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Entrepreneurial skills in zacatecanos university students

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The paper aims to compare the effectiveness in the development of entrepreneurial skills of young people based on entrepreneurial development programs of public universities in Zacatecas, Fresnillo and Guadalupe. Today there are several universities that offer Entrepreneur Development Programs, under the assumption that they positively influence the development of entrepreneurial skills of young people. Research in the first stage is exploratory, and the second stage is experimental with the application of the tests to those courses' participants, and then after an co-relational research the variables suggested and the results are analyzed.

Black-Schole equation, put option, call option, Adomian decomposition method.

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Introduction

In recent times there have been a number of studies on issues related to the creation, development, evolution and sustainability of companies, this issue has come to the higher education institutions (HEIs) where in recent years there has been change, meeting today with teaching models are not limited to the training of employees and starting to train professionals and entrepreneurs who start their own businesses (Didrikson, Arteaga and Campos, 2004). Such is the rise of these new models in Mexico it's common to use the term in the IES, entrepreneurs and development is no longer exclusive to some universities.

These advances or changes in teaching models, incorporating entrepreneurship in HEIs have made highlight a term which is important if they are young students who believe in businesses: entrepreneurial skills. In the present investigation the efficiency with entrepreneurship programs offered by some HEIs in developing entrepreneurial skills of their students is analyzed.

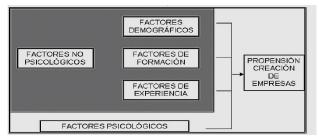
This research consists of five sections, the first describes the problem, justification, definition, assumptions and objectives of the research are planted. In the second the framework of development theoretical programs exposed to entrepreneurship. In the third section the theoretical framework of developing the skills of entrepreneurs is exposed. The fourth section the contextual framework of Zacatecas universities located in the three most populated municipalities of the state, Fresnillo, Zacatecas and Guadalupe is analyzed.

In the fifth section the methodology used to support research and ensuring the accuracy of the results is established.

Background of the Problem

Today HEIs offer courses and programs for the development of entrepreneurs, in spite of these tools, there are several factors involved in the development of entrepreneurs, including the factors mentioned: social, demographic, psychological, and experience formation.

Model of personality traits and the propensity for entrepreneurship



Graphic 1

That is why although the IES offer these tools, thet have to analyze the effectiveness in the development of entrepreneurial skills of university students, as indices of entrepreneurship, Mexico is not as high as in other countries, this analysis is intended to obtain the characteristics of success of the most efficient programs in the development of entrepreneurial skills.

Definition of the problem

With the results of this research it is analysed the effectiveness of different entrepreneurial development programs (EDP) of HEIs in the central part of the state of Zacatecas, in order to determine the determinants of development of entrepreneurial skills of university students in Zacatecas. The research question is: What is the effectiveness in the development entrepreneurial skills of young people based on entrepreneurial development programs at public universities in Zacatecas. Fresnillo Guadalupe?.

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Justification

Determining the effectiveness of PDE in public HEIs in the cities of Zacatecas, Fresnillo and Guadalupe, alows to the determining factors for the development of entrepreneurial skills of young people and tending the foundation for the development or implementation of more efficient methodologies. At this point it is considered that the results of the research can support significantly, not only academia, also the economic environment that effective development of entrepreneurial skills of young people in better economic impact a development environment (Crissien, 2006).

Hypothesis

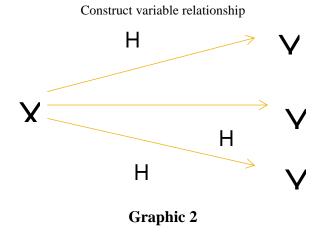
Independent Variable $X_0 \rightarrow$ promoting entrepreneurial university programs.

Dependent Variable $Y_0 \rightarrow$ development of entrepreneurial skills of young people.

Description of Research variables

| Variable | Descripción | Indicadores |
|----------|--|---|
| X | programas universitarios de fomento emprendedor | Número de alumnos participantes |
| Υ | Desarrollo de habilidades emprendedoras de los jóvenes. | Nivel de habilidades emprendedoras en los alumnos Cantidad de empresarios egresados)/ número de alumnos que han llevado el programa Cantidad de egresados trabajando en áreas directivas o gerenciales. |

Table 1



General Hipothesis



Entrepreneurial development programs positively influence the development of entrepreneurial skills of young fashion.

Specific hypotheses

$$X_0 \longrightarrow Y_1$$

H₁: Entrepreneurial development programs positively influence the creation of companies.

$$X_0 \longrightarrow Y_2$$

 $H_{2:}$ Entrepreneurial development programs positively influence the graduates to obtain work in executive or management positions.

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Objectives

General Objective

Compare the effectiveness in the development of entrepreneurial skills of young people based on entrepreneurial development programs at public universities in Zacatecas, Fresnillo and Guadalupe.

Specific Objectives

Compare the number of companies created by graduates who have taken the entrepreneurial development program in public universities in Zacatecas, Fresnillo and Guadalupe.

Compare the number of students working in senior management positions or having taken the entrepreneurial development program in public universities in Zacatecas, Fresnillo and Guadalupe.

Theoretical and conceptual framework of university entrepreneurial development programs.

It is important to know the main concepts and theories about entrepreneurial development programs, then the concept of entrepreneurship, the development of the use of this term throughout history, to continue presenting the development of entrepreneurship education programs, as well as the main lines of the PDE:

Chronology and entrepreneurial concept

The word entrepreneur comes from the Latin root prendere, meaning catch. For several authors, including Martínez (2008), the word entrepreneur comes from the French word entrepreneur meaning rush, however the concept of entrepreneurship has been changing over time.

In 1755, Cantillon says the entrepreneur as a person who is able to take risks to make profits in the future.

Jean-BaptisteSay Later, in 1803, presents the entrepreneur as a person who runs a business, ie as an entrepreneur (Drucker, 2006). Schumpeter (1984) mentions that the entrepreneur is the innovator who helps economic growth transforming an innovation (product, process, procedure, etc..) In one convenient product, also defined as a person who gathers resources, organizes and provides leadership talents for commercial success. To Carland, cited by Galan (1994).

The difference between an entrepreneur and a small business owner is that the former creates a company in order to make it grow and profit, using concepts and techniques of strategic direction while small business owners create businesses for personal gain. Among modern concepts we can draw Lerma et al. (2007) pointing to the entrepreneur as "the man or woman who are in the process of setting up a micro, small or medium business, starting a business idea or project that is the result of an aggressive agenda" (Lerma et al., 2007, 368)

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A concept that can not be missed is that of those who are within the established organizations responsible that are identifying organizing opportunities, the necessary resources implement and an innovative idea, which Osz (2010) defines intrapreneur.

Concept of entrepreneurship development programs (EDP)

The beginnings of courses for business development in universities has its beginnings in 1947 in the Harvard Business School (Katz, 2003). In the seventies developed programs for entrepreneurs in at least sixteen universities of USA having being followed up in 1999 to develop hundred seventy American universities with entrepreneurship programs (Inglés and Jones, 2004). To Lerma et al. (2007) the entrepreneur program is to implement, integrate and implement the knowledge acquired by students of different careers in order to generate innovative solutions that enable them to succeed in the business world and the foundation of an entrepreneurship.

Lines in the models in the training of entrepreneurs

At the present the question remains: Can we really teach students to be entrepreneurs? Aronsson (2004) and Kirby (2004) found empirical evidence that the acquisition of knowledge about entrepreneurship, may be a factor influencing the development of entrepreneurial skills.

First, Aronsson (2004) points out that entrepreneurship can be encouraged through teaching. In addition, Kirby (2004) argues that entrepreneurial skills are not only innate, but can also be acquired through learning.

In summary, for these authors the skills to be an entrepreneur can be encouraged. So, being an entrepreneur does not only depend on genetic characteristics of individuals.

In fact, Galloway and Brown (2002), an empirical study found that students who chose at least one course in entrepreneurship showed signs of starting a business in subsequent years.

Therefore, can be consider that between the effects of training for entrepreneurship, are the following:

- Build and transfer theoretical knowledge;
- Develop skills, knowledge, attitudes and intentions towards entrepreneurship.

Major theories of PDE models

Martínez (2008) refers to two main theories about the PDE, programs focused on the development and growth of enterprises and other programs related to the development of behaviors and motivation, attitudes entrepreneurs, calling latter entrepreneurial skills, seeing them as a strategy to develop a structural and behavioral change within and outside the organizations. Moreover mentioned institutional within an approach to entrepreneurship, the following theories:

Theory of marginalization

Note that marginalization is a trigger to become entrepreneurs, focusing on students with an unstable employment situation.

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Role theory

Mentions that there are regions that are more likely to develop than other entrepreneurs, exploring the possibility of implementing PDE unique region.

Network theory

Stresses the importance of social networks in entrepreneurship. These social networks are considered as the links between the different sectors involved in the creation of companies, from friends, family, customers, investors, suppliers, and others.

Empirical results on PDE

Journals were created in start-ups and there have been several studies on topics of entrepreneurship, among which we can mention:

- Development of models that measure the quality of programs offered by different universities in the world (Vesper and Gartner, 1997);
- Measuring the impact that training has entrepreneurship in regional development, and analyze the current situation of the countries that have included programs that encourage entrepreneurship (Iyigun and Owen, 1999).
- Measuring the impact of entrepreneurship training has had on other disciplines taught in business schools (Hynes, 1996; Finkle and Deeds, 2001; Markman, Phan, and Gianodis Malkin, 2005).

- Studies of the effects of training on the attitudes and intentions of students

towards entrepreneurship (Clouse, 1990; Peterman and Kennedy, 2003).

- Analysis of the different programs available (McMullan and Gillin, 1998; Brush, Duhaime, Gartner, Stewart Katz, Hitts, Alvarez, Mayer and Venkataraman, 2004; Finkle, Kutatko and Goldsby, 2006) entrepreneur development.
- Analyze and identify the most important content in these programs (DeTienne and Chandler, 2009)

Below is a summary of the main information that IES has a nationally recognized program for entrepreneurs is presented:

Top PDE in Mexican IES

| IFO | | 01: " |
|-------|-----------------------------------|---|
| IES | Area | Objetivo |
| UNAM | Centro UNAM | Que el alumno aprenda a desarrollar una cultura empresarial tanto de innovación como de comercialización de productos y servicios, para la creación y promoción de empresas mexicanas que permitan, mediante bases tecnológicas, propiciar su nacimiento y desarrollo competitivo, acorde con las necesidades del país |
| ITESM | Emprendetec | Desarrollar una plataforma de modalidad emprendedora en todas sus carreras en donde el alumno puede cursar la educación superior o alguna especialidad, con materias en las que le brinden los conocimientos básicos para que al egresar abra su propia empresa. |
| IPN | CIEBT | Estimular la capacidad empresarial de los participantes y la aplicación de nuevas tecnologías, para crear nuevos productos que se adapten a los cambios del mercado y apoyar proyectos de innovación y desarrollo tecnológico que se orienten a la modernización de la planta productiva del país, desde la fase pre comercial, hasta la integración de estas empresas al mercado formal. |
| ITAM | Asociación de empresas ITAM | Se forma con la idea de sembrar la semilla, fomentar la filosofía y el espíritu emprendedor a través de experiencias vivenciales. |

Table 2

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Proposed conceptual theoretical model

Once analyzed the framework described above, provides that an entrepreneur is the person who creates the change from the early use of the term to refer to takers risk, entrepreneurs, innovators.

An entrepreneur is a person who changes the course and the circumstances of their environment, differently to meet the needs of its customers, suppliers, employees, partners and competition, involving not only creating businesses but also to all those who as part of them generate improvements.

Today, IES have identified the need to train, plus employees, entrepreneurs impacting professionals in their environment, thus linking HEIs with their environment; the entrepreneur develops this impact on different indicators:

- As the creator of Companies. Creates jobs, tax revenues enable the business cycle develops products and services necessary for your environment, etc.
- As a manager that is part of a company. Develops tools to improve and increase the level of productivity and competitiveness of the organization.

Therefore in speaking of entrepreneurs, entrepreneurs reference as well as all employees able to achieve significant improvements in their workplaces and helping to improve their competitiveness is both.

There are several theories for the training of entrepreneurs, some supporting the hypothesis that entrepreneurs can be formed through schools, others support the hypothesis that entrepreneurs are born, that are external factors that have nothing to do with academics, which lead a person to be an entrepreneur; There are also theories that tell us that an entrepreneur is born and / or which is used as a basis for this research, so used and the experience you have, the entrepreneurs have characteristics that are formed through their daily lives, through various experiences, also the idea that says that there are factors that trigger sometime entrepreneurship is shared.

It also deals with the academic aspect of entrepreneurial skills training, this is where the research is focused to analyze and determine the characteristics of the programs that most effectively develop the entrepreneurial skills of young people.

Today, most PDE focus or end objective is based on the creation of companies, very few studies have PDE about motivating employees to be change, focusing only and relating the word entrepreneur with the employer.

However for the purposes of this work is vital to analyze the two concepts on the one hand and employers on the other, not less important is the formation of entrepreneurs, employees who are generating significant positive change in organizations. Both concepts are important in driving regional economic development, and little importance is given to the intrapreneurs.

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Conceptual framework of entrepreneurial skills

To discuss entrepreneurial skills must be understood as part of the corporate culture, so that quote below three definitions of this concept:

To Pumpin (1988) corporate culture encompasses the set of views, norms and values that develop within a company and to characterize the behavior of managers and staff as a whole.

Vargas (2007) mentions that corporate culture provides the framework of values that shape the production and utility activities, which is also mentioned that "provides the evaluative framework that provides the sense of system of relationships between the characteristics of the organizations. Call companies and their key players, business owners and managers. To Babor (2007) corporate culture is "the proclivity of doing business or the tendency to generate or foster an entrepreneurial spirit in people," a concept that relates better to the purposes of this research, in order to generate the entrepreneurial spirit is necessary to review the characteristics or skills that entrepreneurs must have.

Entrepreneurial skills are related to the characteristics of an entrepreneur and Gilder (1984) describes entrepreneurs as people who are capable of learning, pursuing their goals despite setbacks and frustrations and ultimately realize success by breaking old patterns and create your own new order. For Schumpeter (1984), entrepreneurs are creative and innovative part, not only in business creation but the creation of new forms of production, management, generate products, among others.

Main theories on the development of entrepreneurial skills

In the doctoral thesis Martínez (2008), presents an overview of the different theories that have been considered for the development of entrepreneurship skills, speaking from Schumpeter's theory that although his studies on the characteristics of the entrepreneur are limited, is the first to develop.

For the resume several authors, including Mark Blaug, who is considered the pioneer in studies of entrepreneurship in the economic approach which presents an analysis of the history of theories of entrepreneurship, noting that the first works are developed in the seventeenth century, highlighting the contributions of Castillón and Say.

Concluding, after an analysis of several authors, that the employer has three basic functions: contribution to capital, management and decision-making. It also analyzes the authors Herbert and Link, which state that an entrepreneur takes risks arising from uncertainty, is innovative, takes decisions, is an industry leader, organizes and coordinates financial resources.

Empirical results on entrepreneurial skills

Different studies on entrepreneurial skills, from its definition to the impact of certain courses or programs in developing these skills. One of the studies reviewed is that of Alcaraz (2004), which mentions Timmons (1985), cited by Kao (1989), which states that the entrepreneur is a person with very specific characteristics, including:

- Total commitment, determination and perseverance.

- Ability to achieve goals
- Orientation to goals and opportunities.
- Initiative and responsibility
- Persistence in solving problems
- Realism
- With self-confidence
- High levels of energy
- Search feedback
- With a high internal control
- Calculated Taker Risk
- Low need for status and power
- Integro and reliable
- Tolerant to change

Other features Alcaraz (2004), after a review of more than fifty authors who in turn cite other hundred select the ten characteristics of successful entrepreneurs, most references in the literature review, which are:

- Creativity
- Initiative
- Self-confidence (confidence)
- Energy and work capacity
- Perseverance
- Leadership
- Acceptance of risk

- Need for Achievement
- Change Tolerance
- Problem Management

Proposed conceptual theoretical model

For the analysis of entrepreneurial skills, is to make its own questionnaire, based on some other authors, we framed and differentiate skills that can be developed by a PDE and those that are developed by external academic factors. As you take the first reference profile entrepreneur Alcaraz (2004), which analyzes the ten characteristics mentioned in the previous paragraph.

Contextual framework. Map of Zacatecas

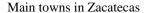
Zacatecas is one of the 31 states with the Federal District comprise the 32 federative entities of Mexico.



Graphic 3

The metropolitan area Zacatecas-Guadalupe is the most populous state with 298.167 inhabitants. Fresnillo followed with 213.139 inhabitants. Rio Grande with 62.693 inhabitants, with 61,188 inhabitants and Bonnet Jerez with 57.610 inhabitants (2010). That's why in this study the three most populated areas are taken: Zacatecas, Fresnillo and Guadalupe:

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Graphic 4

Zacatecas Education

The distribution is education in Mexico and in the state of Zacatecas, in reference to each level is presented:

Education level in the population of 15 years and over in Mexico and Zacatecas

| Ent klad federat iva | Pobladón de 15 y más años | Sin Instruction | Primaria Incompleta | Primaria completa | Secundaria Incompleta | Secundaria completa | Media superior | Superior |
|--------------------------|------------------------------|--------------------|------------------------|----------------------|--------------------------|------------------------|-------------------|----------|
| 2000 | | | | | | | | |
| Estados Unidos Mexicanos | 62,842,638.00 | 10.2 | 18 | 19.1 | 5.3 | 18.9 | 16.7 | 10.9 |
| Zacatecas | 853,116.00 | 9.1 | 28.1 | 23.1 | 5.4 | 15.5 | 10.6 | 7.5 |
| 2005 | | | | | | | | |
| Estados Unidos Mexicanos | 68,802,564.00 | 8.4 | 14.3 | 17.7 | 4.2 | 21.7 | 18.5 | 13.6 |
| Zacatecas | 907,857.00 | 7.5 | 22.9 | 20.9 | 4.9 | 20 | 12.9 | 9.8 |
| 2010 | | | | | | | | |
| Estados Unidos Mexicanos | 78,423,336.00 | 7.2 | 12.6 | 16 | 5.2 | 22.3 | 19.3 | 16.5 |
| Zacatecas | 1,021,479.00 | 6.3 | 18.2 | 18.2 | 6 | 24.3 | 14 | 12.3 |

Table 3

In the three towns mentioned in this research are the following IES:

Public:

- Universidad Autónoma de Zacatecas (UAZ)

- Instituto Tecnológico de Zacatecas (ITZ)
- Instituto Tecnológico Superior de Fresnillo (ITSF)
- Universidad Pedagógica Nacional (UPN)
- Universidad Politécnica de Zacatecas (UPZ)
- Universidad Tecnológica del Estado de Zacatecas (UTEZ)
- Instituto Politécnico Nacional (IPN)

Private:

- Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)
- Universidad Autónoma de Durango (UAD)
- Universidad Interamericana para el Desarrollo (UNID)
- Universidad Autónoma de Fresnillo (UAF)
- Universidad del Desarrollo Profesional (UNIDEP)
- Universidad Víctor Frankl
- Universidad Sierra Madre
- Instituto Universitario de Posgrados en Alta Dirección (IUPAD)
- Universidad del Norte de México (UNM)

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- Universidad de la Veracruz (UNIVER)
- Universidad de Tolos
- Instituto de Graduados en Administración (IGA)

Story about entrepreneurship in Zacatecas

First research, collect data from the IES

Research Methods

Type of research

The investigation is in its early stages of exploratory documentary, it has provided information gathering HEIs Fresnillo, Zacatecas and Guadalupe, in its second stage is descriptive and experimental application of the test participants' courses then through a co relational research proposals variables and results will be discussed.

Research Design

Research Design

| Variable | Descripción | Indicadores | Instrumentos | Itesm |
|----------|--|--|--|--|
| X | programas universitarios de fomento emprendedor | Número de alumnos participantes | Listas de inscripción de alumnos al curso | Número de alumnos inscritos |
| Y | Desarrollo de habilidades emprendedoras de los jóvenes. | Nivel de habilidades emprendedoras en los alumnos | Test inventario del perfil emprendedor | Calificación |
| | | Cantidad de empresarios (ex alumnos)/ número de alumnos que han llevado el programa | Registros de vinculación de empresas creadas por ex alumnos. | Número de empresas creadas por ex alumnos. |
| | | Cantidad de egresados trabajando en niveles directivos o gerenciales/ toral de egresados. | Registro de vinculación de empleos de egresados | Número de egresados trabajando en niveles directivos o gerenciales. |

Table 4

Research tools

One of the questionnaires that were applied to measure the development of entrepreneurial skills is the "Inventory Profile Entrepreneur" questionnaire (Alcaraz, 2004), which applies students before entering the program to promote the entrepreneurial development and finally, the same found in the attachments section.

Determination of sample size

Simple random sampling, with a confidence level of 95%, to be applied to the students enrolled in selected universities PDF will be used

Preliminary analysis

The development of entrepreneurs is an aspect that is influenced by several factors: cultural, personal, psychological geographical, academic. Actually between HEIs are becoming detonator of entrepreneurial increasingly plan HEIs take entrepreneurial development as part of their promotion. While PDE are one of the factors that help to boost the entrepreneurship in young people university, depends on the features that have the PDE effectiveness development in the entrepreneurial skills, on the one hand there are programs that develop these skills in various subjects career, on the other hand there are "programs" where only the matter of "entrepreneurial development" takes. contribution of this first part of the research focuses on the latter programs, where the development of entrepreneurs to one subject is oriented; various IES assume by teaching the subject of:

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"Entrepreneurial Development", "Evaluation and development of investment projects," or other similar comply with PDE. The effective development of entrepreneurs goes beyond offering a class, or to develop a productive project or investment, something that confused today.

It is believed that developing an investment project or production is to be an entrepreneur or not, although it is part of the knowledge of entrepreneurs who are entrepreneurs are vital part for "intrapreneurs" or entrepreneurs employees" who work in companies that help to develop internal procedures or processes that transform businesses into competitive businesses.

The development of entrepreneurs has to be focused at the same development of entrepreneurial skills such as creativity, leadership, teamwork, be proactive, creative, among others, and it is impossible to develop these skills in one subject or simply develop an investment project.

The IES. seeking develop to entrepreneurs, will have to incorporate the development of entrepreneurial skills in their various subjects, even from the "technical" matters, and not offer them exclusively during matter where an investment project develops, this may be one of the large differences with private HEIs identified as true entrepreneurial developers, because these last are in a developing entrepreneurial skills steadily throughout the academic lives of their students.

Regardless of the type of profession you are pursuing, it ensures that regardless of Engineering or Bachelor graduates have a good development of entrepreneurial skills, enabling them to join the working life either as entrepreneurs or as employees in executive or managerial levels.

Conclusions

An entrepreneur is a person who changes the course and the circumstances of their meeting environment differently, common, the needs of their environment, their customers, suppliers, employees, partners and competition, a term that involves not only creating companies (employers) but also to those who generate them as part of improvements that lead them to be more competitive.

The development of entrepreneurs is a model that is increasingly applied more frequently in the IES, a change in them where begin to form only help employees to begin with the training of professionals with entrepreneurial skills, under this scheme are reflected IES or PDE models that apply throughout the race or PDE, that apply to one or only a few materials, just as there PDE offered as optional courses for students who need it. However, the effectiveness with the PDE has not been widely measured, at least in the state of Zacatecas have no indicators or data proving the efficiency of the PDE, there are no studies to compare the efficiency between different PDE, which is intended to analyze the PDE and its effectiveness in the IES of the main municipalities of the State:

Zacatecas, Fresnillo and Guadalupe, where these three municipalities with the highest number of HEIs in the state.

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The effectiveness is evaluated in three areas that, in my view, are key indicators to check if a PDE is working:

- Developing entrepreneurial skills of the participants, measuring their degree creativity, initiative, self-confidence, energy and capacity for work, perseverance, leadership, risk taking, need for achievement, tolerance for change and problem management in a course of time, is evaluated at the beginning of the PDE and the end of it to measure the degree of development.
- The number of companies that have been created by students or alumni of these universities; entrepreneurship is an indicator for any entrepreneur program, is its purpose or goal, such is the case for the SE indicators for business incubators are the number of births and the number of jobs created.
- The number of intrapreneurs that these programs have been developed, ie the number of alumni who are working at senior levels within organizations, this is one of the indicators that have been neglected to talk about entrepreneurship, however, by personal experience, not all the effectiveness of a PDE has to be reflected in the creation of companies also in the generation of employees that help existing businesses grow and become more competitive.

With these indicators we can see how effective was the PDE, from different perspectives, to compare and analyze their characteristics.

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