

# UNIVERSITY EDUCATION IN ENTREPRENEURSHIP. THE EXPERIENCE OF A TEACHING INNOVATION PROJECT

Ramón Fernández de Caleyá

<https://orcid.org/0000-0002-7047-0273>

<https://www.linkedin.com/in/rfcaleya/>

Caridad Maylin-Aguilar

<https://orcid.org/0000-0003-3431-6575>

Paula Crespí

Corresponding author: p.crespi.prof@ufv.es

<https://orcid.org/0000-0002-3470-8424>

<https://twitter.com/paucres>

<https://es.linkedin.com/in/paula-cresp%C3%AD-rup%C3%A9rez>

Universidad Francisco de Vitoria

## Abstract

This article presents an experimental teaching innovation and entrepreneurial training project where first year university students respond in teams to an entrepreneurial challenge with a product or service associated with the UN Sustainable Development Goal. One group of students received complementary training in entrepreneurship. The effect of the project on the motivation and preparation for entrepreneurship was measured through a self-evaluation questionnaire and the evaluation of the project by experts. We can conclude that transversal education in entrepreneurship, integrating projects and training sessions, is effective and favours the acquisition of entrepreneurial competences and increases the interest in transformative thinking and behaviour.

## Keywords:

Entrepreneurship training, learning based project, higher education, Instructional Innovation, competence

## Introduction

Within our constantly changing socio-economic environment it is more important than ever that universities provide students a comprehensive education enabling them to discover and effectively undertake their own life plans, that is, to fulfil themselves both personally and professionally and so contribute to the development of their society (Crespí & García-Ramos, 2021). Specifically, the economic slowdown, diminishing prosperity and environmental challenges point towards the need to develop entrepreneurial competences as it is these which will lead to socio-economic wellbeing of the nation, the creation of new businesses, self-employment and greater opportunities for employment (De la Torre et al., 2015; Comité de Cultura y Educación, 2015; GEM, 2020; Martínez-García et al., 2019; Ripollés & Michavila, 2020). To this end, both the United Nations Organisation and the European Commission have developed strategies and plans to encourage the development of entrepreneurial competences (Bacigalupo et al., 2016; Comisión Europea, 2013, 2016).

In response to this need, an expert team of professors in competences and entrepreneurial education led the development of a teaching innovation project, transversal and inclusive, to boost the entrepreneurial intention and behaviour of students. The proposal consists in providing first year university students with specific training in entrepreneurship and innovation. This training, imparted within the curricular course on generic competences, has practical application in an entrepreneurial and innovation project based on PBL techniques.

The impact of the training on entrepreneurial intent and behaviour was measured by comparing an experimental group (EG) and a control group (CG) using a sample of 664 students. Measurement was based on student self-evaluation and a

rubric to assess student behaviour with the submission and defence of an entrepreneurial and innovation project related to the Sustainable Development Goals (SDG) of the United Nations (ONU, 2019).

The results show that the integration of training and education in entrepreneurship in a natural, inclusive and global manner encourages greater interest and the feeling of preparedness to undertake the transformative challenge of entrepreneurship. The experience of the teaching innovation project is easily replicable and the best practices indicate that higher education institutions should develop programs that promote the acquisition of entrepreneurial competences and that these should be integrated within courses that develop transversal competences.

### Entrepreneurial competences in university education

The Entrepreneurship 2020 Action Plan of the European Commission (2013) and the report on Spain of the Global Entrepreneurship Monitor (GEM, 2020) emphasise the need to implement educational programs or courses into university curricula to boost the development of entrepreneurial competences (Nabi et al., 2017). This need is structural rather than cyclical and is not specific to any particular professional field. The aim is “for people to be creative and entrepreneurial” (Tobón, 2013, p. 152).

The competences refer to an integrated and dynamic set of knowledge, skills, attitudes and values that are internalised and manifested in behaviour that leads to personal and professional excellence (Crespi, 2019). Entrepreneurial competences are part of a generic set of competences also known as transversal competences. These are “fundamental in achieving personal fulfilment, project management, contribute to ecological sustainability and to perform any occupation, position and/or profession” (Tobón, 2013, p. 113). Thus, since McClelland (1973) first described competences and their influence on performing certain functions and tasks, the importance and need to develop competences in general and transversal competences in particular has continued to grow both in the field of education and business (Villardón-Gallego, 2015).

In general terms, entrepreneurial competence can be understood as the capacity to discover and identify ideas and opportunities and act upon them, creating value both for the economy and society (Bacigalupo et al., 2016; Ganesini et al., 2018; Renfors, 2020). This competence is not limited to the creation of new businesses, but has a broader and more transversal application (Núñez & Núñez, 2016). Entrepreneurial competences “permits citizens to further their personal growth, actively contribute to social development, entering the labour market as an employee or self-employed and to initiate or expand companies which may have a cultural, social or commercial activities” (Bacigalupo et al., 2016, p. 10). Thus, we can distinguish between activities associated with innovation, entrepreneurship and intrapreneurship in any context or activity (González et al., 2019).

Additionally, education in entrepreneurship distinguishes and studies the relation between entrepreneurial intention and entrepreneurial behaviour.

Entrepreneurial Intention (EI) is explained in three dimensions: Personal Attitude towards entrepreneurship (PA), Subjective Norms, the social environment or the cultural, regional or institutional context (SN), and Perceived Behavioural Control (PBC) (Ajzen, 1991). These three dimensions are established as the basis of entrepreneurial behaviour (Rauch & Hulsink, 2015).

A number of studies into the influence of these three dimensions on the EI of university students have found that the effectiveness of education in entrepreneurship in terms of entrepreneurial intention and behaviour is highly conditioned by the social context, field of knowledge and experience (Liñán & Rodríguez-Cohard, 2015; Rauch & Hulsink, 2015; Souitaris et al., 2007). Por tanto, education in entrepreneurship cultivates the knowledge, skills and attitudes necessary which, according to the model by Ajzen (1991) improve entrepreneurial Perceived Behavioural Control (PBC). The competences associated with entrepreneurship include are personal knowledge, personal management (locus of control), orientation towards achievement, proactivity (initiative and perseverance), strategic thinking (identification and evaluation of opportunities, vision), cooperative teamwork, team-personal management (motivation, negotiation, listening), management of adverse situations (risk, uncertainty), planning (time) and organisation (resources) according to objectives, innovation and creativity (UNCTAD, 2009; Bacigalupo et al., 2016; Comisión Europea, 2016; Neary et al., 2015).

### **Description of the experience**

A description of the elements of the experience are provided below, in terms of the educational means (courses and educational methodology) and the university context in which these are imparted. This will be followed by an assessment of the results and impact of the educational experience.

#### **Transversal course in Personal Skills and Competences (PSC)**

PSC is a unique curricular course developed by Universidad Francisco de Vitoria (UFV), embedded in the study plans of all first year of all degree programs. The principal objective of the course is to assist students in their personal and professional development through the acquisition of transversal personal competences by the hand of expert mentors and teachers. The course uses a practical, experiential methodology with a particular focus on Project Based Learning (PBL) as an effective technique in the development of these competences (González-Monteagudo & León-Sánchez, 2020). PBL methodology presents students with a complex problem. Students are divided into teams and must devise a solution through research, design, development and real implementation of a value proposition (González-Monteagudo & León-Sánchez, 2020; Toledo & Sánchez, 2018). Specifically, as indicated in Figure 1, PSC develops the majority of the personal competences associated with entrepreneurship, although these are addressed in a generalist manner using a PBL methodology.

Context of training in entrepreneurship. The UFV Entrepreneurship Centre

Specific education in entrepreneurship using a PBL methodology by the UFV Entrepreneurship Centre (CE-UFV) of the Vice-rectorate for Innovation and Entrepreneurship is based on the directives of the framework program (Fernández de Caleyá & Maylín, 2020) and the Souitaris (2007) model of learning-inspiration-resources outlined in figure 1.

The course, imparted by experts in innovation, focusses on the development of competences that further entrepreneurship and which are included in PSC: strategic thinking, management of adverse situations, innovation and creativity. To develop these skills, the course works to impart specific technical knowledge in the area of entrepreneurship through workshops and practical learning modules. Students apply this knowledge in their respect projects (PBL). In keeping with the initial premise of the teaching innovation project, learning and development of these competences will have a positive influence on entrepreneurial intention and entrepreneurial behaviour (perceived and observed).

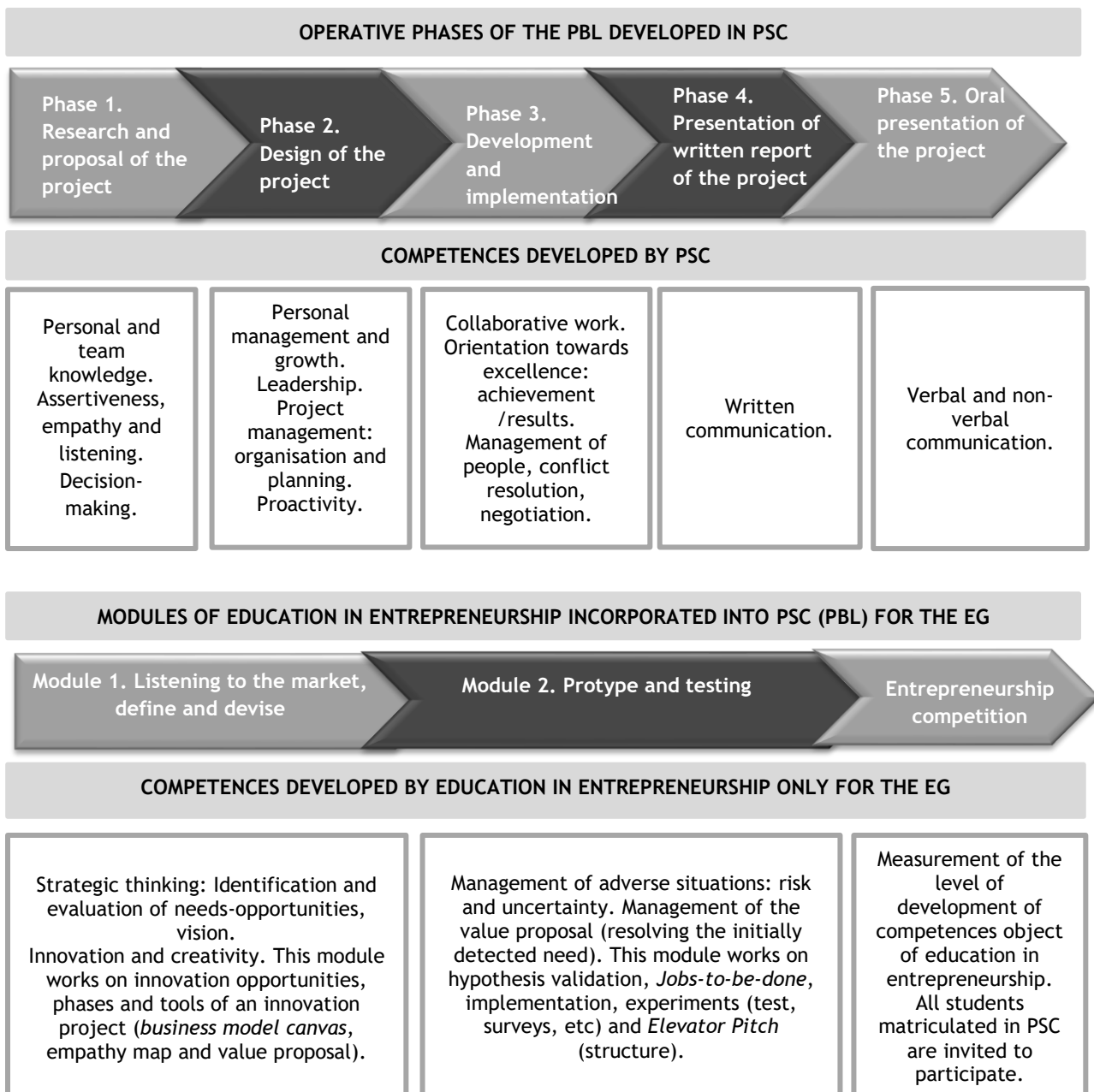


Figure 1. Map of personal-entrepreneurial competences developed by the PSC and training in entrepreneurship courses.

Source: authors

### Methodology to measure impact. Research procedures and data collection

The teaching innovation project involved 22 groups of students from various faculties, 14 professors of PSC and 2 instructors in CE-UFV, with a total sample of 664 students. The assessment of the impact of specific training was made by a comparison of the self-evaluation and behaviour of the 313 students part of the Experimental Group (EG) receiving the course in entrepreneurship and the 351 students of the Control Group (CG) who did not take the course. Both groups completed an initial self-evaluation (pre-test) and a final test (post-test) and were invited to submit their final projects, produced through the PBL format, to an entrepreneurship competition. The procedure described in Figure 2 took place during the second semester of the 2019-20 academic year.

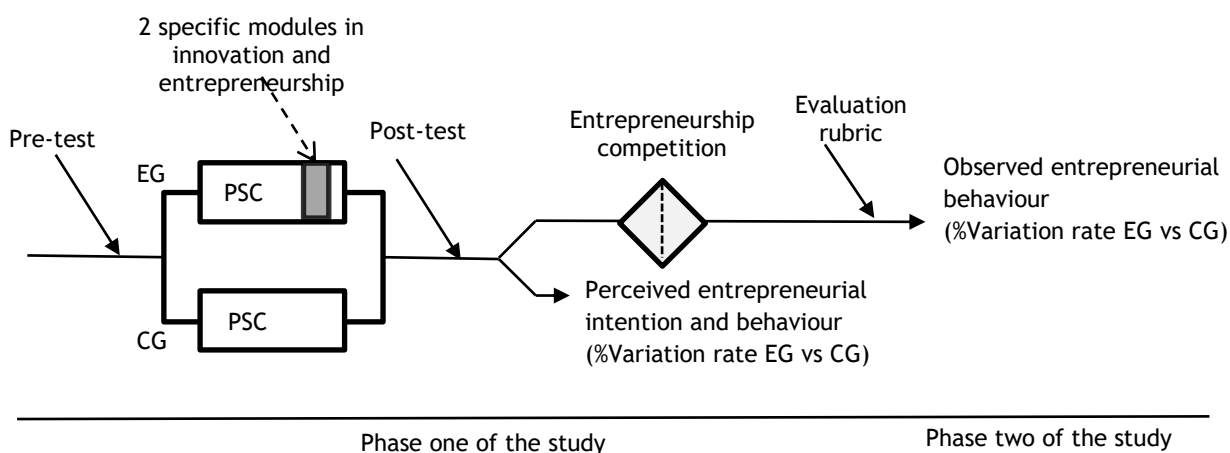


Figure 2. Procedure of the study.

Source: authors

The entrepreneurial intention and the perceived knowledge and skills of the students was initially assessed using a questionnaire conducted before (pre-test) and after (post-test) receiving the specific training (Zhang et al., 2020). The questionnaire was identical in both phases and for both groups (EG and CG) with a series of valid and relevant questions on the subject (Chen et al., 1998; Crespí, 2019; GEM, 2020; Liñán & Rodríguez-Cohard, 2015; OECD, 2018; Ruiz et al., 2019). The questionnaire consists of a total of 22 questions, some using a Likert-type scale 1 to 6 and others presenting a series of affirmations with a single, dichotomous response (yes or no).

The observed entrepreneurial behaviour was then assessed through an entrepreneurial competition with an academic-professional design. Students defend their projects before a multidisciplinary tribunal made up of experts in innovation and

entrepreneurship. The tribunal evaluated the projects in terms of the development of the competences imparted during the entrepreneurship course by means of a rubric (Ferrerías-García et al., 2019). This rubric permitted the evaluation of the impact of the training on the attitudes and observed behaviour of the students in terms of the competences imparted in the course and complemented by the results self-reported by the students regarding entrepreneurial intention and behaviour.

### Measuring the results of the teaching innovation project experience

The aim of this project was to determine if a course in transversal competences associated with entrepreneurship, integrated into the university curriculum, boosts students' interest in pursuing a professional vocation with a transformative purpose and behaviour. The experience of the teaching innovation project compares, by means of self-evaluation (phase one) and observation (phase two), the impact of specific training in the competences associated with entrepreneurship in the entrepreneurial intention and entrepreneurial behaviour of students.

Phase one. Entrepreneurial intention, before and after the course

The following is an assessment of the comparative results of the student self-evaluation by means of a questionnaire.

Firstly, regarding their **Entrepreneurial Intention (EI)**, students were offered three possibilities or types of entrepreneurship: type A: create a business-company, type B: intrapreneurship oriented towards the market: product or service, and type C: intrapreneurship with a social-environmental orientation. The intention type B and type C are added to the habitual entrepreneurial goal of "starting a company". Despite the novelty of the question, students understood the questionnaire, as demonstrated by a comparison with the results of the GUESS 2018 survey regarding intention type A showed similar results (Fernández de Caleyá et al., 2019).

Secondly, an analysis of the different types of Entrepreneurial Intention (EI) boosted by the training course are provided in Figure 3, below.

The results for the EG show that type A remained at 10%, type B increased 2% and type C increased 6%.

For the CG, type A increased 5%, type B decreased 2% and type C increased 6%.

These results appear to indicate that:

For the EG, specific training does not increase type A entrepreneurship, the creation of a company, but it does increase type B, market-oriented intrapreneurship and type C social-environmental intrapreneurship.

For the CG, an increase was seen in type A entrepreneurship and type C intrapreneurship and a drop in type B.

Thirdly, the scores for EI for both the EG and the CG rose from 23% to 29% for the entire sample.

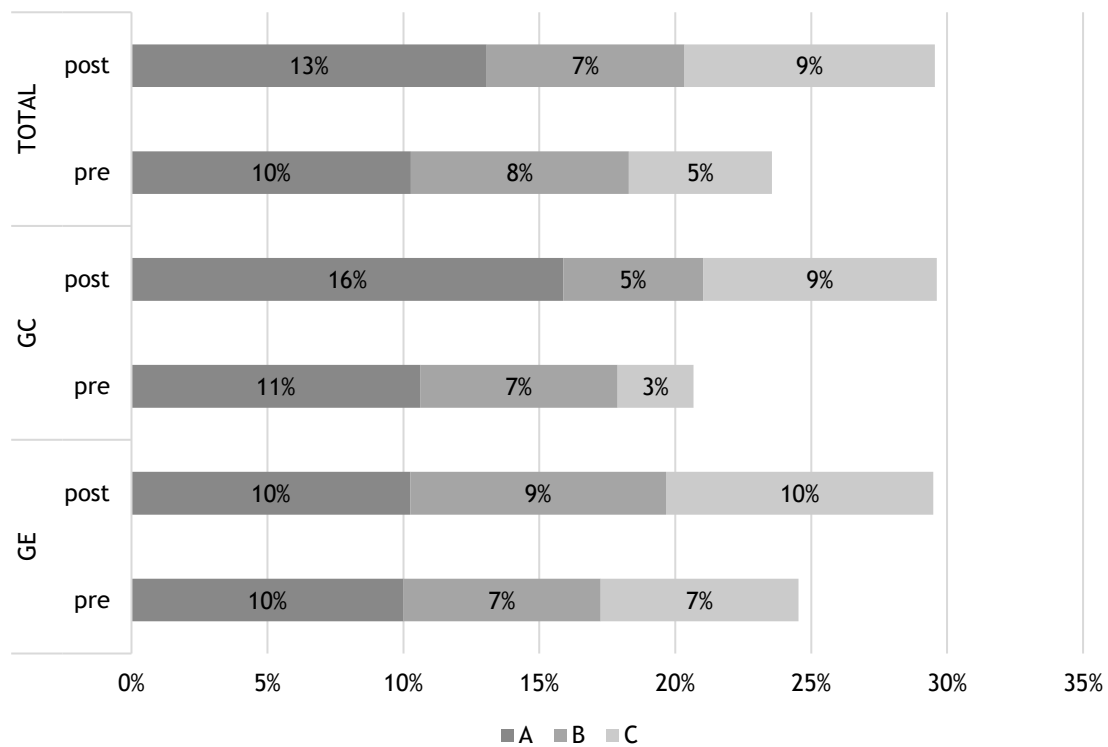


Figure 3. Type of entrepreneurial intention encouraged by education in entrepreneurship.  
Source: authors

### Phase one. Perceived entrepreneurial behaviour

In a second instance, and according to empirical studies (Liñán & Rodriguez-Cohard, 2015), in order for intention to become behaviour students must feel they have the knowledge, skills and/or experience to be entrepreneurial (PBC). The questionnaire asks students to self-evaluate their knowledge, skills and/or experience specific to entrepreneurship (GEM, 2020).

The results of the self-evaluation, provided in Table 1, show significant differences in the pre-test and post-test scores for PBC in the EG ( $F=16.31$ ;  $p=0.00$ ), although the effect size is weak ( $\eta^2 0.03$ ), while not significant changes were found in the CG ( $F=0.03$ ;  $p=0.87$ ).

Table 1  
Significant differences between pre-test and post-test results for the CG and EG

Group	Pre-test mean	Post-test mean	Differences in mean	F	Sig.	Partial eta squared
GC	3.24	3.26	0.02	0.03	0.87	-
GE	2.95	3.46	0.51	16.31	0.00	0.03



## Phase two. Observed entrepreneurial behaviour

Observed entrepreneurial behaviour completes the self-evaluation questionnaire by students with the application of a rubric (Ferrerías-García et al. 2019). This rubric was applied to the 28 projects (blind to the tribunal) presented by 162 students in the entrepreneurship competition. In general terms, a positive effect in observed entrepreneurial behaviour was found among those who took the course in entrepreneurship (Table 2), given that the rubric shows significant differences in the qualifications granted by the tribunal. The projects associated with the EG showed more attributes referring to the personal attitudes (variation rate = 40%) and entrepreneurship (variation rate = 20%) than the CG. Similar results were found in the criteria perceived opportunity and creativity (variation rate = 32%) and the degree of innovation (variation rate = 28%). No significant differences were found between the EG and the CG regarding social-environmental impact of the projects.

Table 2

*Percentage of variation in the observed behaviour of the CG and EG.*

Personal attitude	Attitude towards entrepreneurship	Identification of Opportunities / Creativity	Social-environmental impact	Innovation
40%	20%	32%	0%	28%

Source: authors

## Discussion of the results

The principal findings of the study indicate that, firstly, both groups (EG and CG) enhanced their overall entrepreneurial intention. This may be due to the fact that both groups received the same training in personal skills and competences (PSC) associated with entrepreneurship (UNCTAD, 2009; Bacigalupo et al., 2016; Comisión Europea, 2013).

Secondly, the specific training in entrepreneurship imparted to the EG appears to have enhanced type C entrepreneurial intention for social-environmental entrepreneurship, and type B, market oriented intrapreneurship, but not type A, creation of a company (Figure 3). This suggests that the training was imparted with a broader perspective of entrepreneurship, that is, boosting the capacity to create value by transforming ideas and opportunities (Bacigalupo et al., 2016; Giancesini et al., 2018; Renfors, 2020). In this way, the course succeeded in broadening the view of entrepreneurship, making plausible new ideas and options for entrepreneurship. Finally, both groups (CG and EG) showed an increase in type C entrepreneurial intention. This is logical given that the development of personal skills and competences (PSC) using the PBL methodology especially with these types of entrepreneurial skills (United Nations SDG).

Additionally, the study found a positive effect of education in entrepreneurship on students' perceived capacity for entrepreneurship in their knowledge and

experience (PBC), given the significant differences found between the EG and the CG (Table 1). This suggests that the course in entrepreneurship achieved its goal in that students of the EG feel they have more knowledge, skills and experience in the area of entrepreneurship (Liñán & Rodríguez-Cohard, 2015).

Finally, in the project competition, the study found a positive effect on observed entrepreneurial behaviour. This was demonstrated by the fact that the projects of the EG showed greater attributes in terms of personal attitudes and entrepreneurship as well as in perceived opportunity, creativity and in the degree of innovation (Table 2). This is in line with the contents of the practical PBL modules of the course in entrepreneurship (Fernández de Caleyá & Maylín, 2020; Ferreras-García, et al., 2019).

### Conclusions and contributions

Entrepreneurial competence is one of the most critical competences to be developed in all stages of education (Nabi et al. 2017; Tobón, 2013). Specifically, at the university level, the contribution to this competence as part of a comprehensive education and enhanced employability demonstrate the need to pursue further the development of these skills (Crespí & García-Ramos, 2021; Martínez-García et al., 2019). Both the Entrepreneurship 2020 Action Plan of the European Commission and the report on Spain of the *Global Entrepreneurship Monitor* emphasise the need to implement educational programs or courses into university curricula to boost the development of entrepreneurial competences (Comisión Europea, 2013; GEM, 2020). Entrepreneurial competences “should be understood in the broadest sense as the capacity to turn ideas into actions” (Comisión de Cultura y Educación del Parlamento Europeo, 2015, p. 5).

This teaching innovation project responds to this need, offering specific education in entrepreneurship, incorporated into a curricular course in all degree programs (PSC). The ultimate objective is to promote interest in transformative behaviour (Bacigalupo et al., 2016; Ganesini et al., 2018; Renfors, 2020). The proposal provides a specifically design program of education in entrepreneurship (associated with a formal complementary course) to incentivise entrepreneurship from the outset of university education. This study confirms the positive impact of this training on entrepreneurial intention and entrepreneurial behaviour both perceived and observed (Ferreras-García et al., 2019; Zhang et al., 2020). It can be concluded that this training: 1) boosts the general interest of students in entrepreneurial intention, projecting towards a desired future scenario in their professional life, and 2) boosts entrepreneurial behaviour both perceived and observed. Furthermore, this teaching innovation project offers a broader vision of entrepreneurship with a transformative character. The classic entrepreneurial intention, create a company (Ruiz et al., 2019) is extended to type B: intrapreneurship oriented towards the market and type C, social-environmental intrapreneurship.

In this sense, it can be said that this research contributes to highlight the importance of a comprehensive education in entrepreneurship and innovation in encouraging transformative behaviour. Training, therefore, that not only aims to have

an impact on the generation of new companies but also aims to broaden students' horizons towards entrepreneurship, encouraging any student to see themselves as someone able to generate value and transform their society. Finally, we make note of some best practices of this experiment: 1) to implement a course that develops personal transversal competences, 2) to apply project based learning (PBL) techniques associated to the SDG, and 3) develop entrepreneurial competences through specific training in order for students to feel more confident in their knowledge, skills and experience.

### **Limitations and future research**

The principal limitation of this experience lies in its novelty. There has been little prior research into transversal actions across more than one field of study and so effective instruments for the development and measurement of these actions are lacking.

Future lines of research should take into consideration the situation of students at the outset, in order to improve their attitudes towards entrepreneurship. The bias produced by social norms and their influence on the choice of degree are evident in the differences in entrepreneurial intentions according to area of study and gender (Ruiz et al., 2019). Future teaching innovation projects should focus on this area in particular in order to create more inclusive programs.

## References

- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Bacigalupo, M., Kampylis, P., Punie, Y., & Van den Brande, G. (2016). *EntreComp: The Entrepreneurship Competence Framework*. Publication Office of the European Union. <https://doi.org/10.2791/593884>
- Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13(4), 295-316. [https://doi.org/10.1016/S0883-9026\(97\)00029-3](https://doi.org/10.1016/S0883-9026(97)00029-3)
- Comisión de Cultura y Educación. (2015). *Informe sobre el fomento del emprendimiento juvenil a través de la educación y la formación*. Parlamento Europeo.
- Comisión Europea. (2013). *Comunicación de la Comisión al Parlamento Europeo, al Consejo, al Comité Económico y Social Europeo y al Comité de las Regiones. Plan de Acción sobre Emprendimiento 2020. Relanzar el espíritu emprendedor en Europa*. Oficina de Publicaciones de la Unión Europea.
- Comisión Europea. (2016). *La educación para el emprendimiento en los centros educativos en Europa. Informe de Eurydice*. Oficina de Publicaciones de la Unión Europea. <https://doi.org/10.2797/770868>
- Crespí, P. (2019). *La necesidad de una formación en competencias personales transversales en la universidad. Diseño y evaluación de un programa de formación*. Fundación Universitaria Española.
- Crespí, P., & García-Ramos, J. M. (2021). Generic Skills at University. Evaluation of a Training Program. *Educación XX1*, 24(1), 297-327. <https://doi.org/10.5944/educxx1.26846>
- De la Torre, T., Ruiz, E., Escolar, M. C., Baños, V., Gañán, Á., Corbí, M., Santos, J., & Sánchez, A. I. (2015). Impacto de la educación en la cultura del emprendimiento: Estudio cualitativo. *International Journal of Developmental and Educational Psychology*, 2(1), 117-128. <https://doi.org/10.17060/ijodaep.2015.n1.v2.99>
- Fernández de Caleyá, R., & Maylín, C. (2020). Reflexión sobre las rúbricas de evaluación en las primeras etapas de la educación emprendedora en el contexto universitario de grado. En B.R. Hernández-Sánchez, G.M. Cardella y J.C. Sánchez-García (Eds.), *Retos y oportunidades para emprender en la sociedad del conocimiento*, (pp. 365-370). Dykinson.
- Fernández de Caleyá, R., Vázquez, U.J., Maylín-Aguilar, C. & Rivera-Kempis, C. (2019). Análisis de los factores determinantes para la formación académica de

- emprendedores durante sus estudios de grado universitario. En E. Herruzo-Gómez, B. R. Hernández-Sánchez, G.M. Cardella & J.C. Sánchez-García (Eds.), *Emprendimiento e Innovación: Oportunidades para todos*, (pp. 17-23). Dykinson.
- Ferreras-García, R., Hernández-Lara, A.B & Serradell-López, E. (2019). Entrepreneurial competences in a higher education business plan course. *Education + Training*, 61(7-8), 850-869. <https://doi.org/10.1108/ET-04-2108-0090>
- GEM. (2020). *Global Entrepreneurship Monitor. Informe GEM España 2019-2020*. Editorial de la Universidad de Cantabria. [https://www.gem-spain.com/wp-content/uploads/2020/06/Informe-GEM-Espa%C3%B1a-2019\\_20.pdf](https://www.gem-spain.com/wp-content/uploads/2020/06/Informe-GEM-Espa%C3%B1a-2019_20.pdf)
- Gianesini, G., Cubico, S., Favretto, G., & Leitão, J. (2018). Entrepreneurial Competences: Comparing and Contrasting Models and Taxonomies. *Entrepreneurship and the Industry Life Cycle. Studies on Entrepreneurship, Structural Change and Industrial Dynamics* (pp. 13-32). [https://doi.org/10.1007/978-3-319-89336-5\\_2](https://doi.org/10.1007/978-3-319-89336-5_2)
- González, Á., López, L., & Pérez, R. (2019). The Role of Higher Education in Development of Entrepreneurial Competencies: Some Insights from Castilla-La Mancha University in Spain. *Administrative Sciences*, 9(16), 1-24. <https://doi.org/10.3390/admsci9010016>
- González-Monteaudo, J., & León-Sánchez, M. (2020). Aprendizaje por proyectos como metodología para una escuela inclusiva e intercultural. Una propuesta didáctica en educación secundaria. *Revista Educação, Pesquisa e Inclusão (REPI)*, 1(1), 23-34. <http://dx.doi.org/10.18227/2675-3294repi.v1i1.6266>
- Liñán, F., & Rodríguez-Cohard, J. C. (2015). Assessing the stability of graduates' entrepreneurial intention and exploring its predictive capacity. *Academia Revista Latinoamericana de Administración*, 28(1), 77-98. <https://doi.org/10.1108/ARLA-06-2013-0071>
- Martínez-García, I., Padilla-Carmona, M. T., & Suárez-Ortega, M. (2019). Aplicación de la metodología Delphi a la identificación de factores de éxito en el emprendimiento. *Revista de Investigación Educativa*, 37(1), 129-146. <https://doi.org/10.6018/rie.37.1.342521>
- McClelland, D. C. (1973). Testing for Competence Rather Than for "Intelligence". *American Psychologist*, 28(1), 1-14. <https://doi.org/10.1037/h0034092>
- Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education*, 16(2), 277-299. <https://doi.org/10.5465/amle.2015.0026>

- Neary, S., Dodd, V., & Hooley, T. (2015). *Understanding Career Management Skills: Findings From the First Phase of the CMS Leader Project*. University of Derby. <http://www.leaderproject.eu/cms-framework.html>
- Núñez, L., & Núñez, M. (2016). Noción de emprendimiento para una formación escolar en competencia emprendedora. *Revista Latina de Comunicación Social*, 71, 1069-1089. <https://doi.org/10.4185/RLCS-2016-1135>
- OECD. (2018). *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition, The Measurement of Scientific, Technological and Innovation Activities*. OECD Publishing. <https://doi.org/10.1787/24132764>
- ONU. (2019). *Informe de los Objetivos de Desarrollo Sostenible 2019*. Naciones Unidas. [https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019\\_Spanish.pdf](https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019_Spanish.pdf)
- Rauch, A., & Hulsink, W. (2015). Putting Entrepreneurship Education Where the Intention to Act Lies: An Investigation Into the Impact of Entrepreneurship Education on Entrepreneurial Behavior. *Academy of Management Learning & Education*, 14(2), 187-204. <https://doi.org/10.5465/amle.2012.0293>
- Renfors, S. M. (2020) Identification of ecopreneurs' business competencies for training program development, *Journal of Education for Business*, 95 (1), 1-9, DOI:10.1080/08832323.2019.1595501
- Ripollés, M., & Michavila, F. (2020). Ambidextrismo o el equilibrio: la esencia de las competencias emprendedoras y su aprendizaje no formal. *Revista de Docencia Universitaria*, 18(1), 71-89. <https://doi.org/10.4995/redu.2020.13316>
- Ruiz, J., Ramos, A. R., & Lechuga, M. P. (2019). *Emprendimiento universitario en España. Informe GUESSS 2018*. [http://www.guesssurvey.org/resources/nat\\_2018/GUESSS\\_Report\\_2018\\_Spain.pdf](http://www.guesssurvey.org/resources/nat_2018/GUESSS_Report_2018_Spain.pdf)
- Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do Entrepreneurship Programmes Raise Entrepreneurial Intention of Science and Engineering Students? The Effect of Learning, Inspiration and Resources. *Journal of Business Venturing*, 22(4), 566-591. <https://doi.org/10.1016/j.jbusvent.2006.05.002>
- Tobón, S. (2013). *Formación integral y competencias. Pensamiento complejo, currículo, didáctica y evaluación* (4ta. ed.). ECOE.
- Toledo, P., & Sánchez, J. M. (2018). Aprendizaje basado en proyectos: una experiencia universitaria. *Profesorado. Revista de currículum y formación del profesorado*, 22(2), 471-491. <https://doi.org/10.30827/profesorado.v22i2.7733>
- UNCTAD, Conferencia de las Naciones Unidas sobre Comercio y Desarrollo. (2009). *Programa Empretec. Guía del empresario*. Naciones Unidas. [https://unctad.org/es/system/files/official-document/diaeed20093\\_sp.pdf](https://unctad.org/es/system/files/official-document/diaeed20093_sp.pdf)

Villardón-Gallego, L. (2015). *Competences genéricas en educación superior. Metodologías específicas para su desarrollo/Villardón-Gallego (Coord.)*. Narcea.

Zhang, T., Low, L.C., & Seow, P.S.(2020) Using online tutorials to teach the accounting cycle. *Journal of Education for Business*, 95(4),263-274.  
doi/10.1080/08832323.2019.1636755