

Effect and Counter-effect of Entrepreneurship Education and Social Context on Student's Intentions

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ABSTRACT

Our paper presents a full experimentation of a new methodology designed for assessing the Entrepreneurship Teaching Programmes (ETP). The theory of planned behaviour (Ajzen, 1991 and 2002) provides us a very useful framework to analyze and measure how an ETP could influence its participants regarding their entrepreneurial attitudes and intentions. We apply this framework to an experimentation consisting in a 3-day-pedagogical process focusing on entrepreneurship with a sample of 275 French students following a Specialised Master in Management at a business school ranked among the top four in France. The results suggest that the ETP could have some strong positive effects for some students, depending on their background and initial perspectives on entrepreneurial intention. At the same time, the ETP could also actually decrease the level of entrepreneurial intention (counter-effects) for other students who have been yet exposed to entrepreneurship.

Keywords: Entrepreneurship education, theory of planned behaviour, entrepreneurial intention, entrepreneurial attitudes, impact assessment.

Efectos de la formación y el contexto social sobre las intenciones empresariales de los estudiantes

RESUMEN

Se presenta una medición completa de una nueva metodología diseñada para determinar los programas de enseñanza del espíritu emprendedor (ETP, por sus siglas en inglés). La teoría de la conducta prevista (Ajzen, 1991 y 2002) nos proporciona un marco muy útil para analizar y para medir cómo un ETP podría influenciar a sus participantes con respecto a sus actitudes e intenciones emprendedoras. Aplicamos esta herramienta a una muestra de 275 estudiantes franceses que cursan un master especializado en Dirección en una escuela de negocio que se sitúa entre las cuatro mejores en Francia y, que cursan un seminario de tres días centrado en el espíritu emprendedor. Los resultados sugieren que el ETP podría tener algunos efectos positivos importantes para algunos estudiantes, dependiendo de su conocimiento y perspectivas iniciales en la intención emprendedora. Al mismo tiempo, el ETP podría también disminuir realmente el nivel de la intención emprendedora (efecto-contario) para otros estudiantes.

Palabras Clave: Educación del espíritu emprendedor, teoría de la conducta prevista, intención emprendedora, actitudes emprendedoras, impacto producido.

JEL classification: M13, M53

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A main current research issue in the field of entrepreneurship education is to know to which extent the entrepreneurship teaching programmes (ETPs) influence students' attitudes toward the entrepreneurial behaviour, entrepreneurial intention and the behaviour itself (Moro, Poli and Bernardi, 2004; Hytti and Kuopusjärvi, 2004). Entrepreneurship literature also underlines the role of the social context. The orientations and behaviours of students and young graduates are influenced by a number of personal and environmental factors (Lüthje and Franke, 2003). As an example, researchers have shown the importance of the social status of entrepreneurial activities and situations (Begley and al., 1997) in the participant's environment. Particularly, empirical evidence for the relationship between the parental role model and preference for a self-employment career has been reported several times (Scott and Twomey, 1988; Matthews and Moser, 1995).

Based on these observations, the aim of our paper is to present a full experimentation of a new methodology designed for assessing the ETP, with in mind the objective to put some light on the research questions exposed above. The main focus of our paper is clearly on entrepreneurship education and particularly on the assessing programme question. The new methodology is based on the theory of planned behaviour (Ajzen, 1991 and 2002) and was described by Fayolle (2005). A first experimentation was reported by Fayolle and Gailly (2004). More precisely, the objective of our research is to apply our theoretical and methodological framework to an experimentation consisting in a 3-day-pedagogical process with a sample of 275 French students following a specialised Master in Management.

Our research sample is composed of students who recently started a one-year specialised management program at a business school ranked among the top four in France. This business school has been promoting and diffusing the entrepreneurial spirit throughout its program and curriculum over the past twenty years. Before attending the specialised masters, students have received a degree at the Master of Science level, usually in technological disciplines from French engineering schools and technological universities.

At the beginning of the master program, students are intensively trained for several weeks to acquire fundamental managerial skills and competencies. Upon completion of this portion of the program, they are trained and educated according to their chosen specialty. During their first weeks in the masters program students are all engaged in a 3-day case study related to entrepreneurship. We have used this pedagogical event as a field of study for our research program, applying our methodology in a longitudinal way to capture student variation in attitudes and intentions through the 3-day program. To begin our *first phase of research*, we administered a questionnaire at the beginning of the program, to measure attitudes (antecedents of intentions) and the level of entrepreneurial intentions. All antecedents and measures were derived from literature focused on theory and previous empirical research on intentionality.

In our *second phase of research*, we administrated the same methodological conditions in a follow-up questionnaire to measure the same variables, with a specific emphasis on assessing the influence of the pedagogical process on the eventual variation of entrepreneurial intentions.

The results have been analysed for the entire group as well as through a segmentation of the sample into sub-groups based on various social factors influencing entrepreneurial intention.

In a first section of our paper, we study the entrepreneurship literature dealing with issues of ETP impact. The second section presents our theoretical approach which is based on the theory of planned behaviour. It is important to note that the theory is used not as a predictor of the entrepreneurial behaviour, but as a powerful model of conceptualising entrepreneurial intention and its antecedents. The third section describes the details of our study, including the sample and the research material. It also presents and discusses our results. In the conclusion, we underline the main research outcomes, and then we develop the theoretical and practical implications of the research, commenting on its limitations and avenues for future research.

1. EFFECTS OF ENTREPRENEURSHIP TEACHING PROGRAMS

Throughout the world, student interest in entrepreneurship as a career choice is growing (Brenner et al., 1991; Hart and Harrison, 1992; Fleming, 1994; Kolvereid, 1996), while interest in traditional professional employment in big business is gradually declining (Kolvereid, 1996). The orientations and behaviours of students and young graduates are influenced by a number of personal and environmental factors (Lüthje and Franke, 2003). Empirical research has shown that the presence of entrepreneurship education programs (ETPs) and a positive image of entrepreneurs within the university are both incentives for students to choose an entrepreneurial career. Johannisson (1991) and Autio and al. (1997) underscore the impact of students' perceptions of entrepreneurship, along with resources and other support mechanisms available in the university environment, on positively influencing student attitudes towards entrepreneurial careers. Other research has shown the importance of the social status of entrepreneurial activities and situations (Begley and al., 1997) and the statistical link between the level of entrepreneurial intention and the number of management courses taken by students enrolled in other programs (Chen and al., 1998). Entrepreneurship education and training influence both current behaviour and future intentions (Kolvereid and Moen, 1997; Tkachev and Kolvereid, 1999; Fayolle, 2002). In other words, there are significant differences between students who have taken entrepreneurship courses and those who have not. However, the question is if the causal relationship between the educational variables (course content, teaching methods, teacher profile, resources and support, etc.) and the direct intentional and/or behavioural antecedents

(attitudes, values, knowledge, etc.) can really be explained in detail? While findings of researchers who have attempted to do this are summarized below, we still believe there is a need for further conceptualization and testing.

Attempts have been made to compare the intentions and/or behaviours of students from different groups. For example, Varela and Jimenez (2001), in a longitudinal study, chose groups of students from five programs in three universities in Columbia. They found that the highest entrepreneurship rates were achieved in the universities that had invested the most in entrepreneurship guidance and training for their students.

Noel (2001) looked specifically at the impact of entrepreneurship training on the development of entrepreneurial intention and the perception of self-efficacy. The students in the sample had all taken an entrepreneurship education program and were graduates in entrepreneurship, management or another discipline. Noel's findings at least partially confirmed the assumption that the entrepreneurship graduates were more likely to launch businesses and had a higher level of intention and a more developed perception of self-efficacy than students in the other two groups.

Other researchers have tried to explain the relationship between entrepreneurship programs and individual characteristics, such as need for achievement and locus of control (Hansemark, 1998) or the perception of self-efficacy (Ehrlich and al., 2000). They found that entrepreneurship education had a positive impact, enhancing these characteristics and the likelihood of entrepreneurial action at some point in the future.

However, less attention has been paid to educational variables. Dilts and al. (1999) attempted to show that certain teaching methods (traineeships and field learning) are more successful than others at preparing students for an entrepreneurial career. Lüthje and Franke (2003) discuss the importance of certain contextual factors within the university environment which hinder or facilitate access of technical students to entrepreneurial behaviours. Their findings confirm those of Autio and al. (1997) and Fayolle (1996), which were obtained using similar samples.

2. THE THEORETICAL MODEL OF THE RESEARCH

Regarding specific research focusing on students, while some considered the role of institutional surroundings as significant (Autio and Al, 1997), the type of training and programs was not explicitly taken into account. Little is known about the impact of such variables connected to the formation of entrepreneurial intention, based on the antecedents of the model of Ajzen (1991; 2002).

The theory of planned behaviour is an extension of the theory of reasoned action (Ajzen and Fishbein, 1980), including the factor of "perceived behavioural control".

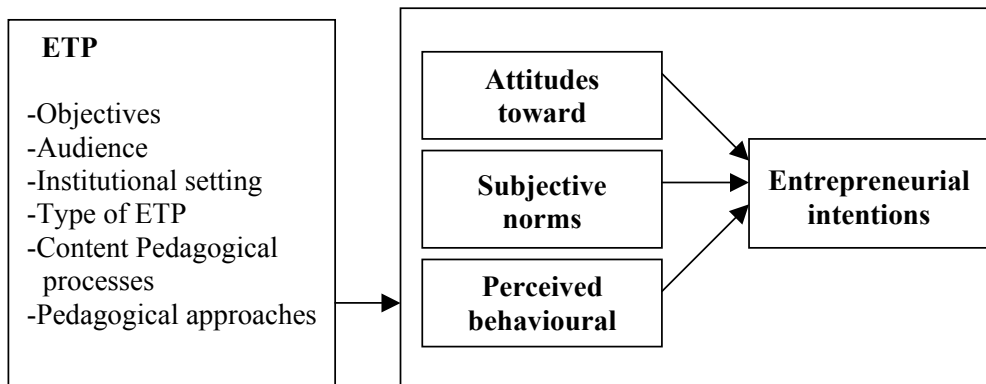
The central factor of this theory is the individual intention to perform a given behaviour. Intention is the cognitive representation of a person's readiness to perform a

given behaviour, and is considered to be the immediate antecedent of behaviour. The first claim is that intention is the result of three conceptual determinants:

- **Attitude toward behaviour:** The degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question (Ajzen, 1991). When new issues arise requiring an evaluative response, people can draw on relevant information (beliefs) stored in memories. Because each of these beliefs carries evaluative implications, attitudes are automatically formed.
- **Subjective norms:** Perceived social pressures to perform or not to perform the behaviour (Ajzen, 1991); in other words, the subject's perception of other people's opinions of the proposed behaviour. It is possible for these pressures to have a strong or weak role in creation of intention. For example, in France, the failure of a company is often negatively perceived whereas in the United States, a person can often undergo several failures and still undertake new attempts at creating a successful business.
- **Perceived behavioural control:** Perceived ease or difficulty of performing a behaviour (Ajzen, 1991). This concept was introduced into the theory of planned behaviour to accommodate the non volitional elements inherent, at least potentially, in all behaviours (Ajzen, 2002). Krueger and Dickson (1994) show us that an increase of perceived behavioural control increases the perception of opportunity.

The model used to assess the impact of ETP is presented below (Figure 1). In this model, an ETP is assessed based on its impact on participant's attitudes and intentions regarding entrepreneurial behaviour (Fayolle and Gailly, 2004; Fayolle, 2005).

Figure 1: ETP Assessment model



In this model, the independent variables are the characteristics of the ETP that one wishes to assess or compare. These variables can be related to the ETP itself (whether or not it was attended) or to some specific dimensions related to its objectives, content (Gibb, 1988; Wyckham, 1989; Gasse, 1992; Ghosh and Block, 1993), teaching approach, audience or institutional settings (Safavian-Martinon, 1998).

In particular, Johannisson (1991) identifies five content levels for the development of entrepreneurial knowledge that can be used to characterize the content dimension of ETP: the know-why (attitudes, values, motivations), the know-how (abilities), the know-who (short and long-term social skills), the know-when (intuition) and the know-what (knowledge). Similarly, (Develay, 1992) distinguishes three dimensions of teaching approaches: content strategies, relationship strategies and acquisition strategies.

The dependent variables in the model relate to the antecedents of entrepreneurship behaviour as defined using Azjen's theory, i.e. measures of attitude toward the behaviour, subjective norms, perceived behavioural control and intention. Those are measured through surveys of the participants completed before and after the ETP.

In our research we do not use all the independent variables exposed in our model. We simply consider the ETP as a whole and as the unique independent variable of the experimentation.

3. EXPERIMENTATION AND EMPIRICAL RESULTS

In this section, we will present the experimentation and the main empirical results from the survey we conducted both before and after students followed an entrepreneurship training program. We describe the sample and test several hypothesis regarding the intention model and how its antecedents are effected by the ETP and student background, using standard statistical procedures (SPSS).

Study

Our study is a short-time one. It is supported by a 3-day seminar focusing on the evaluation of new venture projects, mainly based on the business plans written for the regarding ventures. This seminar aims to increase student awareness of entrepreneurship and to help them understand some main issues in relation to entrepreneurs and their own entrepreneurial projects. The seminar covers many of the key dimensions of entrepreneurship and specifically the context of new venture projects. Students work in small groups (4-5) and interact with entrepreneurs and professors specializing in entrepreneurship, during the seminar.

At the beginning of the program, we administrated a questionnaire to the 275 participants in order to capture their attitudes and measure the level of their entrepreneurial intentions. As discussed earlier, we used measures derived from social psychology literature. At the end of the 3-day program, we measured these same variables in similar methodological conditions.

The two questionnaires (before and after the ETP) were sent to 275 students and included 47 Likert-scaled items related to the parameters of Ajzen's intention model (attitudes towards the behaviour, subjective norms, perceived behavioural control and intention) and 23 questions related to the students background (age, gender, entrepreneurial experience, etc.). Our research material is derived from the questionnaires developed and validated by Kolvereid (1996), for the measure of the parameters of Ajzen's intention model. Each item is scaled from 1 to 7 and different model parameters are measured as the average score of a predefined set of items.

As stated above, the research material also included items related to what is usually called "demographic" variables (Robinson et al., 1991) and students background variables (previous entrepreneurial experiences and exposure). Finally, we also measured the extent to which entrepreneurial knowledge and skills are acquired by participants, using a specific approach developed by Johannisson (1991).

Sample analysis

Among the questionnaires, 131 answers out of 275 were incomplete or inconsistent (52% valid response rate). An answer was considered inconsistent if the standard deviation of the items related to one of the parameter of Ajzen's model was greater than 2 (given the 1 to 7 scale).

The average age of the respondents was 25 and all but 7 were French.

The main statistics regarding Ajzen's model parameters before and after the ETP are presented below.

Table 1: Survey results.

Measure	Number of items	Average score	Standard deviation	Crombach's alpha
<i>Before the ETP</i>				
Attitude towards the entrepreneurial behavior	32	5.01	0.54	0.86
Attitude related to subjective norms	6	3.69	0.96	0.77
Attitude related to perceived control	6	3.86	0.75	0.7
Entrepreneurial intentions	3	3.90	1.24	0.83
<i>After the ETP</i>				
Attitude towards the entrepreneurial behavior	32	5.00	1.52	0.87
Attitude related to subjective norms	6	3.67	0.91	0.75
Attitude related to perceived control	6	3.95	0.76	0.75
Entrepreneurial intentions	3	3.97	1.25	0.86

Before testing the impact of the ETP, we tested the validity of Azjen's model (i.e. whether the antecedents were good predictors of the entrepreneurial intention) before and after the ETP. The result of the corresponding linear regression is presented below. Please note that the measures of the antecedents were significantly correlated (correlations ranging from 0.3 to 0.6, $p < 0.01$).

Table 2: Validation of Azjen's model.

Variable	Value	Standard deviation	Significance
<i>Before the ETP</i>			
Attitude towards the entrepreneurial behavior	0.40	0.17	0.02
Attitude related to subjective norms	0.57	0.09	0.00
Attitude related to perceived control	0.23	0.12	0.06
R-square	0.36		0.00
<i>After the ETP</i>			
Attitude towards the entrepreneurial behavior	0.34	0.14	0.04
Attitude related to subjective norms	0.56	0.06	0.00
Attitude related to perceived control	0.27	0.10	0.01
R-square	0.51		0.00

These results allow us to validate the use of Azjen's model to predict the entrepreneurial intention of the students surveyed. We also note that the regression increases after the ETP, which could be interpreted as a refinements of students' attitudes and expectations as a result of the ETP.

Analysis of the impact of the ETP

To test whether the ETP had an impact on students' intentions and attitudes, we used a mean comparison T-test and analyzed the correlation of the mean difference with other factors related to the students background.

As indicated in Table 1, there were limited differences observed as a result of the ETP when considering the entire sample. Among the three antecedents of the entrepreneurial intention, only the attitude related to perceived control was significantly influenced by the ETP (mean difference = 0.09, $p < 0.05$) when considering the whole sample of students.

The two other measures of attitudes were not significantly affected by the ETP. However, there is a significant correlation between the impact (mean difference) of

the attitude towards entrepreneurial behavior and intention and between the impact on the attitude related to subjective norms and the attitude related to perceived control (0.20 and 0.30 respectively, $p < 0.01$).

When considering the entrepreneurial intention, the absolute impact of the ETP is not statistically significant (mean difference = 0.06, $p < 0.36$). However the relative impact (mean difference divided by mean before the ETP) is significant (relative mean difference = 4%, $p < 0.05$).

When considering all the respondents, the ETP appears therefore to have a significant impact only on attitudes related to perceived control and only, in relative terms, on entrepreneurial intention. Moreover, there are significant correlations between the impact observed, which might indicate a strong interdependence between how attitudes are affected by the ETPs.

Considering this apparent interdependence and the difference between absolute and relative effects, we have tested whether these results remain valid when considering only a subset of the respondents, taking into account their initial situation and backgrounds.

Analysis of students initial situations

We first analyzed whether some student characteristics that are known to influence entrepreneurial behavior had an impact on the results presented above. To do so, we considered subsets of our sample based on the socio-demographic data we had collected and tested whether the results obtained on those sample differed from the results presented above.

Table 3: Analysis of students background

Sample	Sample size	Initial intention	Impact of ETP (mean difference)			
			Attitudes toward Behavior	Perceived Social Norms	Perceived Control	Intention
All students	144	3.90	0.00	0.02	0.09**	0.06
Entrepreneurs in family = Y	90	4.05	-0.01	-0.04	0.06	0.12
Entrepreneurs in family = N	54	3.67	0.00	0.02	0.15*	-0.04
Association experience = Y	78	4.09	-0.03	0.03	0.15	0.09
Association experience = N	65	3.72	0.02	-0.07	0.01	0.03
Foreign experience = Y	68	3.95	0.00	-0.04	0.09	0.07
Foreign experience = N	76	3.87	-0.02	0.00	0.10	0.06
Entrepreneurship training = Y	33	4.28	-0.03	-0.10	-0.04	0.05
Entrepreneurship training = N	111	3.80	0.00	0.00	0.13	0.07

* $p < 0.10$, ** $p < 0.05$

Using mean comparison T-test to compare the subsets considered above, the impact in terms of controllability appears to be somewhat higher for students that did not have any entrepreneurship training ($p < 0.13$) or experience with an association ($p < 0.14$). On the other hand, the presence of a role model, such as an entrepreneur in the family, appears to decrease the impact of the ETP in terms of entrepreneurial intention, although not significantly from a statistical point of view. ($p < 0.25$).

An international experience (more than six months spent abroad) had no impact on the influence of the ETP.

By comparing subsets of students with increasing initial levels of entrepreneurial intentions (Table 4), we tested whether the initial perspectives of the students about entrepreneurial intentions influenced the impact of the ETP.

Table 4: Analysis of students initial intention

Sample	Sample size	Initial intention	Impact of ETP (mean difference)			
			Attitudes toward Behavior	Perceived Social Norms	Perceived Control	Intention
All students	144	3.90	0.00	0.02	0.09**	0.06
First quartile	36	2.39	0.00	-0.08	0.11	0.25**
Second quartile	36	3.39	0.09	0.05	0.19**	0.27*
Third quartile	36	4.29	-0.05	-0.01	0.03	0.09
Fourth quartile	36	5.56	-0.07	-0.04	0.06	-0.36***

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

These results indicate that the initial student perspectives on entrepreneurial intention does have a strong influence on the impact of the ETP, ranging from significantly negative to significantly positive. This calls for further research in terms of student selection and an equation of programs with specific students profiles.

In particular, initially identifying students for which the ETP will have no or a negative impact in terms of entrepreneurial intentions could be very valuable. While using a measure of intention as a selection criteria might lead to biased results because of self-selection, using student background as criteria can provide potentially useful results, as there are significant differences in terms of initial intentions among the subsets of students considered (Table 3). In particular, students having an entrepreneur in their family, with an experience in an association or having already followed an ETP, tended to have a higher initial entrepreneurial intention (mean differences equal respectively 0.39, 0.37 and 0.47, significance respectively of 0.08, 0.07 and 0.10).

4. CONCLUSION: EFFECT AND COUNTER-EFFECT OF ETP

In this research our main aim was to capture variations in attitudes and intentions of students throughout a 3-day seminar focusing on entrepreneurship with the objective to understand the effects and possible counter-effects of ETP.

Looking at our results, and trying to extract from them key elements, we can identify a set of very interesting outcomes.

Firstly, it seems that for the entire sample, the impact of the studied ETP on entrepreneurial intention is significantly correlated with perceived behavioral control. Other research has underlined this kind of relationship between intention and self-efficacy or perceived behavioral control. This could lead to further research aiming at testing relationships between perceived behavioral control and educational or pedagogical variables to understand the influence of such variables. These variables could concern, for example, pedagogical methods or types of trainers as our general research model suggest.

Secondly, taking into consideration the results from subgroups of students selected from their previous exposure to entrepreneurship (coming from a family of entrepreneurs, having developed experiences involving entrepreneurial behaviors, having been exposed for a long time to international context), we have found empirical evidence through these additional outcomes. Particularly, we have found a positive impact of ETP on perceived behavioral control and on entrepreneurial intention for the following subgroups: students having not previously attended a course in entrepreneurship, students having not been exposed to entrepreneurship through their family and students having not actively participated in the founding and the development of students associations. In the other cases we did not find an impact.

Thirdly, in one of our most interesting results, we have found that the impact of the ETP on entrepreneurial intention is significantly dependent on the student's perspective on entrepreneurial intention (see the table 4). This means that for students in the first quartile (those having the lowest level of entrepreneurial intention), the impact of the ETP is significantly positive and for the fourth quartile students (those having the highest level of entrepreneurial intention), the impact is significantly negative. In other words, the ETP could have some strong positive effects for some students, depending on their background and initial perspectives on entrepreneurial intention. At the same time, the ETP could also actually decrease the level of entrepreneurial intention (counter-effects) for other students who have been yet exposed to entrepreneurship or experienced to a certain extend something like entrepreneurial situations.

These results lead us to ask some new and important research questions. For example, depending on the type of ETP, are there some ways and tools for selecting students and orientating them with and appropriate ETP which fits to their profile and background? In some cases, ETPs aiming to give a first awareness to entrepreneurship are not useful (existence of counter effect) for certain types of students. Further research along these lines could improve our understanding about these issues. In addition, we are far from a good knowledge about the influence of the main factors playing a role within an ETP. Further research would allow us to verify specific relations between pedagogical and educational variables and perceived behavioral control. Consequently, our research model could be therefore improved by including new independent variables influencing one or more of Ajzen's antecedents.

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