education programs for out-of-school environments.

At the high school level, entrepreneurship is frequently taught as a unit within business education courses. Entrepreneurial education is appropriate at any point in the academic program when the teaching of skills for work and living is desired.

The four units are activity-based and individually focused. They address

- 1) Can I Be an Entrepreneur?
- 2) What Experiences Have I Had?
- 3) What Type of Business Could I Start?
- 4) How Can I Prepare to Be My Own Boss?

Each unit has cases of real entrepreneurs, activities, and a diary activity.

3-3. Entrepreneurship programs in higher education

Entrepreneurial activities of scientists are by no means totally new phenomena. Such things occurred in 17th century German pharmaceutical science. Another famous example is Justus Liebig's fertilizer venture in the mid 19th century (Etzkowitz, 1983).

However, these and other chemical spin-offs did not affect academic research sites. The formation of industrial consulting and scientific instrumentation firms by scientists also took place in the late nineteenth century at Harvard and MIT but were anomalies at the time (Shimshoni, 1970). During the past two decades, however, an increasing number of academic scientists have taken some or all of the steps necessary to start a firm by writing business plans, raising funds, leasing space, recruiting staff, etc.(Blumenthal et. al., 1986; Blumenthal, 1986a; Krinsky et al., 1991).

Over the last decade, there has been an explosion in the number of universities that offer entrepreneurship classes, and which have established entrepreneurship programs and centers. Demand is coming from both would-be entrepreneurs and companies who are in need of crossfunctional thinkers with entrepreneurial skills.

In university studies, entrepreneurship education provides specific training on how to start and run a business, and encourages and supports business ideas from students.

In response to the formidable challenge of socioeconomic change and changes in work processes at the turn of the century. These changes are the result of fastpaced technological advances, the new economic dynamics (increased value of market orientation, globalization, growing uncertainty, etc.), the new division of labor (standardization, automation, modularity, outsourcing, etc.), and the rise of new values, new problems, and new opportunities.

This ideal, which replaces that of the science-based conceptual engineer generated in the Fifties and Sixties, may be summed up as a set of skills seen as necessary to face the situation brought about by the changes:



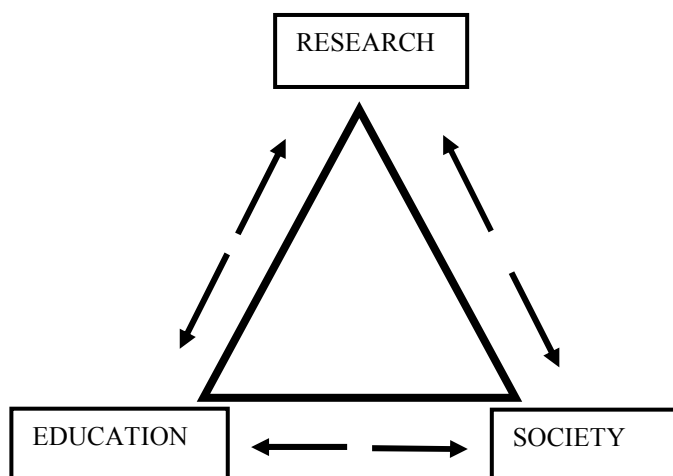
- √ ability to generate one's own information flow: self-teaching capability, which requires an ample scientific and cultural basis, given the present state of technological development and the emergence of new problems;
- √ ability to create, design, and manage technological interventions: being a problem solver; communications skills;
- √ ability to work in multidisciplinary teams; leadership;
- √ ability to evaluate the social and environmental impact of one's interventions; perspective;
- √ market vision, business acumen;
- √ ethical behavior;
- √ Last but not least, entrepreneurship.

Entrepreneurship means the ability to create new values through a reordering of reality. "The science-based entrepreneurial aims, by means of a science-based technical intervention (discovery, invention, planning, management, organization), to exhibit and to produce new products, services, transactions, resources, technologies or markets which can be recognized as valuable by society". The entrepreneur must constantly relate to the world around him or her, not only to specify the problem that must be solved but also to search for a solution, tests it, and develops it. He or she must have perspective, taking in not only the technical aspects but also the economic, social, cultural, and ethical contexts. And he or she must realize that society today – whether or not he or she agrees with it – sees the engineer's activity in business terms, and accordingly be prepared to deal with this reality. Introducing the entrepreneurial dimension in the training of engineers is akin to venturing onto uncharted waters.

3-4. University society interaction

If the firms' creation is essential to the development of the regions and if the external variables are important in the entrepreneur's motivation, it is fundamental that the University, a central institution in society, participates in the promotion of entrepreneurship. The University develops its mission based on 3 elements: education, research and society. Each element is related with the others and the figure only is complete if the relation is kept in both ways between them; (see figure 2).

Figure 2- THE UNIVERSITY MISSION



(Ussman, Ana Maria; 1998)



The education must be based on research and the research must be oriented to the society. A common criticism made against University is that it is isolated from the real world, making research closed in the laboratories, forgotten the real needs of society, and the education provided reflects this isolation: it is not adequate to the actual labour market needs.

The labour market is changing. To conclude a graduation course doesn't protect the individual from unemployment. Today, the young generation needs to know how to act with flexibility, insecure situations, complexity, and changed rules in labour market. The conventional employment is disappearing (Halme, 1996). The young generation must to learn new values as innovation and flexibility and a great diversity of competencies. They must to think about the creation of their own employment.

The rules of the labour market are changing and the education systems have to change to. This means that the University must to think on promoting entrepreneurship education. Entrepreneurship education promotes self-employment as a career alternative and at the same time it provides to the students' competencies, abilities and knowledge needed to the firm creation.

The research show that the firm creation is a possible option and that it is accepted as a career (Garrigosa and Veciana, 1984; Brenner et al., 1991). There is a positive attitude from students toward entrepreneurship even if they are conscious of the difficulties related with firm creation, (Ussman, 1996; Fleming, 1996) but the curricula provide an *employee* culture against a *self-employment* or *individual initiative* culture.

The conclusion is that despite firm creation is a possible career option for students, it is not currently included in the graduation curricula (Ussman, 1996; Brenner et al, 1991).

The curricula are concentrated in student's preparation to a career as employees in a stable organisation. Only in a few examples it has courses on firm creation, and in that case it is always in graduation on business administration or economics.

The University can participate in the promotion of entrepreneurial activity in two ways: to take part in activities that bring students directly to enterprises but also in the design of curricula that prepare the students to the foundation of firms.

Recently some universities are participating in a set of activities that are much closed from firm creation: science parks, innovation centres and business incubators.

The need to promote the firm creation based on new technologies, the need to facilitate the technology transfer from the University and research centres to the industry and the desire to investigate the firm creation process in itself are in the origin of these new forms of co-operation between universities and firms. Another reason of this collaboration is the need to promote the emergence of a new kind of entrepreneur, the technical entrepreneur, in students and researchers and to help them in the foundation process.

The Science Park is usually located in the University campus and the firms founded there are dedicated exclusively to research. These firms have a strong support on the University's facilities such as: laboratories, information system, database and also the researchers, highly qualified from the University (Veciana, unpublished paper). In some science parks in their last year in graduation the students work in firm's projects that are simultaneously academical projects.

The business incubators provide to the new entrepreneurs a place to locate the newly create firm but also a variety of other support infrastructures (Spitzer and Ford, 1987).

There are a variety of institutions interested in sponsor these activities as a way to promote the regional development by the creation of new firms: universities, local governmental agencies, and central government, etc. The last example, the business incubator, is the one where the role of the University is less frequent. However, these activities haven't provided an effective contact between students and firms in order to create the needed desire and

