



RESEARCH ARTICLE

LEARNING TO UNDERTAKE. IS THERE ANY RELATIONSHIP BETWEEN ENTREPRENEURIAL BEHAVIOR AND LEARNING STYLES?

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ARTICLE INFO

Article History:

Received 03<sup>rd</sup> September, 2016  
Received in revised form  
04<sup>th</sup> October, 2016  
Accepted 15<sup>th</sup> November, 2016  
Published online 30<sup>th</sup> December, 2016

Key words:

Entrepreneurial behavior,  
Learning styles.

JEL Classification: L26

ABSTRACT

This paper presents the results of research conducted with university students in order to determine connections between their propensity to entrepreneurship and their predominant learning style. The relationship that could exist between family business background and work experience with entrepreneurial behavior are also explored. A sample of 240 college students was designed. Computerized Adaptive Test to assess personality Enterprising (Pedrosa, 2015), and the Honey-Alonso Questionnaire on Learning Styles (Alonso, 1991) were used as instruments to collect information. The information was processed using the software XLSTAT and analysis of variance was used to determine which one is the difference between the subsamples studied. Evidence of connection between the theoretical and pragmatic styles of learning with the general index of entrepreneurship were found, as well as between this indicator and work experience. The originality of this article is the exploration of the relationship between entrepreneurship and learning, whose ties have been little studied.

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Citation: Francisco Javier Segura Mojica, Ricardo Rodríguez Tovar and Alma Lorena Rodríguez Contreras, 2016. "Learning to undertake. Is there any relationship between entrepreneurial behavior and learning styles?", *International Journal of Current Research*, 8, (12), 43271-43274.

INTRODUCTION

Entrepreneurship and behavior of entrepreneurs are phenomena that in recent years have attracted the interest of many researchers, since both are associated with economic growth, social development, and more specifically, with the use of resources and capabilities of a community to generate wealth and satisfy their own needs. The word *entrepreneurship* is a derivation of the french word *entrepreneur* whose meaning is related to the willingness to make decisions or initiate a project (Rodríguez, 2009).

Entrepreneurial behavior

Entrepreneurial behavior is defined as "the discovery, evaluation and exploitation of opportunities to introduce new products, services, processes, forms of organization or market society" (Shane and Venkataraman, 2000; Pedrosa, 2015). Because of the importance of the opening of economic units, entrepreneurship is used almost as a synonym for business creation. However, a thorough review of the concept leads us to find other connotations connected with innovation, uncertainty, risk and learning. For example, Kundel (1991), refers to entrepreneurship as "the management of radical and

discontinuous change, or strategic renewal, regardless of whether that strategic renewal occurs inside or outside existing organizations, and regardless of whether this renewal gives place or not the creation of a new business entity. On the motivations to undertake, there is talk that there is a profile of the entrepreneur, whose main features are related to attitudes. Formichella (2004) notes that the difference between the entrepreneur and the common individual is determined by a different take risks, face problems, discovering hidden opportunities, create communication networks, form teams and overcome fears propensity. There are different ways of organizing features, and therefore define the profile of the entrepreneur. Among the first approaches to the subject, is the work of Hornaday (1982), who proposed a list of 42 features. Sanchez (2010) based on Covin & Slevin (1989); Cromie (2000); Filion (2003); and Vecchio (2003), reduces the list to four features that are Locus of Control, Self-efficacy, risk and proactivity. For the purposes of this investigation, is taken as a basis the proposal by Pedrosa (2015) classification, who builds on the model Rauch and Frese (2007), which considers a global vision of entrepreneurial behavior, and integrates the general features with more entrepreneurial own specific behavior. Thus, the features already mentioned in the previous paragraph is added the Achievement Motivation, Innovation, Optimism and Stress Tolerance. Based on this model it was developed Computerized Adaptive Test to assess personality Enterprising (Pedrosa, 2015), which was used as a tool for

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collecting information in the present study. As can be seen, the study of entrepreneurial behavior refers inherent personality traits (stress tolerance, motivation, risk tolerance), attitudes (optimism, innovation, proactivity) and even beliefs (locus of control and self-efficacy). However, little is said about the factors that may encourage the development of any of these features, or if they can be related to other aspects of personality, such as the type of intelligence or learning style predominant in each individual.

### *Entrepreneurship and learning styles*

While there seems to be some consensus on the features that characterize entrepreneurial behavior, are varied theoretical approaches regarding factors that may be associated with their training and development. Fonrouge (2002) classifies these approaches into four categories: behavioral, psychological or cognitive, economic and process. The behavioral perspective emphasizes the psychological profile that characterizes the successful entrepreneur; the economic outlook for its part, explains the enterprise from the perspective of homo economicus, whose orientation is to maximize the benefit and welfare; the process perspective relates to the ability to make strategic approaches that allow the individual to use resources and capacities to seize opportunities (Rodríguez, 2009). Moreover, psychological or cognitive perspective is oriented towards the representations that the individual is about their behavior, the results of these in terms of success or failure (Cooper et al, 1995), but also relates to how they build their idea of reality and perceived opportunities and risks. In other words, this perspective is related to the way in which the individual learns. Considering the above, it seems interesting to investigate in the field of learning styles, to try to find some link between the willingness of the individual to acquire knowledge and their propensity to entrepreneurship. Woolfolk (1996) defines learning style as "cognitive, emotional and physiological traits that serve as stable indicators of how students perceive interactions and respond to their learning environments." In its cognitive aspect it has to do with the structuring of contents, using concepts, information organization and representation of the results. In its emotional aspect, it relates to the motivation to learn and expectations that produces knowledge; while the physiological aspect is linked to the biological cycles to which is subject the individual, for example, waking and sleeping hours. They have developed several models to explain the organization of individual learning styles according to; for example in his theory of experiential learning, Kolb (1984) proposes a classification in which the style is the student's response to both stimuli and the use of these in the context of learning, in such a way that some learn by experimentation, others by analysis, others by observation and some by the action (Cano, 2000). On this basis Kolb and others like Honey and Mumford (1986) and Alonso, Gallego and Honey (1995), cited by Camarero et al (2000) propose four learning styles that show how the individual prefers access knowledge:

- **Active:** It is focused on direct experience, and tends to assume roles of animator, discoverer, and improviser.
- **Reflexive:** Focuses on observation and data collection, which is characterized by being receptive, analytical and patient.
- **Theorist:** Based on the abstract conceptualization and forming conclusions, which acts in a methodical, logical, objective and structured manner.

- **Pragmatic:** Its emphasis is on experimentation and practical use of ideas, so it behaves realistically and results-oriented.

Kolb (1984) suggests that learning can have different starting points, for example, direct experience or abstract experience; and that these experiences into knowledge through reflection and active experimentation. It recognizes that the phases acting experience-reflection-theorizing-appear in most people, but it also follows that most specialize in one or two of these functions. Specialization in the way of learning, suggests the need to structure strategies of teaching and learning that encourage different styles, for what could be suitable for active students, as practices with immediate results or challenges may not be as suitable for theoretical students, who generally seem more motivated when reviewing models, theories or concepts that pose them a challenge (DGB, 2004). This research was raised to determine if any of these styles, whose adoption is set in the early stages of cognitive development may be related to the development of entrepreneurial profile of college students, and therefore, whether academic programs may have adjustments that strategically geared to stimulate entrepreneurship.

## **MATERIALS AND METHODS**

For the study, two instruments were used: Computerized Adaptive Test to assess personality Emprededora- TAI (Pedrosa, 2015), and Honey Alonso Questionnaire on learning styles CHAEA (Alonso 1991). The TAI is an instrument consisting of 105 items, grouped into eight categories: self-efficacy, autonomy, innovation, locus of control, achievement motivation, optimism, stress tolerance and risk taking. The sum of the scores that throws each indicator was used to construct the General Entrepreneurship Index, which is the dependent variable of this research. The TAI was validated showing high reliability of the different subscales ( $\alpha > .81$ ) as well as evidence of content validity and construct appropriate. It has high internal consistency whose general factor  $\alpha = 0.96$  groups the eight specific personality traits entrepreneurial defined (Pedrosa, 2015). It should be noted that the TAI were added him the items "Do you have work experience?", "Does your family has or had a business?" And "Should be affirmative response have you participated in business?" allowing us to incorporate research variables work experience and entrepreneurial background. Moreover, the CHAEA questionnaire consists of 80 items, related to the four learning styles mentioned in Kolb model: pragmatic, theoretical, reflective and active. Reliability analysis of the questionnaire CHAEA shows a reliability factor alpha global Kuder-Richardson (KR-20) 0.620, which is considered suitable for use in college students (Maureira, 2013). The baseline questionnaires were applied to a sample of 240 students of the curriculum of Bachelor in Business Administration and Engineering Business Management at the Technological Institute of San Luis Potosi, Mexico, between 15 and 30 August 2016.

**Hypothesis:** There were 2 working hypothesis; the first focused on responding if employment history and family business are related to the general index of entrepreneurship; and the second aimed to determine whether learning styles defined by Kolb model are related to the general index of entrepreneurship.

H1a: Student participation in family business experiences related to its general index of entrepreneurship.

H1b: The student work experience relates to your overall rate of entrepreneurship.

H2a: Scoring high in the style of pragmatic learning are related to the overall rate of student entrepreneurship.

H2b: Scoring high in the style of theoretical learning are related to the overall rate of student entrepreneurship.

H2C: Scoring high in reflective learning style are related to the overall rate of student entrepreneurship.

H2d: Scoring high in the style of active learning are related to the overall rate of student entrepreneurship.

For data analysis, statistical software XLSTAT was used; subsamples were constructed as shown in Table 2, and the variance of the subsamples were analyzed using hypothesis testing student t yz, in order to determine whether the difference between the means is equal to 0 (null hypothesis) or different 0 (alternative hypothesis).

## RESULTS

Table 1 shows the descriptive statistics of the TAI and CHAEA questionnaires applied to the sample of 240 students. Table 2 shows the results of the analysis of variance. As shown, p values in z and t tests for hypotheses 2, 3 and 4 are <0.05, which is the significance level

**Table 1. Descriptive statistics of the sample used**

Factors entrepreneurialism	N	Average	Standard deviation
Self-sufficiency	240	3.97256264	0.42337719
Autonomy	240	3.71735348	0.35587408
Innovation	240	3.94672619	0.36044467
Locus Control	240	4.40796296	0.44288728
Achievement Motivation	240	3.95657051	0.45196451
Optimism	240	4.02949074	0.4174395
Stress Tolerance	240	3.33632937	0.57660796
Taking Risks	240	3.82206439	0.60681495
<b>General Index Entrepreneurship</b>	240	31.1890603	2.42291834
<b>Learning style</b>			
Active	240	9.61603376	3.01819348
Reflexive	240	11.278481	3.31258122
Theoretical	240	10.7932489	3.19983534
Pragmatic	240	10.3037975	3.30782532

Source: Made by myself

**Table 2. Analysis of variance**

Dependent variable: General Index Entrepreneurship (GEM)															
Variable	Obs.	GEM average	Stand. Dev.	Z test for two independent samples / bilateral test.					T test for two independent samples / bilateral test.					Decision	
				Dif.	z (Observed value)	z  (Critical value)	p-value (bilateral)	alfa	Dif.	t (Observed value)	t  (Critical value)	p-value (bilateral)	alfa		
Subsample 1: The student has not participated in any family business	133	31.088	2.346	-0.232	-0.723	1.960	0.470	0.050	0.050	-0.232	-0.730	1.970	0.466	0.050	H1a rejected
Subsample 2: The student has engaged in a family business	107	31.320	2.554												
Subsample 1: The student has work experience	186	31.382	2.398	0.791	2.095	1.960	0.036	0.050	0.050	0.791	2.112	1.970	0.036	0.050	H1b accepted
Subsample 2: The student has no work experience	54	30.591	2.434												
Subsample 1: Students pragmatic style score <10	95	30.649	2.159	-0.904	-2.947	1.960	0.003	0.050	0.050	-0.904	-2.849	1.970	0.005	0.050	H2a accepted
Subsample 2: Students with pragmatic style score ≥ 10	144	31.553	2.548												
Subsample 1: Students with theoretical style score <10	78	30.524	2.135	-0.980	-3.135	1.960	0.002	0.050	0.050	-0.980	-2.963	1.970	0.003	0.050	H2b accepted
Subsample 2: Students with theoretical style score ≥ 10	161	31.505	2.515												
Subsample 1: Students with reflective style score <10	75	31.012	2.526	-0.256	-0.740	1.960	0.460	0.050	0.050	-0.256	-0.754	1.970	0.452	0.050	H2c rejected
Subsample 2: Students with reflective style score ≥ 10	164	31.269	2.400												
Subsample 1: Students with active style score <10	115	31.131	2.535	-0.111	-0.351	1.960	0.726	0.050	0.050	-0.111	-0.352	1.970	0.725	0.050	H2d rejected
Subsample 2: Students with active style score ≥ 10	125	31.242	2.344												

Source: Made by myself

alpha determined for both tests, with a confidence interval for the difference between the average 95% so it is considered that the average of the samples is different from 0, which would lead us to accept the above hypothesis. In the case of scenarios 1, 5 and 6, p values are greater than 0.05, so it is considered that the difference between the mean is zero, and this would lead us to reject the respective hypothesis.

## Conclusions

The analysis of variance allows us to preliminarily conclude the following:

- Family history of entrepreneurship not influence the propensity to undertake by students, since there is no difference in the overall rate of entrepreneurship among the respective sub-samples.
- However, work history appears to influence the propensity for entrepreneurship, as seen in testing hypothesis 2
- Learning styles that seem to be related to the propensity to undertake are pragmatic style (hypothesis 3) and theoretical (hypothesis 4), while the active and reflective styles do not appear to be related to the overall rate of entrepreneurship.
- It should be noted that the pragmatic and theoretical styles are not opposites, but complementary; denote a profile in which the individual approaches to knowledge through theoretical models, then looking for the practical use of the concepts learned.
- As a result, it is considered that the propensity to undertake interact styles theoretical and pragmatic learning with work experience; this would suggest that when students combine study and work, the contrast between theory and practice that occurs in the sequence of theoretical and pragmatic styles is reinforced.
- Efforts to encourage entrepreneurship among college students might consider designing a curriculum in which timely identify learning styles; combine theory with practice; develop entrepreneurial projects; and encourage students to work practice during the training process, not only at the end of the studies.

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