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The Effects of Entrepreneurship Courses on Developing Startups at the Technology Parks of the Universities

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Abstract

Over the past five years, university students have been involved in different leadership and innovation projects and activities. Such projects and activities are particularly about the incubation of start-up firms in which the students try to commercialize their knowledge by taking entrepreneurship courses to develop partnerships and the delivery of their innovative products and services at the technology parks of the universities. This study aims to explore the effects of the entrepreneurship courses on developing startups at the technology parks in Turkey.

In order to understand the real effects of taking entrepreneurship courses in establishing startups, the data were collected first using a phenomenological concept analysis. The original data were gathered from 'naive' descriptions by asking open-ended questions and dialogue. The researcher described the experiences based on reflection and interpretation of the research participant's story. The aim of the study is to determine what the experience means for the people who have had the experience of entrepreneurial courses to establish startup companies.

The study generates a perspective about the effects are critically analyzed before and after the entrepreneurial courses taken at the technology parks of two different universities. After analyzing the data about the reasons behind these short entrepreneurial courses, it is so clear that the reasons are coming not only from national, but also from supranational arenas where innovation and knowledge are taken in the entrepreneurial courses as drivers of the competitiveness and growth. By generating technological and entrepreneurial knowledge in the courses for the global market economy, the new startup at the technology parks can be empowered by these courses in the private industries. More importantly, they can decrease the unemployment rate and the country's current account deficit.

Keywords: Technology parks, Higher Education, Entrepreneurial Courses, Startups.

Üniversite Teknoparklarında Girişimcilik Dersinin Startupların Gelişmesine Olan Etkileri

Özet

Son beş yılda, üniversite öğrencileri farklı liderlik, yenilik projelerine ve faaliyetlerine dahil edilmiştir. Bu tür proje ve faaliyetlerin arasında özellikle öğrencilerin yeni ortaklıklar kurarak yenilikçi ürün ve hizmetleri geliştirebilmeleri için girişimcilik dersleri verilmektedir. Bu derslerin ne kadar alınan bilgiyi ticarileştirebildikleri konusunda üniversitelerin teknoparklarındaki startup firmalarında ve kuluçkalama olanların aktivitelerine bakılmıştır. Bu çalışma, Türkiye'de özellikle ön plana çıkan teknoparklardaki statupların bu girişimcilik kurslarından ne kadar faydalandıklarını dolayısıyla bu kursların etkilerini araştırmayı amaçlamaktadır.

Startupların kurulmasında girişimcilik derslerinin gerçek etkilerini anlamak için, veriler fenomenolojik analizi ile toplanmıştır. Ayrıca ilgili belgeler de analiz edilerek kapsamlı açıklamalar yapabilmek için açık uçlu sorular sorulmuştur. Bu çalışmanın amacı, startup firmalarını kuran kişilerin deneyimlerini anlayıp girişimcilik derslerinin bu yeni kurulan firmalardaki kişilerin nasıl davranış değiştirdiğini ve bu kişiler için be eğitimlerin ne anlama geldiğini belirlemektir.

Fenomenolojik analiz kullanarak, girişimcilik derslerinin iki farklı üniversitelerin teknoparklarında yer alan startupların girişimcilik dersi öncesi ve sonrası veriler toplanarak analiz edilmiştir. Bu girişimcilik kursları yenilikçilik konusunda katılımcılara detaylı bilgi verirken, rekabet ve büyüme konularında ulusal ve uluslararası detaylı farkındalık oluşturmaktadır. Küresel piyasa ekonomisinde ticaretleşebilen teknolojik bilgi üreterek, teknoloji transferini sağlamakta, teknoparklarda rekabetçi ve global piyasalarda ayak uydurabilen yeni ve etkin sanayi oluşturabilecek güce sahip olabilmektedirler. Daha da önemlisi, bu dersler etkin ve uygulamalı oldukları takdirde başarılı startupların sayısı artmakta bu da genç işsizlik oranı ve ülkenin cari açığı azaltabilmektedir.

Anahtar Kelimeler: Teknoparklar, Yüksek Öğretim, Girişimcilik Kursları, Startuplar

INTRODUCTION

One of the results of this increasingly overlap between the higher education and private sectors is the increasing amount of students who have endeavored to form their own start-up companies while still in or shortly after leaving university. They participate in entrepreunirial group projects, take classes designed to teach entrepreunirial management, and seek to form partnerships with both established companies and with their fellow students. In this way, they attempt to commercialize their knowledge within the context of the neo-liberal economy.

Entrepreneurial education is defined "process of providing individuals with the ability to recognize commercial opportunities and the insight, self-esteem, knowledge and skills to act on them" by Jones and English. It includes instruction in opportunity recognition, commercialize a concept, marshaling resources in the face of risk, and initiating a business venture. It also includes instruction in traditional business disciplines such as management, marketing, information systems and finance [1]. Using such courses at the University of Tasmania as an example, they point out that entrepreneurial education often involves "student-centered learning", which "represents a challenging departure from traditional mainstream teaching practices", while this teaching method confers many advantages, it also inherently involves some challenges and difficulties in "transferring increased responsibility to students to manage their futures." Jack and Anderson point out that while "enterprise culture", which "is founded on the premise that entrepreneurship is the engine that drives the economy", is becoming increasingly accepted and popular in both the governmental/public sector as well as in university administrations [2]. However, they point out that entrepreneurship does not simply require technical skills, but creative/critical thinking skills as well: "Graduating enterprise students must be innovative and creative to satisfy the need for entrepreneurial novelty - the art. Yet, paradoxically they also need to be competent and multifunctional managers - the science." They write that solid entrepreneurial education should be able to bridge both of these areas together to create truly well rounded and well-prepared students.

The growing number of partnerships between universities and techno-parks also play a key role in this process. As more and more universities open techno-parks on their campuses, the opportunities students have to practically apply the ideas they have developed and the principles they have learned in their entrepreneurship classes grow. Of course, the relationship between techno-parks and start-ups has already been well described and clarified. One needs only look at Silicon Valley, which has a very high concentration of both start-up companies, and entrepreneurship projects that have grown big and techno parks and science centers. This relationship has been observed in many other countries as well, including South Korea [3]. When techno-parks move to universities (as is happening at increasing rate in Turkey and around the world), a third factor or variable enters the equation as university students start to experience this interaction.

While the second part of this study entails learning about the students' individual experiences with regards to this ongoing process, the first part of the study endeavored to examine the recent historical economic and political forces behind this process. Changes that are made to the regulations regarding university-industry relations, as well as changes made in the universities' "human capital" policies, are actually part of governments' national strategies. This is due in no small part to the ultimate effect these partnerships play: by generating technological knowledge as a commodity in the global market economy, the new startups that form at these technology parks can strengthen a country's market in the competitive global economy. More importantly, they can decrease a country's unemployment rate and the its current account deficit, so it is no surprise that state actors take a strong interest in encouraging such relationships. After analyzing the data about the reasons behind these developments, it becomes clear that the reasons are coming not only from national, but also from supranational arenas where innovation and knowledge are taken as drivers of the competitiveness and growth.

Even though this process is occurring rapidly on both a national and international scale, the experiences of the people inside and affected by this process are still of importance. Specifically, this study will aim to relate the experiences of students who have taken entrepreneurial courses at their universities, and will see how they have attempted to convert their knowledge into a 'useful commodity' in the new economic system. One reason this has been selected as the study's focus is to further explore how national, international and international 'macro' level processes in the education sector affect students. Therefore, a phenomenological research approach was utilized for this project in order to obtain qualitative data on this process.

As Lester (2009) writes, the purpose of a phenomenological research approach is to "illuminate the specific, to identify phenomena through how they are perceived by the actors in a situation." The roots of the phenomenological approach lie in the aftermath of World War I, when much of Europe was in ruins and long-held beliefs and traditions that were traditionally taken for granted were being examined and questioned. The German philosopher Edmund Husserl rejected the belief "that objects in the external world exist independently" and that the information about these objects is objective and reliable. Instead, he proposed that the only thing people can be certain about is how things "appear in, or present themselves to, their consciousness...to arrive at certainty, anything outside immediate experience must be ignored" (Groenwald 2004). The idea of 'reality', then, is thus treated instead as a 'phenomena' in the minds of those who experience or perceive a certain event. This is the philosophical basis for what later evolved into the phenomenological research approach, whose primary source of data is the direct experiences of the research subjects. In this project, the experiences of students who have taken entrepreneurial courses and applied this knowledge to various start-up projects of their own will be gathered as data and analyzed.

However, as Giorgi (cited in Stone, 1988) writes even when dealing with 'subjective' experiences of a phenomenon it is still important for the researcher to remain objective. The key concept of phenomenological research is to 'describe'; "to describe as accurately as possible the phenomenon, refraining from any pre-given framework" or biases but endeavoring to remain true to the facts of the phenomena at hand (Groenwald 2004). Qualitative inquires, which fall under this approach, are especially useful when "the researcher is not sure of the variables, and when the theory base is not fully developed" [4].

METHODOLOGY

Data Collection

26 students were interviewed using a "semi-structured" questioning method, wherein a pre-determined list of questions and topics were provided but the students were allowed to freely describe and talk about their own experiences vis-à-vis the entrepreneurial courses and attempting to make their own start-up companies at length. Semi-structured interviewing allowed for both a higher-response rate than a questionnaire as well as the chance to gain more in-depth "naive descriptions" from the subjects participating in a social phenomenon. Of course, vital biographical information about the students, including their class/year and department/major, so some cross-variable comparisons could be performed, while fully ensuring the students' confidentiality.

Participants

The 26 students interviewed were students who selected to take classes related to Entrepreneurship at 2 universities.

Instruments/Measures

A Semi-structured interviewing technique using a set number of 'starting' questions was used. These answers were then tabulated and classified according to the Atlas.ti 7 processing system. Interviews lasted an average of 10 minutes per student.

RESULTS

Out of the 200 students interviewed, 68 (34%) were earning degrees Business Administration/Management while 117 (58%) were students of various science and Engineering departments. The remaining 15 students (8%) of students of various other academic disciplines such as Economics, Political Science, and Translation/Interpretive Studies. 128 of the respondents (64%) were male and 72 (36%) were female. While the students gave a variety of answers for why they took the course, "to gain experience" (89%) and "to strengthen my employment opportunities after graduation" (86%) were cited as the primary reasons for a majority of the students. While all of the students began their start-up as part of the entrepreneurship class they took, only 72 (36%) endeavored to continue with the business after the class was finished. 82% began their start-up company in a group, usually with 2 or 3 other students.

A strong majority (83%) of the participants that they main advantage of the techno-parks was the ability to develop better networks with people in various industries. For this reason, most of this majority (79%) replied that establishing a start-up company was made easier because of the presence of the techno-park at their university. Even though a significant amount of students (42%) reported being generally unhappy with the contents of these courses – due to what they felt was a lack of comprehensiveness in the curriculum - they still recommended taking entrepreneurial courses overall and did not regret taking these courses. Most of the students replied that the networking they achieved at these techno-parks (79%) and the skills they learned in their entrepreneurship classes (86%) would greatly help their financial opportunities in the future. Overall, 91% of the students described having "generally positive" feelings about the presence of techno-parks on campus and the availability of entrepreneurial courses (even if some were not totally satisfied with the content).

There were some significant drawbacks and disappointments among the students, however. 42% of the female students interviewed reported feeling unease with the start-ups due to the higher number of male students present. In some cases, the female students were the only girls in their group and thus complained of a "boy's club" atmosphere. This "boy's club" atmosphere carried over to some of the partnerships and activities taking place inside the techno-parks as well, where a male-female imbalance remained.

The existing gender imbalance in the world of entrepreneurial start-ups, as well as techno-parks, has already been documented by the United Nations Economic Commission for Europe (UNECE, 2003) the OECD (2012) and scholars including Lesa Mitchell (2011). Here we can see another direct consequence of this gender imbalance.

Additionally, some of the students reported being somewhat dissatisfied with the curriculum or content of their courses (42%). Of this group of dissatisfied students, however, 84% said that the presence of the techno-parks helped balanced out some of the gaps in the content of the courses by providing opportunities for 'real-world' experience in order to apply what they have learned.

CONCLUSION

One of the most significant findings from this study was the revelation that some of the female students involved felt unease with the heavy gender imbalance present in most entrepreneurial start-ups and in the world of techno-parks as a whole. Of course, in a process that has been documented by other scholars, the existing gender imbalance in the technology and science sectors, may be a self-reproducing phenomenon (Cohoon, 2006). That is to say, while a wide and varied number of factors may contribute this current imbalance (which is shrinking over time), the existing imbalance or perception thereof may actually serve as a deterrent to more females creating their own start-ups or entering the techno-parks. Meulders et. al. report that this segregation of genders, which extends both horizontally and vertically, exists through multiple levels of a person's career path, starting with the initial imbalance in selected college majors and continuing through employment, especially at higher levels of employment [5]. While barriers for women reaching higher positions exist, the UNECE report does point out that "self-employment", of which entrepreneurial activities fall under, do offer a more democratic and direct way for women to reach leadership positions. Therefore, in order to close this 'gender gap' and promote more equal representation of the genders in these sectors, further research on this 'boy's club' atmosphere, as well as what can be done to remedy it and democratize the atmosphere of the techno-parks and their related start-ups, should be performed in the future.

On a larger scale, it is also important to note that a majority of the students interviewed expressed displeasure with some aspects of their entrepreneurial classes – specifically that either too much or too little 'technical' knowledge was taught , or that too much or too little 'creative thinking' knowledge skills were taught. As Jones and English point out, a balance in both of these areas is critical for creating strong entrepreneurial skills. But students on the whole felt that the holes or gaps in their curriculum were balanced out by the presence of the techno-parks and the opportunities for "practical"

experience and networking they provided [1]. While the growing number of techno-parks on university campuses continues to be a debated subject, many of the students in this study (who of course do not constitute a wholly representative sample of the university as they chose to take such courses and participate in the world of the techno-parks themselves) reported that they generally benefited from the presence of both these classes and from the techno-parks themselves, which is not to say they are perfect entities that have no room for improvement.

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