ENTREPRENEURIAL INTENTION IN FIRST-YEAR HIGHER EDUCATION STUDENTS

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ABSTRACT

Higher education students attending Entrepreneurship Education programs develop new skills to foster their future Entrepreneurial Intention. According tothe Theory of Planned Behavior, the dimensions of Personal Attitude, Subjective Norm, and Behavioral Controlare the predictors of Intention.As expected, in Entrepreneurship Intention studies, this theory permitted a more accurate prediction of students' intentions and goal attainment. This is essential to confirm (or not) conventional insight that entrepreneurship education increases some students' attitudes to intend to start a business in the future, resulting in the Higher Education programmesinfluence.

This research aims to evaluate the impact of Entrepreneurship Education in first-year students training program. The study was carried out in two moments: before and after being taught classes related to EE to identify relations.

The results show that the TPB model is an adequate analysis tool to assess Entrepreneurship Education impact, suggesting that there is a positive influence on students' Entrepreneurship Intention in the early stages of academic learning.

Keywords: Entrepreneurial Intention, Theory of Planned Behavior, Education for Entrepreneurship, Learning, Students, Higher Education

INTRODUCTION

Several studies have shown that Entrepreneurship Education (EE) in Higher Education Institution (HEI) contributes decisively to increasing students' Intention to be entrepreneurs in the future (Pittaway & Cope, 2006; Guerrero, Rialp & Urbano, 2008; Nabi, Holden, Walmsley & Holden, 2008; Paço, Ferreira, Raposo, Rodrigues & Dinis, 2011; Mueller, 2013; Fayolle, 2015; Nabi, Walmsley, Liñán, Akhtar & Neame, 2016).There is a consensus on EE and academic entrepreneurship's importance, particularly for economic growth and sustained wealth creation (Wright, 2007). Universities have progressively implemented policies to promote entrepreneurship, either through programmatic content or through the creation of research centres where students, researchers and teachers develop new businesses, register patents and create new ideas to develop at the business level (Franke, 2003; Naudé, Gries, Wood & Meintjies, 2008; Lautenschläger, 2011).

In Portugal, some universities adopt this type of academic policies with specific entrepreneurship programs, such as the University of Aveiro, the University Institute of Lisbon, whose objective is to create an entrepreneurial spirit among teachers, researchers and students. These universities developed new businesses that enable creating new jobs compatible with the skills acquired and developed along the academic path. There are even support lines or funds to finance entrepreneurial business ideas to motivate students to become entrepreneurs by creating their businesses (Shane, 2004; Audretsch, Lehmann, Meoli & Vismara, 2015).

According to (Walter & Block, 2016), EE plays an essential role in developing attitudes, skills, and culture from the primary and upper levels. Business skills, attitudes and behaviours

can be trained and learned by an individual, from his youth to adulthood (Rasheed & Rasheed, 2003). This shows that EE is crucial for all students and not just for those who want to become entrepreneurs. More and more students recognize EE's importance as an integral part of their basic training as more and more employers are looking for assets with knowledge in this area (Nabi et al., 2016). Usually, only Business Sciences courses have curricular units related to entrepreneurship, but that paradigm changes within universities (Noyes, 2016). In the last decade, courses that are not related to business have seen their curricular plan modified, with the theme of entrepreneurship being included, where topics such as the creation of the business itself, market analysis, business plans, branding, financial planning, among other topics that are important for anyone who wants to be an entrepreneur are addressed (Maritz & Schmidt, 2016).

The present investigation will use the TPB model by (Ajzen, 1991) and the Intentional Basic Model by (Krueger & Carsrud, 1993) to study the impact of *EE* on the Entrepreneurial Intention (EI) of the 1st year students of the Foreign Languages and Business Relations Bachelor degree. Several researchers have already used these models, like (Nabi, Walmsley, Liñán, Akhtar & Neame, 2016), who relied on the TPB (Theory of Planned Behaviour) to study the EI 1st-year students of *higher education.* The lack of studies that explore the relationship between EE and EI in the 1st year of higher education, based on TPB, explains the relevance of this research. In this context, the following research question arises:

What is Entrepreneurial Education's Influence on Students' Entrepreneurial Intention in the 1st year of Higher Education?

In addition to this brief introduction, the article's structure includes a literature review, methodology, results, conclusions, limitations, and future research suggestions.

LITERATURE REVIEW

Entrepreneurship Education

The entrepreneur is a timeless challenge, given the variety of points of view and definitions (Osberg, 2007). A brief chronological analysis allows one to identify pioneering authors who tried to explain the concept of entrepreneurship, particularly (Cantillon, 1755), (Smith, 1776; Schumpeter, 1934) because they wanted to understand the impact and the role that the entrepreneur had on the economy (Fillion, 1999). According to (Schumpeter, 1954), Cantillon was one of the first to differentiate an entrepreneur from a capitalist, giving importance to the concept of entrepreneurship. (Weber, 1930) identified human values as a decisive element that justifies the entrepreneur's behaviour. (Mcclelland, 1965) maintained that if society values the concept of entrepreneurship, the more entrepreneurs there will be in the future. For (Rasmussen, Mosey & Wright, 2011), entrepreneurship is a viable solution for solving the growing economic problems that economies face. In recent years, *EE* has become a topic of growing interest in higher education institutions. Several political decisions have positioned EE's themes as a critical element in promoting, expanding, and developing corporate culture (Holmgren, 2005; Ertuna & Gurel, 2011).

The higher the level of entrepreneurship in a given country, the higher its levels of economic growth and innovation will be (Versloot, 2007). This idea is in line with establishing a global business climate through mechanisms in which entrepreneurship takes a fundamental role (Ireland, Covin & Kuratko, 2009). The main objective of government policy is to integrate *EE* at all levels of education (Corbett, 2003), thereby increasing the number of entrepreneurship courses and students at universities exponentially (Blenker et al., 2012; Kuratko, 2015). There is also a growing academic interest in supporting *EE* to foster a new attitude and vision related to the labour markets (Hoppe, 2016). In this sense, the main reason for exposing students to *EE* programs is to leverage EI, namely to create their businesses or to suggest new products/services in the organizations where they will collaborate. It is noted that EE has been one of the most used means to encourage the entrepreneurial activity of young people through three distinct

mechanisms: (1) through the teaching of fundamental concepts to start and develop a business (Honig, 2004); (2) assessing the capabilities of each individual to create and grow a business (Tienne & Chandler, 2004); (3) exploring the cultural effect of students, concerning their attitude and behaviour (Peterman & Kennedy, 2003). One way to stimulate entrepreneurial activity is by identifying opportunities provided by EE that encourage entrepreneurial activity (Man, Lau & Chan, 2002). These entrepreneurial skills can be defined as a set of knowledge, skills and abilities that allow the entrepreneur to perform a specific function successfully (Chandler & Hanks, 1994; Baum, Locke & Smith, 2001; Fretschner & Weber, 2013; Mueller, 2013; Elert, Andersson & Wennberg, 2015). Wilson (2008) states that high levels of entrepreneurship can be achieved through EE, reflecting the common belief that entrepreneurship plays a crucial role in increasing competitiveness and well-being (Smelstor, 2007). Perhaps it is for this reason that, in recent decades, there has been a strong increase in *EE* worldwide, based on investment in the assumption that it is possible to create entrepreneurs using specific educational programs for this purpose (Erikson, 2003). *EE* has positive effects on its receivers (Sluis, Praag & Witteloostuijn, 2006) and entrepreneurial training is effective for people that decide to start their own business (Dickson, Solomon & Weaver, 2008; Karlan & Valdivia, 2011). These *EE* programs have as main objective to teach students to put theory into practice, in order to gain confidence and motivation in the realization of their own business (Meyer, 2011). The development of appropriate *EE* programs is therefore suggested as a way to increase entrepreneurial talent (Henry, Hill & Leitch, 2005).

Entrepreneurial Intention in Higher Education Students

(Guerrero, Rialp & Urbano, 2008; Nabi, Holden, Walmsley & Holden, 2008;Fretschner & Weber, 2013; Mueller, 2013) as well as (Lorz, Mueller & Volery, 2013) analysed the influence of participation in EE programs on IEand concluded that there was a positive influence. Authors such as (Fayolle, Gailly & Lassas, 2006; Pittaway & Cope, 2006; Degeorge & Fayolle, 2008; Graevenitz, Harhoff & Weber, 2010; Rideout & Gray, 2013; Sánchez, 2013; Farashah, 2013; Solesvik, 2013; Elert, Andersson & Wennberg, 2015) address the positive effects of participating in EE programs, generalizing the study to university education as a whole, without particularizing the area of teaching or the year attended, having concluded that students who participate in EE increase their EI compared to those who do not participate. From an opposing point of view, (Souitaris, Zerbinati & Al-laham, 2007) approached the same theme and concluded that the effects of the program applied in the future EI are negative. (Wilson, 2007; Wilson, Kickul & Marlino, 2007; Turban, 2008; Leary, 2012) studied the impact of EE programs in EI, taking into account gender, revealing that in the vast majority of cases, women are more entrepreneurial than men. On the contrary, (Majumdar & Varadarajan, 2013) concluded that male and female students have the same propensity to be future entrepreneurs. EI does not depend on gender but factors such as creativity, motivation and awareness towards the goal. On the other hand, other studies conducted by (Lüthje & Franke, 2003; Souitaris, Zerbinati & Al-laham, 2007; Heinonen & Hytti, 2010; Shahidi, 2016) identified teachers, in general, and syllabus in particular, as factors that positively contribute to EE influencing students' willingness to be future entrepreneurs. Other authors confirmed both, success and failure of participation in *EE* programs for students in the last year of the university, concluding that the EI increased based on EE (Liñán e Rueda, 2011; Darwent, 2016).

According to (Fayolle, 2013), the institutionalization of EE requires reflections of all parties involved in the process so that it is possible to evolve as a curricular unit in the context of higher education. Therefore, the development of curricular units related to EE is a way to increase new entrepreneurial talents. According to recent studies, there are many doubts about what type of EE should be taught in higher education. There is a need to know ("what?", "How?", "When?", "Where?") to obtain skills that are fundamental to the students' future as entrepreneurs (Jackson, 2015). On the other hand, it makes sense to talk about inspiration and motivation concepts when it comes to this topic. These two terms, which are linked continuously, are a joint force that allows reaching a specifically desired target(Nabi et al.,

2016). In the context of *higher education*, *EE* has defined inspiration as a relationship between "the heart and the emotion" that allows thought to be directed towards the will to be an entrepreneur (Souitaris et al., 2007). Bearing this relationship in mind, inspiration is a stimulus that directs a person to a particular idea or event to achieve a specific objective (Elliot, 2003). Still, according to the author's (Thrash & Elliot, 2003), inspiration influences thoughts and behaviours and increases a particular individual's creativity, leading to success. There are not many studies that focus on business inspiration and intentions in the 1st year of higher education. (Majumdar & Varadarajan, 2013) concluded that universities have made an effort to promote the entrepreneurial mind-set of students as soon as they arrive at higher education, either through programs specifically geared towards this purpose, or through initiatives that make them aware of the possibility of being future entrepreneurs.

Applying the TPB model, (Souitaris et al., 2007)studied EE's impact on students' attitudes and entrepreneurial intentions, having concluded that EE programs inspire students, arousing emotions and mentality changes directed towards the goal of being entrepreneurs in the future. Although there is no perfect relationship between behavioural Intention and real behaviour, Intention can be used to measure behaviour (Francis et al., 2004). Several models studied the entrepreneurial Intention: Entrepreneurial Event Model (Shapero, 1982); Theory of Planned Behavior (Ajzen, 1991); Entrepreneurial Attitude Orientation (Robinson et al., 1991), Intentional Basic Model (Krueger & Carsrud, 1993), Entrepreneurial Potential Model (Brazeal, 1994), Davidsson Model (Davidsson, 1995). However, for the present research, (Ajzen's, 1991) (Theory of Planned Behavior, 1991; Krueger & Carsrud's, 1993) Intentional Basic Model were used because, according to the literature review, they are most used to assess the impact of EE on EI, showing effectiveness and pertinence in the conclusions obtained.

Ajzen's (1991) model identifies three antecedents ofIntention that reflect the desired perception of performing an individual behaviour: Personal Attitude (PA) and Social Norms (SN), and the third focuses on perceived Behavioural Control (BC), which reflects the self-control of behaviour. In turn, the model Intentional Basic Model by (Krueger & Carsrud, 1993) relates the dimensions PA, SN and BC with the EI. Identifying these three antecedents ofIntention was one of the most important contributions of the TPB model compared to previous models that studied the attitude-behaviour relationship. Thus, this model's variables can be used to determine an individual's interventions' effectiveness, realizing how his behaviour can influence them. The PA reveals that the desire to perform individual behaviour is related to the positive personal impacts that result from that decision. Attitude has two components that relate, on the one hand, personal beliefs about the consequences of behaviour and, on the other hand, positive or negative judgments about behavioural attitudes taken in a given context (Steinmetz et al., 2016). Social Norm (SN) results from the fact that specific behaviour is affected by influential people, family members, or specific individuals. These norms are related to the social pressure that an individual feels to display a specific behaviour (Rimal, 2016).

Regarding Behavioural Control (BC), it is known that BC influences the effectiveness and confidence that a specific individual will have to execute their ideas successfully. It is intrinsically related to the perceived self-confidence to perform a given action (Ajzen & Fishbein, 1980). The way attitudes guide an individual's behaviour is through a deliberate or spontaneous process, guided by a solid motivation to influence behaviour, attitudes, subjective norms and perceived behavioural control (Albarracin & Vargas, 2010; Banji & Heiphetz, 2010). In this sense, whatever the prevailing norms regarding public opinion about applying a change in teaching procedures, attitudes are always far from uniform among individuals, deriving from existing individual personality differences (Eaves & Eysenck, 1974). In sum, TPB allows for a comprehensive explanation of human behaviours by relating beliefs, attitudes, norms, behavioural control, intentions, and behaviours, in which behaviour, subjective norm, and perceived control of behaviour influence an individual's intention. Thus, the probability of performing a particular behaviour increases when individuals' intentions to perform a behaviour are stronger(Ajzen & Driver, 1992; Berger, 1993). This theory has been used in several empirical studies, explainingindividuals' Intention and behaviour (Albarracin, Johnson, Fishbein,

& Muellerleile, 2001; Godin & Kok, 1996). Despite the impressive prediction of behaviour, there is still a proportion of the variation in that behaviour that remains difficult to explain. Questions remain about how all the components of BPD affect behavioural Intention (Ajzen, 1991).

Thus, based on the literature review, the following research hypotheses are raised:

Hypothesis 1: Personal Attitude (AP) influences Entrepreneurial Intention (IE).
Hypothesis 2: The Social Norm (SN) influences EI.
Hypothesis 3: Behavioral Control (BC) influences EI.
Hypothesis 4: Entrepreneurial Education (EE) influences EI.

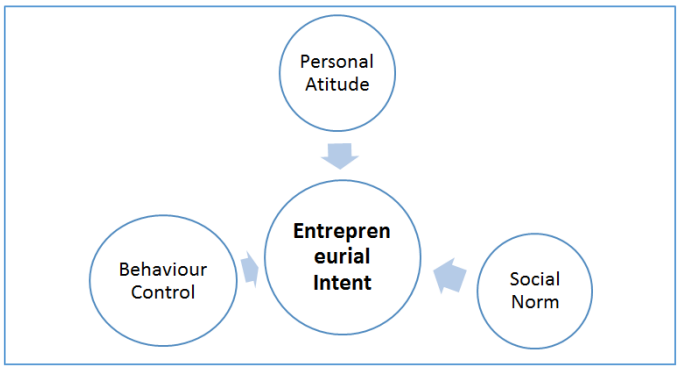

FIGURE 1
MODEL UNDER ANALYSIS

The research hypotheses presented above give rise to the analysis model presented in Figure 1. This will be the analysis model that will be tested in this research.

METHODOLOGY

According to (Barañano, 2004), the adopted research methodology is quantitative, confir matory, and descriptive. Table 1 summarises the methodology, and Table 2 shows the essential aspects considered therein.

Table 1
STRUCTURE OF THE METHODOLOGY

Research planning	Definition of the topic to be investigated and its framework in terms of literature review.
Data collection and preparation	A questionnaire was administered in the classroom in two moments, before any EE classes (M1) and after being taught 30 2h EE classes (M2).
Data analysis	Identification of the statistical techniques to be used and interpretation and discussion of the results obtained (Marôco, 2014; Pestana e Gageiro, 2014).

Source: Self Elaboration

Table 2
MAIN METHODOLOGY ASPECTS

Analysis Unit	Students
Sample	41 1st year students of the FLOR course
Geographical area	Vila Real - UTAD -
Data Collecting	Primary data - Questionnaire - Likert scale (1 to 7)
Period of Analysis	The year 2016

Quantitative Data Analysis	IBM SPSS Statistic (version 24)
	This analysis is divided into three distinct parts:
	Descriptive statistics (tables and graphs)
	· Parametric tests
	· Factor analysis

Source: Self Elaboration

In this study, the sample was composed of 41 individuals, 10 male and 31 female. One of the respondents did not answer the questionnaire. The same questionnaire was applied at (M1) time and at time 2 (M2) to the students in the sample, aged between 18 and 31 years, with an average age of 21 years and standard deviations of 3.14 (Figure 2). None of the questionnaires analysed was considered null as they were all correctly filled out in both M1 and M2. The sample unit were university students of the first year with a response rate is 98%. The questionnaire was self-administered, and the statistical analysis was bivariate. Parametric tests were also applied (T-test for samples in pairs and Anova), nonparametric tests (Pearson's correlation coefficients) and factor analysis (Kaiser-Meyer-Olkin measure, Bartlett's sphericity test, Varimax orthogonal factor rotation, Cronbach's Alpha).

With the teacher's assistance, the students resorted to simulation to go through and fulfil all the requested steps, presenting in all classes what they had done so far to create their company. During the classes, the teacher taught several themes related to the entrepreneur's profile and key competencies, entrepreneurship and innovation, strategic business planning, and a business plan. It should be noted that the students acquired knowledge that allowed them to choose what type of company they wanted to create, which business line, legal form, firm, business plan to adopt, implementation strategy in the market, marketing plan, among other fundamental contents that allowed them to gain autonomy in the process of setting up a company. In the first class, the questionnaire was applied, adapted from the article "Behaviors and entrepreneurial intention: Empirical findings of secondary students" by the authors (do Paço et al., 2011). According to its authors, this questionnaireaims to relate three dimensions of the TPB model of (Ajzen, 1991), which are the PA, SN and BC, with the EI dimension of the Intentional Basic Model (Krueger & Carsrud, 1993).

The Intention is to demonstrate the existence of a positive relationship between TPB and EI dimensions and the same type of relationship between EE and EI. In the last class, the same instrument was again administered to see if the applied program had positive effects on the students in relation to the four dimensions correlated with each other. The use of an assessment before and after applying the program is a good practice that allows assessing whether there have been changes andthe meaning of those changes (Fayolle et al., 2006). After the data codification in M1 and M2, they were statistically analyzed and interpreted in IBM SPSS STATISTICS 24.

RESULTS

Descriptive Analysis

The scales used to measure the phenomena were the adapted Likert scales (Min 1, Max 7). The results were analysed in two ways: results per response within each dimension and results added for each dimension. The mean value rounded up by run is 4 (median point of the scale) within this scale. As a criterion for data interpretation, values below four will be considered negative values and above four as positive values. The Likert scale values' interpretation is: from 1 (Strongly disagree) to 7 (Strongly agree).

Starting with the descriptive analysis by the response for each dimension, we can see in Table 3 the results obtained in M1 and M2, highlighting the main conclusion that there was an average positive increase in the variables that reveal an increase in EI.

Table3 RESULTS PER RESPONSE IN M1 AND M2				
	Min	**Max**	**Average**	**STD Deviation**
Dimension: Personal Attitude (PA)				
PA1 - Being an entrepreneur has more advantages than disadvantages for me.	M1:3,00	M1:7,00	M1:5,2195	M1:1,19399
	M2:3,00	M2:7,00	M2:5,3415	M2:0,93834
PA2-Being an entrepreneur is attractive	M1:4,00	M1:7,00	M1:5,5122	M1:1,09822
	M2:2,00	M2:7,00	M2:5,5878	M2:1,32512
PA3- If I had the opportunity and resources, I would like to start a company.	M1:2,00	M1:7,00	M1:5,7073	M1:1,20921
PA4-Being an entrepreneur would be of great satisfaction for me.	M1:3,00	M1:7,00	M1:5,5610	M1:1,16294
PA5- Having several job options, I would prefer to be an entrepreneur.	M1:2,00	M1:7,00	M1:4,6585	M1:1,42495
Dimension: Social Norm (SN)				
SN1- Your closest family members.	M1:4,00	M1:7,00	M1:6,0732	M1:1,08144
SN2-Your friends.	M1:4,00	M1:7,00	M1:6,1951	M1:0,90054
SN3-Your classmates.	M1:3,00	M1:7,00	M1:5,5854	M1:1,16137
Dimension: Behavioral control (BC)				
BC1-Starting a business and keeping it up and running would be easy for me.	M1:2,00	M1:5,00	M1:3,7805	M1:0,98773
BC2-I am prepared to start a viable business	M1:1,00	M1:6,00	M1:3,3415	M1:1,35296
BC3- I can control the whole process of creating a new business	M1:1,00	M1:6,00	M1:3,1220	M1:1,38194
BC4-I know how to develop an entrepreneurial project.	M1:1,00	M1:6,00	M1:3,4146	M1:1,37796
BC5- If I tried to start a business, I would have a high probability of success.	M1:2,00	M1:7,00	M1:3,6829	M1:1,25377
Dimension: Entrepreneurial Intent (EI)				
EI1-I am prepared to do anything to be an entrepreneur.	M1:1,00	M1:7,00	M1:4,2439	M1:1,26057
EI2-My professional goal is to be an entrepreneur.	M1:1,00	M1:7,00	M1:4,1707	M1:1,28262
EI3- I will make every effort to start and run my own company	M1:2,00	M1:7,00	M1:4,5122	M1:1,38061
EI4- I am determined to create my business in the future.	M1:2,00	M1:7,00	M1:4,5610	M1:1,44998
EI5- I have seriously thought about starting a company.	M1:1,00	M1:7,00	M1:4,4634	M1:1,48488
EI6- I intend to open a company one day.	M1:1,00	M1:7,00	M1:4,6098	M1:1,67150
	M2:1,00	M2:7,00	M2:5,4390	M2:1,76137

Concerning the dimensions of the TPB, the dimension of Personal Attitudeincreased from M1 to M2 in all variables. This increase was verified at the adequate level by the significant change in the minimum and maximum values and the average change. In this dimension, the variable PA5 (Having several work options, I would prefer to be an entrepreneur) was the one that had the most significant change from M1 to M2. This change reveals that the students' Attitude after being subjected to an EE program had positive increases with regard to the desire to be entrepreneurs.

Regarding the Social Norm dimension, we can see that there were only positive increments in the SN3 variable (Influence of classmates). The remaining variables saw their average decrease. This reveals thatwith EE during classes, classmates' influencesuperseded close family and friends' influence as the factor that most influences students to want to be

entrepreneurs soon. The group work related to the theme, the exchange of ideas, the interaction between classmates will have influenced the students. Classmates opinions became more critical, gaining more influence in the decision on future Entrepreneurial Intention.

Concerningthe Behavioral Control dimension, there was also, in general terms, a positive increase in all variables concerning the minimum, maximum and average results. However, we have to highlight variable BC4 (I know how to develop an entrepreneurial project), which revealed the most considerable positive increase from M1 to M2. This significant growth suggests that students, after EE classes, display a more conducive and revealing behavioural control of wanting to be entrepreneurs soon. This variable's increase demonstrates that students learned how to develop an entrepreneurial project, knowing what behavioural attitude they should have to achieve this goal. Also, the increase in other variables, essentially BC2 and BC3, reveals that students feel prepared to start and control a business with a viable success after EE classes. Analyzing the EI, which is the one that can best demonstrate whether EE has increased in students an efficacious desire to want to be entrepreneurs, the results demonstrate that there is a positive relationship between EE and EI. All variables underwent significant increases, both in their minimum, maximum and average values. These results reveal that the students of the 1st year course, after being subject to EE, feel more comfortable with the theme and therefore more confident to be entrepreneurs. The EI revealed from M1 to M2 is genuinely significant, with variables EI2 (My professional goal is to be an entrepreneur) and EI5 (I seriously thought about starting a company) as those that best demonstrate the strong will of students to follow this path for their lives.

In general terms, an average increment of the dimensions under study, Personal Attitudes, Behavioral Control and EI except forSocial Norm, were verified. RegardingPersonal Attitudes, there was an average increase of 5.53%, the BC increased by 43.66%, the EI by 21.19%, while the Social Norm had a decrease of 1.23%. It is concluded that the influenceon the decision to become an entrepreneur changed from relatives and friends in M1 to only classmates in M2, which meant that, on average, the results decreased, without being a very relevant factor. The average growth of the EI variable, influenced by the TPB three variables, had an interesting increase.

Coefficient Pearson Correlation Test

The Intention is to understand whether each dimension of the TPB (PA, SN, BC) contributes to the EI dimension increase. Pearson's linear correlation coefficients test was used to test a relationship between the variables under study.

The test for Pearson's linear correlation coefficients (r) is applied when it is intended to test whether there is a correlation between two variables. Since the variables in this study are all quantitative, Pearson's parametric test or Pearson's “R” is applied.

We intend to understand if in each dimension (PA, SN, BC and EI), the variables that make up each of them correlate, and we ask the question: is there a relationship between the variables that allows evaluating the PA, SN, BC and EI of the 1st year course in M1 and M2?
For each of the tests, the hypotheses are H0: Pearson's correlation coefficient is equal to zero, that is, there is no linear relationship between the pair of items under analysis (Pearson's R=0) and H1: The correlation coefficient Pearson's method is different from zero, that is, there is a linear relationship between the pair of items under analysis (Pearson's $R \neq 0$), assuming that for $\alpha>0.05$ we do not reject H0, for $\alpha<=0.05$ we reject the H0.

Next, the relationship between the particular variables of the PA dimension is analysed to understand their meaning. Subsequently, the variables with the greatest linear relationship are selected to be compared with the EI variables to verify whether they influence.

Table 4
CORRELATION BETWEEN VARIABLES OF PAIN M1 AND M2

		PA2	PA3	PA4	PA5		

PA1	r of Pearson	0,566**	0,263	0,535**	0,456	
PA2	M1	1	0,786**	0,832**	0,893**	
PA3		0,511**	1	0,835**	0,800**	
PA4		0,631**	0,564**	1	0,784**	
PA5		0,562**	0,593**	0,616**	1	
**. The correlation is significant at the 0.01 (bilateral) level.						
*. The correlation is significant at the 0.05 (bilateral) level.						

In Table 4, we verify that there are several types of correlation, from a very weak relationship in M1 to a moderate and predominantly strong relationship in M2. The variables that are correlated with greater intensity in M1 (Moderate Relationship) are PA2 (Being an entrepreneur is attractive) with PA4 (Being an entrepreneur would imply great satisfaction) and the latter with PA5 (Having several options, I would rather be an entrepreneur). In M2, there is a stronger correlation between PA3 (If I had the opportunity and resources, I would like to open a company) and PA4 (Being an entrepreneur would imply great satisfaction), as well as between PA2 (Being an entrepreneur is attractive) and PA5 (Having several job options, I would prefer to be an entrepreneur).

This correlation demonstrates that students increased their desire to be entrepreneurs in the future because, on the one hand, if they had several work options, they would prefer to be entrepreneurs. They still reinforce this desire by stating that the possibility of being entrepreneurs is attractive and satisfactory. There are still other interesting correlations to interpret, although the coefficients are lower, despite the positive correlation coefficients.

Table 5
CORRELATION BETWEEN VARIABLES OF SNIN M1 AND M2

		SN1	SN2	SN3
SN1	r de Pearson	1	0,428**	0,588**
SN2	M1	0,678**	1	0,885**
SN3		0,522**	0,533**	1

M2

Analyzing the Social Norms dimension variables in M1 and M2 (Table 5), the correlation types are almost all moderate, except for the one between SN3 and SN2 in M2. In M1, the most correlated variables (Moderate Relationship) are SN1 (Your closest relatives) with SN2 (Your friends) and the latter with SN3 (Your classmates). In M2, the strong correlation between SN2 (Your friends) variables to SN3 (Yourclassmates) stands out.

These correlations demonstrate that students, before having access to EE, identified the closest family members and friends as those who would approve their willingness to be entrepreneurs in the future. However, in M2, they defined that friends and classmates would be the ones who would approve of their decision to become entrepreneurs more easily. These variables are positively correlated, demonstrating that the closest people usually influence these important decisions.

Table 6
CORRELATION BETWEENVARIABLES BEHAVIOUR CONTROLIN M1 AND M2

		BC1	BC2	BC3	BC4	BC5
BC1	r de Pearson	1	0,813**	0,785**	0,669**	0,742**

M2

BC2		0,675**	1	0,899**	0,789**	0,852**	
BC3		0,478**	0,672**	1	0,691**	0,754-**	
BC4	M1	0,473**	0,767**	0,734**	1	0,782**	
BC5		0,609**	0,788**	0,571**	0,859**	1	

Analyzing the Behaviour Control dimension variables in M1 and M2 (Table 6), we find two types of correlation, moderate and strong, between the various variables. The variables that are most strongly correlated in (Strong Relationship) are BC4 (I know how to develop an entrepreneurial project) with BC5 (If I tried to start a business, I would have a high probability of success) and the latter with BC2 (I am prepared to start a viable business)In M2, the variables that are correlated with greater intensity in (Strong Relationship) are BC2 (I am prepared to start a viable business) with BC3 (I can control all the process of creating a new business) and BC2 with BC5 (If I tried to start a business, I would have a high probability of success). These correlations demonstrate that after EE students demonstrate that they are prepared to develop an entrepreneurial project with a high probability of success. They also demonstrate after the EE taught by the teachers that they feel more prepared than before to start a business with good viability chances. There are still other exciting correlations to interpret. Although the coefficients are lower, however, all correlation coefficients are positive.

Table7
CORRELATION BETWEEN ENTREPRENEURIAL INTENTION VARIABLE IN M1 AND M2

		EI1	**EI2**	**EI3**	**EI4**	**EI5**	**EI6**
EI1	r de Pearson	1	0,869**	0,830**	0,804**	0,821*	0,800**
EI2		0,623*	1	0,894**	0,847**	0,768**	M2 0,799**
EI3	M1	0,659**	0,627**	1	0,833**	0,804**	0,860**
EI4		0,676**	0,754**	0,839**	1	0,848**	0,903**
EI5		0,312*	0,443**	0,723**	0,701**	1	0,895**
EI6		0,367*	0,510**	0,771**	0,794**	0,840**	1

M2

Analyzing the variables of the dimension Entrepreneurial Intention in M1 and M2 (Table 8), there are two types of correlation, moderate and strong, among the various variables. However, it is necessary to highlight that the strong correlation type is the most abundant.

The variables that are most closely correlated in M1 (Strong Relationship) are EI3 (I will make every effort to start and run my own company) with EI4 (I am determined to create my business in the future). Another correlation with strong intensity is between the EI5 variables (I have seriously thought about opening a company) with EI6 (I intend to open a company one day). Regarding the M2 variables, all of them had a strong correlation, particularly EI4 with EI6 and also, as in M1, between EI5 and EI6. These correlations demonstrate that after Entrepreneurial Education,students were self-motivated to create and manage their own business in the future. There are also other correlations with similar intensity levels to those mentioned above, which can also be analyzed to explain the EI dimension. After an exhaustive quantitative and qualitative analysis of the various understudy dimensions, an EE program taught in higher education can influence students' intentions; however, it is also crucial to understand if the variables most stood out in the dimensions related to TPB also contribute to the increase in EI. Therefore, the main variables of the dimensions Personal Attitude, Social Norms and Behavioral

Control will be chosen to assess whether both correlate with the dimension EI variables. If this correlation occurs, we can conclude that Ajzen's (1991) TBP model applied in this article influences EI.

Table 8
CORRELATION BETWEEN THE MEANS OF THE VARIABLES OF EACH DIMENSION IN M1 AND M2

	PA M1	PA M2	SN M1	SN M2	BC M1	BC M2	EI M1	EI M2
PA M1	1	0.166	0.177	0.062	0.442*	0.132	0.491**	0.171
PA M2		1	-0.169*	0.507**	-0.002	0.649**	0.255	0.894**
SN M1			1	0.507**	-0.002	0.649**	0.255	0.894**
SN M2				1	-0.082	0.366*	0.161	0.484**
BC M1					1	-0.010	0.457**	0.041
BC M2						1	0.039	0.773**
EI M1							1	0.201
EI M2								1

Analyzing the averages of the variables of all dimensions understudy in M1 and M2 (Table 8), we verified strong correlations between PA M2 and EI M2, which reveals that the EE from M1 to M2 increased the Personal Attitude, which in turn increased the IE. It is also worth mentioning the correlation between BC M2 and EI M2, which shows that the BC for entrepreneurship was increased from M1 to M2 and, therefore, increased the IE. Finally, it should be noted that between the mean variables of M1 and M2, there is a positive correlation, the vast majority of which are significant, thus showing that the variables PA, SN and BC of Ajzen's (1991) model Theory of Planned Behavior increase the EI variable of the model Intentional Basic Model by Krueger 7 Carsrud (1993).

Parametric Tests - T-Test Samples in Pairs

The T-test for paired samples is applied when we have two correlated quantitative variables (measured on comparable scales). The aim is to compare their means for the same individuals. In another perspective, it can be said that we have two paired samples when the two sets of observation are different in only one relevant characteristic.

The variables of each dimension were correlated, and strong relationships between some were verified. We also correlated the averages of the results of each dimension and found significant results. T-test was used to analyze the average variables of each dimension whose obtained correlations were more relevant. The T-test is applied to PA M2 with EI M2, BC M2 with EI M2 and SN M2 with EI M2, between the PA, BC and SN average in M2 EI.

The aim is to understand if the average of these dimensions after EE (in M2) influences the average EI in M2. Does EI increase due to the increase in PA, BC and SN?

The difference variable, that is, PA, BC and SN M2 minus EI M2, follows a normal distribution because as two characteristics referring to the same individuals (students) are being compared, then there is a relationship between samples (the distribution of the other influences the distribution of one) so the assumption of matching the samples is verified.

As we can see in Table 10, the relationship between samples is confirmed by calculating Pearson's linear correlation coefficient, revealing a direct and robust relationship (r=0.894 p-values<0.001).

Table 9
CORRELATION BETWEEN THE MEANS OF THE VARIABLES PA AND EI IN M1 AND M2

	N	Correlation	Sig.
PA M2 and EI M2	41	0.894**	0.000
BC M2 and Ei M2		0.773**	0.000
SN M2 and Ei M2		0.484**	0.001

As the sample is (n=41>30) by applying the central limit theorem, the assumption of verified matching can be considered. The two hypotheses that will allow the T-test can be formulated.

Table 10
T-TEST - PAIRED SAMPLES

		Paired differences					t	df	Sig.
		Avg	STD dev	Mean STD error	95% Difference Confidence Interval				
					Min	Max			
Par 1	PA M2 - EI M2	0.14634	0.65425	0.10218	-0.06017	0.35285	1.432	40	0.160

As we can see from the results shown in Table 10, we cannot reject H0: "The mean, in M2, of the PA, is equal to or greater than the average of the entrepreneurial intention" because α>0.05 and>0, so we can say that there is statistical evidence that proves that the average of Personal Attitude is slightly higher than the average of EI in M2 (t=1.432; p-value>0.05). However, it should be noted that both variables are strongly correlated (r=0.894; p-value <0.001) and there is a proven statistical trend that when PA increases the students' EI.

Parametric Tests - Analysis of Variance (ANOVA) to One Factor

After comparing EI averages between men and women in M1 and M2, we found that EI M1 and EI M2's independent quantitative variables experienced positive increases in both genders. In contrast, in women, the increase in M1 (4.38) and M2 (5.25) was slightly lower than the male, which t reached M1 (4.8) and M2 (6.00). It should also be noted that, in this study, men have a higher EI compared to women, both in M1 and M2.

Applying the ANOVA test to the variables referenced above, we found that both in M1 (Sig.=0.392>α=0.05) and M2 (Sig.=0.162>α=0.05), there is no statistical evidence to state that the mean is significantly different between men and women. We found that although male students have, on average, a higher EI than female students, these differences are not statistically significant as F=0.751; p=0.392 in M1 and F=2.031; p=0.162 in M2. The conclusion that the gender of the students does not significantly influence the EI is reinforced by the results obtained when it is verified that half of the students have an average of M1: 4.48 and M2: 5.43 points on the Likert scale of 0 to 7 concerning the mean EI, which is M1: 4.8 (H) and M1: 4.38 (M), as well as about M2: 6 (H) and M2: 5.25 (M).

Factor Analysis of the Dimensions of the TPB (Personal Attitude, Social Standard and Behaviour Control)

To study the responses' behaviour, the Pearson correlation matrix was considered and the respective proof values. This matrix corresponds to the first 13 questions related to Personal Attitude, Social Norm and Behavior Control, concepts that are meant to be related to entrepreneurial Intention, assessed in the questionnaire's following questions (Table 11).

Table 11
PEARSON'S CORRELATION MATRIX BETWEEN THE VARIABLES PA, SN AND BC

	PA1	PA 2	PA 3	PA 4	PA 5	SN	SN2	SN3	BC1	BC2	BC3	BC4	BC5
PA 1	1	0.446**	0.063	0.449**	0.251	0.162	0.145	0.230	0.063	0.138	0.014	0.171	0.248
PA 2		1	0.511**	0.631**	0.562**	0.157	0.149	0.092	0.291	0.300	0.254	0.286	0.339*
PA 3			1	0.564**	0.593**	0.055	0.100	-0.053	0.259	0.292	0.022	0.135	0.201
PA 4				1	0.616**	0.205	0.299	0.102	0.175	0.336*	0.112	0.350*	0.382*
PA 5					1	0.098	0.053	0.094	0.407**	0.594**	0.250	0.354*	0.512**
SN 1						1	0.678**	0.522**	0.015	0.119	0.178	0.331*	,183
SN 2							1	0.533**	0.077	0.231	0.221	0.437**	0.278
SN 3								1	0.180	0.156	0.063	0.035	0.148
BC 1									1	0.675**	0.478**	0.473**	0.609**
BC 2										1	0.672**	0.767**	0.788**
BC 3											1	0.734**	0.571**
BC 4												1	0.859**
BC 5													1

Table 11 shows that 37 of the 79 correlations (47%) are significant. This is the first output to be presented in the SPSS software as it indicates the suitability of a Factor Analysis (FA). These results suggest that the factorial analysis for the data is adequate. Since there is a high percentage of significant correlations, the correlation matrix is expected to be significantly different from the identity matrix. This expectation can be investigated by analyzing the obtained value of the KMO sample adequacy measure (Kaiser-Meyer-Olkin), a measure of the variables that compare the simple correlations with the partial correlations observed between the variables. In this case, the KMO measure has a value of 0.718, which, according to Marôco (2014), corresponds to a degree of recommendation in relation to PA. The Bartlett sphericity test allows for testing the suitability of PA in terms of the correlation of variables, with the hypothesis H0="The correlation matrix is equal to the identity matrix". In this case, the proof value (Sig.) is approximately 0, so H0 is rejected. The correlation matrix is significantly different from the identity matrix, making it appropriate for these data. The variables demonstrated satisfactory characteristics to implement PA, likeall sample adequacy measures (Measures of Sampling Adequacy (MSA) are greater than 0.50.

Thus, Principal Component Analysis was applied to reduce the 13 considered variables, using the criterion of retaining components with eigenvalues greater than 1. These components were3 components were extracted (as shown in Table 12), which explain 69.3% of the variance total.

Table 12 COMPONENT EXTRACTION			
Total Variance Explained			
Component	Rotation Sums of Squared Loadings		
	Total	% de variance	% Cummulative
1	3,731	28,696	28,696
2	2,956	22,739	51,435
3	2,327	17,902	69,337

Using the Varimax orthogonal factor rotation technique and hiding coefficients below 0.3, the components' rounded matrix is obtained (Table 13).

Table 13 FACTOR EXTRACTION				
		Components		
		1	**2**	**3**
BC2	I am prepared to start a viable business.	0.890		
BC4	I know how to develop an entrepreneurial project.	0.850		
BC5	If I tried to start a business, I would have a high chance of success.	0.845		
BC3	I can control the whole process of creating a new business.	0.828		
BC1	Starting a business and keeping it up and running would be easy for me.	0.739		
PA1	Being an entrepreneur would imply great satisfaction		0.845	
PA2	Being an entrepreneur is attractive to me		0.796	
PA3	If I had the opportunity and resources, I would like to start a company.		0.761	
PA5	Having several job options, I would prefer to be an entrepreneur.		0.746	
PA6	Being an entrepreneur implies more advantages than disadvantages.		0.521	
SN1	Your closest family members.			0.849
SN2	Your friends.			0.846
SN3	Your classmates.			0.769

As expected, the items are grouped into the three proposed factors in the literature: PA, SN and BC.

The reliability analysis of the measures (Table 14), suggested by the PA, was measured by the corresponding Cronbach's Alpha indexes and reinforced the constructs' validity.

Table 14
RELIABILITY

		Cronbach's Alfa	Nº Items
PA	Personal Atitude	0,812	5
SN	Social Norm	0,794	3
BC	Behaviour Control	0,908	5
EI	Entrepreneur Intention	0,915	6

The remaining questions in the questionnaire intended to measure the respondents' EI. In this sense, the construct validity calculation, using Cronbach's Alpha index, was also verified, with a coefficient of 0.915.

Correlation Between the Four Dimensions - PERSONAL ATTITUDE, SOCIAL NORM, BEHAVIOR Control and Entrepreneurial Intention

To establish the relationship between the mentioned constructs above, the extracted factors' scores were kept using the linear regression method. Entrepreneurial intent was considered to be the average of the items that comprise it.

Table 15
CORRELATION FACTORS - LINEAR REGRESSION

		Factor 1 regression: BC	**Factor Regression 2: PA**	**Factor Regression 3: SN**
Enterpreneur Intention	**Pearson's correlation**	0.430**	0.509**	-0.236
	Sig.	0.005	0.001	0.138
	N	41	41	41

Pearson's correlation tests, the results of which are shown in Table 15, indicate a significant correlation between EI with Factor 1: BC and Factor 2: PA. However, there is no statistical evidence to consider a relationship with Factor 3: SN. It can thus be said that the EI increases as the BC and the PA increases.

Turning now to the comparison of results with the literature review for each of the defined research hypotheses, it is concluded that:

Hypothesis 1: Personal Attitude (PA) influences Entrepreneurial Intent (EI).

This hypothesis is confirmed because, in both moments of the study, the variables are strongly correlated (r=0.894; p-value<0.001), there is a proven statistical trend that when the PA increases, the students' EI also increases. Analyzing Table 15, using the correlation test between factors, we found that PA is correlated with EI (r=0.509). The verification of this hypothesis corroborates the studies carried out by (Francis et al., 2004; Souitaris et al., 2007 e Steinmetz et al., 2009).

Hypothesis 2: Social Norm (SN) influences EI.

This hypothesis is not verified, as it has a weak correlation (r=0.484; p-value <0.001). Although a correlation between the variables is positive, in the correlation between the verified factors, the SN is negatively correlated with the EI (r=-0.236), which means that the increase in NS does not consider the increase in EI. Failure to verify this hypothesis is contrary to the study conducted by (Rimal, 2016).

Hypothesis 3: Behavioural Control (BC) influences EI

This hypothesis is verified because, in both moments of the study, the variables are strongly correlated (r=0.773; p-value <0.001), there is a proven statistical trend that when the PA increases, the students' EI also increases. This hypothesis is confirmed as the correlation tests between factors demonstrate a positive correlation between WC and EI (r=0.430). The verification of this hypothesis is in accordance with what (Ajzen & Fishbein, 1980) defend in their studies.

Hypothesis 4: Entrepreneurial Education (EE) influences EI

This hypothesis is verified for the dimensions PA and BC of TBP, whose correlation with EI is positive and relevant with PA and EI (r=0.509) and BC and EI (r=0.509) and is rejected in relation to the dimension SN and EI (r=-0.236). The verification of this hypothesis is in agreement with the studies of several authors, being the most referenced in this theme (Lüthje & Franke, 2003; Fayolle et al., 2006; Souitaris et al., 2007; Degeorge et al., 2008; Guerrero, Rialp & Urbano, 2008; Nabi, Holden & Walmsley, 2008; Graevenitz et al., 2010; Heinonen & Hytti, 2010; Haase & Lautenschläger, 2011; Liñán & Rueda, 2011; Solesvik, 2012; Farashah, 2013; Fretschner & Weber, 2013; Lorz, Mueller & Volery, 2013; Mueller, 2013; Rideout et al., 2013; Sánchez, 2013; Elert et al., 2015; Brooman e Darwent, 2016; Shahidi, 2016).

In short, from the set of analyses carried out in this study, it can be concluded that only hypothesis 2 is not confirmed.

CONCLUSIONS

Entrepreneurial Education emerged from the belief that the necessary entrepreneurial skills could be taught through EE programs. These programmes enable students' attitudes and values to be transformed and grounded to stimulate their future entrepreneurial Intention. The key idea is that EE promotes a set of professional skills for entrepreneurship but is also considered a life skill. Through the literature review and empirical study carried out, we can conclude that the use of (Ajzen's, 1991) Theory of Planned Behavior model in its dimensions (personal attitude, social norms and behavioural control) combined with (Krueger's & Carsrud's Intentional Basic Model, 1993) in its EI dimension, prove to be an effective method to assess the EI of students who have been subject to EE. This article aimed to understand the relationship that can be established between the EE in the classroom and the EI of 1st-year students of the Foreign Languages and Business Relations Bachelor degree at UTAD. In this sense, according to the research question posed, it is concluded that EE allows for a positive increase in the EI of students in the first year of higher education, corroborating the study by (Nabi et al., 2016). This increase in EI is provided, through EE, by the dimensions PA and BC.

The results of our statistical analysis thus demonstrated that an appropriate EE program benefits students, increases their entrepreneurial Intention, as was mentioned by the studies of (Franke, 2003; Cope, 2006; Fayolle et al., 2006; Souitaris et al.,2007; Degeorge et al., 2008; Guerrero, Rialp & Urbano, 2008; Nabi & Walmsley, 2008; Graevenitz et al., 2010; Heinonen & Hytti, 2010; Haase & Lautenschläger, 2011; Liñán & Rueda, 2011; Solesvik, 2012; Farashah, 2013; Fretschner & Weber, 2013; Lorz, Mueller & Volery, 2013; Mueller, 2013; Rideout et al., 2013; Sánchez, 2013; Elert et al., 2015; Brooman & Darwent, 2016, Shahidi, 2016; Roy, Akhtar, & Das, 2017; Roy & Das, 2020.

The various statistical tests performed have shown that entrepreneurial intent increases as the BC (Ajzen & Fishbein, 1980). The PA increases (Steinmetz et al., 2016). It was demonstrated that the SN variable is not decisive for the increase of the EI, contrary to the study by (Rimal, 2016) referred to in the literature review. However, we have to consider it an important factor as its characteristics cannot be left aside, as entrepreneurship often starts with exchanges with family, friends, and co-workers. The fact that it was not considered statistically relevant does not exclude the importance of analysis when testing the model's use.

In the empirical study, from M1 to M2, men demonstrated a higher EI than women, contrary to the conclusions of the studies carried out by (Wilson, 2008;Wilson, Kickul & Marlino 2007; Turban, 2008; Leary, 2012; Majumdar & Varadarajan, 2013; Das, 2019).

This fact is reinforced when it is verified that PA and BC increased men between these two moments. Only NS had an average decrease, which corroborates a dimension that does not interfere with the students' EI as robustly as the others.

When the averages of the different dimensions were correlated, it was found, as in the correlation made, that the PA and BC dimensions of the TPB are those that most contribute to the positive increase of the EI in either M1, M2, or M1 to M2. The positive correlations demonstrate that the Theory of Planned Behavior model by Ajzen (1991) increases the EI variable in the Intentional Basic Model by (Krueger & Carsrud, 1993).

It was thus possible to establish the relationship between the constructs mentioned above, realizing in the factor analysis on the referenced model that there is a significant correlation between EI with Factor 1: BC and Factor 2: PA, but there is no statistical evidence to consider a relationship with Factor 3: SN. It can thus be said that the Ei increases as the BC and the PA increases.

The generality of the results obtained shows that EE, in the first year of higher education, is a valuable tool that should continue to be used because it increases a personal attitude and behaviour in students in order to become more informed about the thematic and imbue themselves with an entrepreneurial spirit that rather than being an obstacle becomes a possible future challenge.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

One of the limitations is related to the sample (only one class) and the analysis unit (students of the LRE course). It would be pertinent that the study's course is exclusively related to business sciences.

Another limitation has to do with the number of EE hours taught (60 hours), which is manifestly low compared to studies in which the applied EE programs were annual.

Finally, the fact that this study was applied to a sample of 41 students, where the vast majority were female (31 students), was another limitation. It would be preferable to have more homogeneous groups concerning gender.

As suggestions for future research, this study should be replicated in a higher sample of students in Business Sciences courses, such as Economics and Management. It would also be interesting to apply this study to courses in the same scientific area from different universities in order to compare results through the application of similar EE programs with students in the first year of higher education. Furthermore, it would be of interest to conduct this study in universities and polytechnics to assess whether the results are different in these two types of institutions. The application of this study in different countries may also be a research line to consider by those interested in this topic.

Finally, it would also be highly positive to carry out this investigation in the first year and subsequent years to understand whether the results obtained in the first year show an increase in the following years and whether EE influences this stability in subsequent learning years.

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