Combining effectuation and innovation pedagogy
to entrepreneurial learning

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The theme of the paper: Entrepreneurship

Abstract

According to European Union Comission study (2012) entrepreneurship education makes a difference. Those students, who studied entrepreneurial programmes and activities, display more entrepreneurial intentions and attitudes. They get a job earlier after finishing their studies, start more companies and can also innovate more as employees. That’s why entrepreneurship should be included in all levels of education because innovative ways of thinking and acting are the most valuable competences the society expects of graduates.

Finland’s Ministry of Education published a report in 2009 about how to work for entrepreneurship in higher education (Korkeakoulupohjaisen yrittäjyyden edistäminen). In this report the writers encourage for interdisciplinary groups and modules to acquire new solutions.

According to the ‘Oivallus’ report (Confederation of Finnish Industries 2011) we will have in the future more tasks that need improvising and working ‘without notes’. The capacity to work in a new way to achieve new or improved solutions is becoming crucial.

Also The Rectors' Conference of Finnish Universities of Applied Sciences, Arene ry, has written recommendations (16.03.2011) how to develop students’ entrepreneurial attitudes. Their objective is that 15% of the students would start to work as entrepreneur on a 10 year time scale. (www.arene.fi)

One promising combination to entrepreneurial learning is the recent effectual logic to entrepreneurial opportunity creation (Sarasvathy 2001, 2003, 2008) and the emerging innovation pedagogy approach (Kairisto-Mertanen et al. 2010, 2011, 2012a) which emphasizes the multilevel innovation competences between individuals, groups and networks.

The purpose of this paper is to present the results of a pilot study where the multidisciplinary student owned firms worked in cooperation with the local innovation center to develop pre-phase inventions with new entrepreneurs.
This is an exploratory case study and the results are promising from the entrepreneurial learning and the innovation competencies point of view. More cases are needed and broadening the study to international level would be fruitful.

Keywords: Entrepreneurial learning, Effectuation, Innovation pedagogy.

Introduction

According to European Union Comission study (2012) entrepreneurship education makes a difference. Those students, who have studied entrepreneurial programmes and activities, display more entrepreneurial intentions and attitudes. They get a job earlier after finishing their studies, start more companies and can also innovate more as employees. That’s why entrepreneurship should be included in all levels of education because innovative ways of thinking and acting are the most valuable competences the society expects of graduates. The ‘Oivallus’ report (Confederation of Finnish Industries 2011) divides the working tasks in the future to three different categories: 1) Tasks, where both the objectives and methods are defined beforehand. 2) Tasks, where the objectives are defined beforehand, but the methods the person can decide him/herself. 3) Tasks, where both the objectives and methods are open; they will be defined later during the working process. There will be the continuous improvement and creation of new methods and innovation. In the future, we will have more tasks that need improvising and working ‘without notes’. The capacity to work in a new way to achieve new or improved solutions is becoming crucial.

Ministry of Education of Finland published a report in 2009 about how to work for entrepreneurship in higher education (Korkeakoululupohjaisen yrittäjyyden edistäminen). In this report the writers encourage for interdisciplinary groups and modules to acquire new solutions. They also mention that the first phase in the entrepreneurship education is to support the student’s identification as entrepreneur. That’s why we must offer them processes where they can find the best possible solution for their own pattern for working in entrepreneurial ways. After this identification the students start the innovation process, where they seek, create and recognize opportunities.

The Rectors' Conference of Finnish Universities of Applied Sciences, Arene ry, has written recommendations (16.03.2011) how to develop students’ entrepreneurial attitudes. The main objective is that after their studies in Universities of Applied Sciences all the students would have
adopted entrepreneurial attitudes (intrapreneurship) and 15% of the students would start to work as entrepreneur on a 10-year time scale. (www.arene.fi)

A practice-based approach to entrepreneurial learning is needed and one promising combination to this challenge is the recent effectual logic to entrepreneurial opportunity creation (Sarasvathy 2001, 2003, 2008) and emerging innovation pedagogy approach which emphasizes the multilevel innovation competences between individuals, groups and networks.

The purpose of this paper is to present the results of a pilot study. In this study the multidisciplinary student owned firms – consisting of engineering and business students - co-worked with the local innovation center and a pre-phase new firm. Together they estimated possible production methods, tested materials and looked for distribution channels for a new innovative product.

Theoretical background

In more traditional learning approaches the goals of learning are set beforehand and are made visible at least in the general level in the curriculum but also in detailed manner in the implementation of the single course or module. This has been the pedagogical approach in universities for a long time (Dew et al. 2009). Recently, these learning goals are attempted to be expressed also in the form of competences which should not only be repeated to existing knowledge but innovative and entrepreneurial (Kettunen et al. 2013). The traditional view to learning can be connected with causal logic which is based on the premise “To the extent we can predict the future, we can control it”. The quite recent effectual logic is based on the premise: “To the extent we can control the future, we do not need to predict it” (Sarasvathy 2008, 17). The latter is parallel to third view of future working tasks (Oivallus) where both the objectives and methods are open; they will be defined later during the working process. Effectuation logic leans on the means available for the entrepreneur to be used in interaction with other people to gain effectual stakeholder commitment which can result in new means as well as new innovations. This can be seen also as an entrepreneurial cycle of learning by doing or “learning by effectuating”. The next figure describes the effectual process in which new means and innovations are essential part of contributing to entrepreneurial enhancement – learning and the creation of new firms.
According to Sarasvathy (2008, 73) effectuation “begins with a given means and allows goals to emerge contingently over time”. The important base of this is the interaction and dialogue between individuals, groups and institutions which are the possible stakeholders to be committed to process. Effectuation theory is structured to six elements: 1) starting with means rather than ends 2) affordable loss rather than expected return 3) initial customers as partners and vice versa 4) ignoring competition and stressing partnerships 5) fabricating rather than finding a market 6) unanticipated ends as opposed to the preselected goal (Sarasvathy 2008, 33–38).

Innovation pedagogy is defined as “a learning approach that defines in a new way how knowledge is assimilated, produced, and used in a manner that can create innovations” (Kairisto-Mertanen et al. 2010; 2011). Kettunen et al. (2013) divide the conceptual core of innovation pedagogy to interactive dialogue between individuals, institutions and society – which forms the learning space. These reflect the innovation competencies at three levels: individual, interpersonal and networking, and the final learning outcomes results in the ability to participate in diverse innovation processes, as shown in Figure 2.
Innovation competencies can be divided into three spheres 1) individual scale 2) interpersonal scale and 3) network scale innovation competencies. The role of individual learning is in forming the cognitive background – e.g. the concepts and basic theories and may consist of lectures, reports and examinations. Argumentative learning, reflection, negotiation, debating or other collaborative learning platforms, may be included in the group-based, interpersonal learning. Network learning takes place when the students cross the borders between their own institution and interact with working life and other institutions at national and international level. The examples of network learning are student mobility, entrepreneurship, the projects of partnering companies or other institutions. (Kettunen et al. 2013).

You can find many commonalities between effectuation logic and innovation. First, both concern innovations and the future “ontology” which are not known today. Both are dealing with new means – learning (what I know), interaction and networking with potential partners (whom I know), but also other tangible and intangible assets which become characters of the subject (who I am). Also the outcomes can be common, as innovation processes which can – according to Schumpeter (1934) – result in new products, services, production processes, or even new markets. Also the basic philosophy is the same – entrepreneurial approach to doing things and cooperation with possible stakeholders crossing over the disciplines, industries and national borders. Innovation pedagogy is supporting entrepreneurship and internationalization. Comparing these approaches to the distinction
of exploitative vs. explorative learning (March 1991), both are more explorative which are turned out as risk-taking, experimental, discovering, playing and innovating behavior. In accordance with these commonalities also differences can be recognized e.g. the strong cyclical view of effectuation vs. the more linear approach of innovation pedagogy.

Methodology

This is a qualitative explorative case study which attempts to pilot one innovation project as a learning sphere of combining effectuation and innovation pedagogy to entrepreneurial learning. The pilot project was executed in 2009 in co-operation with The Foundation for Finnish Inventions and their invention development service for private people and micro enterprises called Innovaatiopaja (innovation incubator). The tasks in the project were connected with defining the business potential of the invention or the idea. In practice this turned out different ways of contacting stakeholders to map the opportunities in general but resulted also as concrete knowledge of pricing, producing, developing the product or idea further as well as sales channels and selling the idea. Data gathering methods included observations and discussions with the students and the representative of the Foundation for Finnish Inventions as well as discussions with the entrepreneur him/herself.

Student co-operatives

In Turku University of Applied Sciences, student enterprises, especially co-operatives, are used as a tool in entrepreneurship education. In our own faculty, Technology, Environment and Business (later TEB), there are 12 student co-operatives. These co-operatives are owned by students and they make different real life projects to local business life. Participating students are mostly engineering and business students.

The working principles behind these co-operatives have some difference, depending on the degree program where the students are studying, but the basic objectives are the same: to let the students learn by doing, to let them work in more unpredictable environment, to solve real life problems, to learn communications and organizing skills, teamwork and how to organize your own work, but also to get basic knowledge about how to run a real business. At the moment about 200 of these students are working in co-operatives in TEB (in degree programs like mechanical and production engineering, automotive engineering, sales and logistics). This is one expression of innovation pedagogy, where one key element is that education should develop skills and attitudes that match with the new requirements of the operational environment. These skills are like creativity and
problem-solving skills, preparedness for entrepreneurship, tolerance to difference and uncertainty. (Kairisto-Mertanen 2011,8).

All the co-operatives are independent companies with their own premises. They have a managing director, accountant, project managers etc. They pay salary to their employees, to the students, pay taxes, insurances, make marketing plans, contact local companies etc.

The amount of credits that the student gets depend on how many hours she/he works in the co-operative. To get one credit unit, the student needs to have 27 hour work, seminars, meetings etc.

The students have meetings with teachers and they also have meetings in multidisciplinary teams in order to take care of administrative tasks, organize marketing and the implementation of the projects. They also have to search for information independently from different sources and to have courage to contact interest groups i.e. to find out regulations and other basic information as well as to contact possible customers. They make close co-operation with local companies and also network with students in other student co-operatives. (Hänti, Kairisto-Mertanen, Kallio-Gerlander, Rantanen 2008)

**Discussion and the next steps**

This pilot project showed promising learning outcomes of innovation pedagogy. Although the students felt confused during the project because there were neither explicit goals nor guidelines how the tasks should be done, they found afterwards this kind of innovative approach to learning by effectuating and the involvement in real life ventures value-creating. Also the entrepreneurs found this co-operation promising although the experiment was only a short-term project. As Bureau, Salvador and Fendt (2012) recommend these kind of entrepreneurial learning experiments which are targeted to the mixed audience of small firm entrepreneurs and students might result in more value-creating for the students, faculty members, and the external community.

In the future, this pilot project could be widened to become more systematic part of the students’ learning approach. This could be executed also at international level so that there would be different universities from different countries which could co-operate in finding contacts and new opportunities for small enterprises and at the same time the students could try to act and behave effectually as an entrepreneur themselves. This might also work as a template for fabricating one’s own business when fostering international trade. To get more experience of this kind of learning which combines effectual entrepreneurial logic and innovation pedagogy together with universities
in different areas of Europe, we need more research. For this purpose we have written a preliminary plan for an EU-project for piloting this international effectual entrepreneurial learning where all parties – the students and their universities as well as the university staff and entrepreneurs in SMEs – can learn adopting the innovation pedagogy and effectuation logic.

References


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