sustainability

MDPI

Article

Training Entrepreneurial Competences with Open Innovation Paradigm in Higher Education

Patricia P. Iglesias-Sánchez [1], Carmen Jambrino-Maldonado [1,*] and Carlos de las Heras-Pedrosa [2]

[1] Faculty of Economics and Business Studies, University of Malaga, 29071 Malaga, Spain
[2] Faculty of Communications Sciences, University of Malaga, 29071 Malaga, Spain
* Correspondence: mcjambrino@uma.es; Tel.: +34-952-13-12-57

Received: 8 July 2019; Accepted: 25 August 2019; Published: 28 August 2019

Abstract: This paper shows the effects of training entrepreneurial competences on employability in higher education. It identifies teaching methods that are more effective in order to improve entrepreneurial competences. These are hackathon, team building, role play, and practical cases with entrepreneurs at a Spanish university. In contrast to the methods shown in previous literature, a mixed-method is proposed. Firstly, a qualitative technique based on three focus groups with the participation of lecturers, students, and entrepreneurs are used. Additionally, a regression analysis seeks links between entrepreneurial intention and employability with entrepreneurial competences with 329 students. The findings show the direct effect on skills appreciated in companies, using collaborative and practical activities focusing on competency perspective. This research work provides a new approach to training entrepreneurial competences that demonstrates the main role of Open Innovation enhancing the main stakeholders' motivation and improving their skills. Useful information is provided to design the academic syllabuses and improve the level of employability of university graduates.

Keywords: Higher Education; University; Entrepreneurial competences; Employability; Theory of Planned Behaviour (TPB); Open Innovation

1. Introduction

Entrepreneurship is currently regarded as a solution for socio-economic development given the growth of new business worldwide [1]. However, the entrepreneurial intention (EI) of university students has steadily increased but has not yet reached the levels desirable to solve the problem of youth unemployment. This is the reason why regions with the highest rates of unemployment have been experiencing an increase in entrepreneurs in recent years, particularly in the case of the south of Spain [2,3]. Entrepreneurship is considered a transversal competence aimed at increasing employability and adaptability to the job market [4,5]. This is the reason why the reduction of unemployment rates and effective policies in business creation are a priority which cannot be left solely up to governments. In this regard, universities are assuming responsibilities and seeking to involve their multiple stakeholders, in line with their social commitment to some extent [6]. In recent years, youth unemployment has become a major topic that has drawn the attention of policymakers [7] and searching for a solution requires a shift to active employment policies, training, and access to the labour market. Entrepreneurial education programmes are proposed to enhance it and, although this statement is supported by numerous research studies [8–10], further analysis is required to know how training in entrepreneurial competences influences recruitment. There is a consensus that entrepreneurial intention is a personal orientation which might lead to venture creations but measuring this question remains a challenge [6,10], along with tracing precisely how entrepreneurial intention

results in businesses set up by people graduating from higher education [11]. Such predisposition could lead to owning a business or becoming self-employed or be the basis for facing professional life with a set of skills related to entrepreneurship. Acquisition of entrepreneurial competences means the ability to recognize and act on opportunities, take initiative, persuade, argue and communicate and apart from that, it implies being able to exploit an opportunity in a specific context, including its management and evaluation [12] Based on this description, being entrepreneurially competent is appreciated in paid employment and self-employed economic activities [13,14].

It seems obvious that students need opportunities to practice what they are learning and obtain experience in the kinds of tasks where they are expected to demonstrate competence in their professional life [15–18]. Therefore, the educational system is facing the challenge of designing activities aimed at achieving higher quality in student learning, overcoming the traditional paradigm at the university, more focusing on the transmission of knowledge and application of procedures [19]. Thus, universities strive to improve employability for their graduates by embedding key competences, which include entrepreneurial skills in higher education curricula [20]. Given the above, the aim of the study is to test the effectiveness of a set of tools designed to improve entrepreneurial competences and compare their results. Fayolle [21] (p. 696) points out that few studies set out to compare the effectiveness and efficiency of different teaching methods used. Overall, there are two main trends: behaviourism and constructivism. Behaviourism assumes learning is primarily the passive transfer of knowledge from the teacher to the student, while constructivism assumes that learning involves actively participating in the construction of new understanding [22] (p. 280). Both have been widely discussed in the literature [22], but there is less evidence about tools, activities and pedagogies associated with them. Specifically, Bechard and Grégoire [23] identified three types of teaching models in higher education: the supply model, the demand model and the competency model, an additionally the hybrid teaching models as a result of their combination. Some kinds of activities are associated with each one. The supply model promotes pedagogical methods leading to transmission and reproduction of knowledge and the application of procedures. The demand model uses activities involving exploration, discussion and experimentation. Finally, the competence model focuses on pedagogical methods that highlight active problem-solving in real-life situations. According to the authors "teaching is conceived as a strategic intervention to allow for—and influence—how students organize the resources at their disposal (e.g., knowledge, abilities) into competences that can be mobilized for action" [23] (pp. 115–116). In particular, this approach used to be related to the acquisition of competences as it seems more suitable for matching graduates' professional profiles to labour market requirements employability [5,6,20].

According to Kolvereid [24], Rae [16], and Sewell and Dacre Pool [20] training competences can be a key factor for business creation but also for employability and, this is the issue on which this paper is built. Entrepreneurial competences as an indicator of being better prepared to face the labour market and professional development are the core of this research. Likewise, an improvement of employability built out of entrepreneurial competences is a new insight in this field.

In this context, a collaborative model in which stakeholders can play a key role could enhance competency acquisition. However, these models have still not become widespread in the educational environment and, they could be a valuable source of innovation and modernisation for universities, especially in combination with entrepreneurship [25]. Nor research has focused enough effort on this line of investigation and currently, there are still few studies with this approach [21] the Open Innovation (OI) approach is beginning to be introduced in order to involve students, lecturers, graduates and companies in decision making. Consequently, motivation and learning and professional outcomes can be improved [26]. This issue has barely been applied in previous literature despite being an opportunity for higher education [27]. Thus, the introduction of OI in this research is a shift from the traditional approach in this field.

On the basis of the above, this research work seeks to respond to three main questions. The first being, can entrepreneurial competences adapt the university students' profile for facing labour market requirements better? The second, what design (contents and methodology) of training activities

improve students' skills? The last, what effects do Open Innovation practices have in training of skills in higher education?

This paper begins with a review of the existing literature focused on the Theory of Planned Behaviour (TPB) relating to entrepreneurial intention and reviewing the most mentioned entrepreneurial competences. Both are the basis for designing different training tools and, consequently, they are the focus of the final analysis [28,29]. Secondly, the methodology used is discussed and although quantitative descriptives are included, this research work is developed supported by a qualitative technique. On the one hand, the measurement of the entrepreneurial intention of 329 students from a public Spanish university before and after student participation in training activities and on the other hand, three focus groups in which participating students, lecturers, and entrepreneurs with the support of the Atlas.ti. This choice allows the aforementioned objectives to be reached and the limitations mentioned in the literature to be overcome by focussing on a specific case of students on different degree courses. Thirdly, the most important results of the investigation are presented. The results obtained have contributed to show an improvement in entrepreneurial competences when academic knowledge and passive learning is not the core and the designed activities are based on interaction and, furthermore, when the participants themselves feel more personally engaged and an integral part of the decision-making process. Additionally, the main contribution is a reflection based on a case of study that offers a framework with keys of philosophical and didactical dimensions of education programs focused on entrepreneurial competences. The paper ends with the main conclusions and their implications in the field of entrepreneurship.

2. Literature Review

A proper plan for fighting unemployment should include entrepreneurship as a keystone [7,30]. Governments all over the world are, thus, focused on promoting entrepreneurship. Direct effect on employment, innovation, and growth of the nation is widely shown in previous literature [31–33]. However, as criticised by Goddard and Vallance [34], and Fuster [35], further evidence is needed to show the direct effect and to understand the influence of the environment on these relationships. Policies, funds, grants, and educational programs are some of the facilities executed to support economic sustainability [36,37]. That is, actions and practices aim to support long-term economic goals without having a negative impact on social and environmental aspects. In any case, entrepreneurship should not only be considered as business creation, but would also improve employability and adaptability to the job market [1,5]. Both positive effects draw from entrepreneurship as a transversal competence and, therefore, its training at different degree levels allows students to demonstrate a more adapted profile to labour market requirements. Universities come into the picture for this reason and they have been taking on fostering the entrepreneurial spirit. The incorporation of entrepreneurship in higher education programmes completes the educational and research role of these institutions and fulfils a social role [10,26,38]. Moreover, recent literature suggests that entrepreneurial education programmes improve the ability to discover and exploit opportunities and enhance entrepreneurial intentions [39]. Despite the fact that relationships between entrepreneurial education programme and entrepreneurial intention are shown in several research papers [40–42] there is equivocal evidence. For example, Souitaris et al. [39] found no significant relationship and other studies even suggest an inverse relationship [43,44]. Curiously, some explanations point out that personal abilities and increased awareness of the challenge inherent in starting a business are critical [43]. In this sense, education plays a prominent role in gaining knowledge and competences as well, though further empirically rooted research is needed into what and how entrepreneurial education programmes impact on both [45,46]. This research paper focuses on analysing how training activities affect entrepreneurial intention (EI) and competence profile. Consequently, entrepreneurship is typically studied in degrees linked to the economy and business, to a lesser extent linked with engineering and is practically non-existent in Humanities Degrees. By contrast, there are very few studies comparing groups from

different knowledge areas [41,42]. All of those included in this study are precisely an innovation with respect to previous research papers.

The Theory of Planned Behaviour (TPB) by Ajzen [47] supports the analysis in this study. This theoretical framework is widely used in previous literature to approach entrepreneurial intention [9,48–51]. Its robustness becomes an appropriate model to explain the predisposition and intention to set up a business [24,52,53] especially if the focus is on pedagogical processes and learning contexts [9,54,55]. This framing considers three issues: (1) Personal Attitudes, (2) Subjective Norms, and (3) Perceived Behavioural Control, and the result of their interaction has a direct effect on entrepreneurial intention. Although this research paper focuses on these elements, it is undeniable that attitudes are not just a product of cognitive factors. However, external factors should be borne in mind when setting up a business [56]. On the other hand, according to Krueger et al. [54], and based on models by Shapero and Sokol [57], and Ajzen [47], internal traits and external aspects (socio-cultural factors) could be moderated by the learning process and the entrepreneurial competences could be improved as a consequence of this [29]. A degree of consensus now exists concerning entrepreneurial personal traits and skills in literature. As a result of this, creativity, risk-taking, proactivity as an entrepreneur in the internal dimension, and entrepreneurship image in the external dimension are highlighted. Mitchelmore and Rowley [28] emphasized the relevance of establishing an agenda for future research and experiments in relation to entrepreneurial competences and their implications on economic and social development. With this in mind, several research papers [14,29,43,58–61] Morris et al., [62] analyse how the aforementioned entrepreneurial competences have influenced entrepreneurship.

Finally, it should be emphasized that this research work overcomes the gap referred to in the literature. The lack of common knowledge and evidence about didactical, pedagogical dimensions, and performance of entrepreneurial education and teaching [19,21]. Even less attention was paid to the competence-based approach.

To address these questions, we have formulated a series of working hypotheses:

Hypothesis 1.1: *There is a crucial relationship between creativity, risk aversion and proactivity and entrepreneurial intention.*

Hypothesis 1.2: *A link exists between entrepreneurial competences: creativity, risk aversion and proactivity and the improvement of perceived employability.*

Hypothesis 2: *Entrepreneurial intention (EI) depends on the following factors:*

H2.1. Creativity (C)
H2.2. Risk aversion (RA)
H2.3. Proactivity

Hypothesis 3: *The improvement in perceived employability maintains a dependence relation on the following factors:*

H3.1. Creativity (C)
H3.2. Risk aversion (RA)
H3.3. Proactivity

The hypothesis related to entrepreneurial intention and entrepreneurial competences are on the lines of that mooted by research works like. This issue has been widely discussed in general terms by Morris et al. [62] and Arranz et al. [63]. Both reflect and provide some evidence over the potential of a competence-based approach on entrepreneurship education. Likewise, there are numerous research papers that pay attention to how competences affect to entrepreneurial intention [4,14], while other research works specifically adjust their focus on entrepreneurial competences [10,29,43]. Even, some authors adjust their fieldwork to one or a group of entrepreneurial competences.

For example, Crant [58] and Uy et al. [60] deepened in proactivity, while Sarri et al. [59] designed their study highlighting creativity and innovation as main entrepreneurial competences. In this case, entrepreneurial competences more referred in previous literature are the basis of the hypothesis. Therefore, the insights provided are the result of this different vision in the entrepreneurship field.

By contrast, hypothesis 1.2 and 3 focused on employability and entrepreneurial competences provide insight from its own approach regarding previous literature. It is possible to find out two types of studies. On one side, those focused on the contribution of competences–not only entrepreneurial competences–in employability [18]. On the other hand, research works as Machin and McNally [6], Dacre Pool and Sewell [64], but both are mainly series of reflections in which some proposals for researchers and policymakers can support their decisions. Thus, the scarcity of reliable, complete and up-to-date evidence on this issue (entrepreneurial competences and employability) is identified as the source of main insights in this study.

Open Innovation in Higher Education

The discussion of what form Higher Education should take to generate knowledge and provide professional skills remains open. UNESCO [17] (p. 3) points out that "education tailored to current need implies transcending academic knowledge and passing from the student's passive learning to a conception where learning is interaction and it is built among all". Consequently, universities try to design activities aimed at achieving higher quality in student learning, overcoming the traditional paradigm. In this scenario, Open Innovation (OI) introduces a new perspective. This paradigm means listening to all stakeholders as a source of knowledge and, consequently as a resource of innovation and competitive advantage. Therefore, OI develops positive dynamics in self-empowerment and allows the stakeholders (mainly, students, lecturers, decision-makers in universities, and entrepreneurs) to generate confidence in themselves and participate actively in building a modern and engaging image of the university. Chesbrough [65] introduced the concept in 2003 and, since then, it has been analysed in different contexts, but particularly the educational environment is an issue where a great deal of further development is still needed. In recent years, the benefits of embedding an openness philosophy in learning based on collaborative knowledge have been widely discussed in the literature [25], but not yet on the desired scale. Social innovation in education is possible due to a collaborative model [66]. In this sense, although recent empirical reviews [45] suggest a positive relationship between participating in an entrepreneurial education programme and developing entrepreneurial intentions, currently there is still insufficient evidence to support or refute this statement. OI in the industrial sector has drawn more attention than in other sectors, such as services [67]. This is particularly striking in the educational environment [26]. Therefore, the lack of empirical evidence regarding innovation and the educational institution is the reason for this research and is the main new aspect. Moreover, whether the numerous benefits linked to OI [68] are transferable to the educational environment can be tested. The implementation of OI can also benefit organisations [69] and higher education institutions can thus find an opportunity to engage with stakeholders, especially with students, and to portray a positive image to society, exactly as stated in the three focus groups targeted in this research work. Currently, the shortage of empirical evidence obtained so far in the study of OI from this perspective is a deviation from customary practice in this field. Chesbrough [65] claims that sustaining performance in an increasingly complex world requires confidence in this paradigm. This novel instrument is expected to increase in the educational environment, and it will pose a growing challenge in the coming years. It seems a logical step, as is actually happening in other fields.

In the field of Open Innovation, the qualitative techniques are mostly used [67] because it is especially suitable to deepen these assessments, the extent, scope and nature of these practices [27]. For this reason, the Open Innovation approach in this study, is analysed through qualitative techniques.

3. Method

3.1. Measures and Instrument

The entrepreneurial intention, before participation in activities for entrepreneurial training, is measured using a questionnaire modelled on the aforementioned Theory of Planned Behaviour [47]. Its strength as a framework in the development of research in this field, as well as its explanatory capacity according to the literature reviewed, justifies this choice. The questionnaire was divided into four blocks: I. Personal Attitudes (PA) consisting of five items, II. Subjective Norms (SN) consisting of three items, III. Perceived Behavioural Control (PBC) with six items, and IV. Entrepreneurial Intention (EI), measured with another five items. A scale of seven points (Likert scale), with 1 expressing the strongest disagreement and 7 the highest level of agreement is used to analyse each one of them.

Once the different training activities have been completed, a combination of a quantitative technique and qualitative technique is made. The purpose of this choice is to gain a better understanding of connections or contradictions between qualitative and quantitative data, which can provide opportunities for participants to have a strong voice and share their experiences across the research process.

The carrying out of this study necessitates a mixed-method approach, the novelty of the analysed field and the research questions raised require this type of method due to their complex nature [70,71]. The quantitative methodology was useful to test Entrepreneurial Intention before and after implementing four types of activities for training entrepreneurial competences as well as the improvement of employability perceived by students. Secondly, the qualitative methodology based on three focus groups was used to design the training competences, approach in understanding how interactions occur and the specific contributions of stakeholders. Finally, we used the concurrent triangulation strategy to cross-validate the two databases [70,72]. Specifically, Cai [71] highlights that the general purpose for conducing qualitative and qualitative method in higher education is to gain a fuller understanding. Papadimitriou, Ivankova, and Hurtado [73] (p. 2) "point that integration of methods helps ensure more rigorous studies and better transferability of the generated conclusions". It has tended to become an excellent option to approach the research topic and has increased in higher education. This study utilized a sequential explanatory design [74] consisting of two phases. Thus, the data from the focus groups could help explain the quantitative results provided by regression analysis for the purpose of complementarity [75]. The data were connected, and the quantitative phase helped inform the qualitative phase. The results were connected to gain a better understanding of the findings from both phases. Consequently, firstly a regression analysis supported in a questionnaire designed to show entrepreneurial competences related to entrepreneurial intention and the improvement of perceived employability is applied. Secondly, three focus groups, one for the lecturers involved and two more for students, is organised to evaluate which tools and resources to train competences related to entrepreneurship are better. The choice of regression and focus group deserves further explanation. In one side, a multivariate analysis technique: linear regression is used because it allows testing the influence and the relationships between main issues [76]. In this case: entrepreneurial intention and employability. This type of analysis is suitable for explaining the extent to how these variables are connected with training of entrepreneurial competences, as well as its predictive ability. On the other hand, focus groups are viewed as the proper qualitative technique due to the exploratory nature of the study and it is a way to identify and report the feelings of a heterogeneous group. In discussion situations, some understanding of issues, concerns and experiences of the people involved is gained [77]. As a result of this, the regression analysis applied in combination with focus group allows identifying omitted variables, unobservable factors that only can be identified through a qualitative approach. Both works perfectly together, one to test quantitatively the proposal model of relationships and the other to contrast based on deepener qualitative details. According to Newman et al. [78], this methodological choice serves to generate new knowledge and test new ideas.

The design of the questionnaire includes five blocks. The first three: creativity, risk aversion, proactivity corresponding to the entrepreneurial internal dimension [14,58–60,79], and entrepreneurship

image is the main item regarding the external dimension, [61] and, finally, the five items for measuring entrepreneurial intention in TPB model are included again. Finally, an item about the improvement of employability is introduced to measure it in connection with entrepreneurial competences. The same scale of seven points is followed.

3.2. Data Collection

The public university in southern Spain chosen represents a valid approach to developing the study because it has been striving to showcase entrepreneurship as professional development for the last two decades. Moreover, this university offers a complete ecosystem with programmes to enhance entrepreneurial spirit, incubators, accelerators, contest of business creation, challenges with enterprise participation, events and forums, mentoring programmes, etc. It should be emphasized that the chosen university belongs to a region with the largest population in Spain [80] and it is mentioned as a key knowledge agent and one of the strengths of the R and D system together with the Technological Park and the Innovation Centres. Initially, it can represent higher education institutions and be the first case of study in this field. Additionally, it is a medium-sized university that it can be regarded as just representative with regard to public higher education, especially in Spain.

The fieldwork lasted four weeks and it was geared towards 329 students from any degree and from different centres belonging to a Spanish public university. The distribution of the sample by degree is in line with the number of students in each area of knowledge at the University of Malaga. They participated at the same time in the programme. The criterion for choosing these students was that they were on university degrees which included specific courses in business creation. In any event, special emphasis has been placed on finding an equal representation of Business and Management, and Non-Business and Management. As a result of this, the type of random selection has been cluster sampling. The entrepreneurial intention from the TPB Model and entrepreneurial competences linked to entrepreneurial intention were measured in the same students before and after their participation in four types of activities for training competences: role play, team building, solving real case studies with an entrepreneur, and, finally, a hackathon. They were all based on problem-solving linked to entrepreneurship. It must be pointed out that these activities were linked with entrepreneurial intention, but it is still not sufficiently analysed from the perspective of employability despite valuable related competences. This is precisely why the measurement of the improvement of employability is introduced in the questionnaire. This item, the students' personal evaluation is only answered after the participation in the training activities. This is one of the main limitation that will be pointed out in the final section, but it is simply intended to highlight the potential of training entrepreneurial competences on their self-confidence. However, the qualitative approach provides additional details about employability introducing the point of view of lecturers and entrepreneurs.

Then, there is a more detailed explanation of each activity in order to understand the underpinning concept of the initiative better. Moreover, Table 1 provides detailed information about the methodology and the pedagogy of each learning tool: duration, technical and human resources, and spaces, etc.

- **Hackathon.** This is an activity focused on solving practical problems that continues for a long time and requires a great deal of energy, patience, or determination, and requires the combination of participants with different profiles who generally do not meet each other beforehand.
- **Team Building.** The action or process of causing a group of people to work together effectively as a team, especially by means of activities, events designed to increase motivation, and promote cooperation focusing on a common challenge. There is competition between groups.
- **Practical Case with an entrepreneur.** A case study is a learning method involving an up-close, in-depth, and detailed examination of a subject of the case, as well as its related contextual conditions. It has a real solution, but the participants do not have this at the beginning, and they can work together in searching for proposals before finding the real solution and its consequences.

- **Role Playing.** This is a technique that allows students to explore realistic situations by interacting with other people in a managed way in order to develop experience and trial different strategies in a supported environment. It is a way of working through a situation, a scenario, or a problem by assuming roles and practicing what to say and do in a safe setting.

Table 1. Technical details of training activities.

Hackathon: Plan and design for the next entrepreneurs fair and work in dossier for attracting sponsors					
Participants	**Duration**	**Space**	**Groups**	**Technical Orientation**	**Human Resources**
80	The whole day	Outside the university in entrepreneurs fair	8	The groups compete against each other with a common challenge. There was an award to motivate more (collaboration of sponsors).	4 Lecturers 2 Coach (two external collaborators)
Team Building: Two different Team Building activities have been developed. The barter puzzle and building a bridge. (1) Groups should complete a puzzle, but the pieces are mixed, and all groups have the pieces needed for the others groups to finish the activity. So, they have to strategize, assign roles and barter with other teams to get the pieces for their puzzle. (2) The groups are re-organized into bigger ones. Each group has the same material for building a bridge (dry noodles, lego, popsicles sticks, etc.). The goal is to construct two bridges as identical as possible. The groups can't see what the other team is doing. However, they are allowed to communicate verbally.					
Participants	**Duration**	**Space**	**Groups**	**Technical Orientation**	**Human Resources**
80	Four hours	Outside the university in entrepreneurs fair	4	The students will be engaged in different task that can be solved together. The students will be involved in large group Team Building as well as small group Team Building. Firstly, students are placed in set groups that are together for the entire Team Building. After, at the end of the activity all groups work together in a community challenge.	3 Lecturers and two external collaborators specialized in business events
Practical Case: Three different entrepreneurs present a real case of their companies. Students should solve the problems making choices like the real life and thinking about resources, communication and consequences. After, each group presents their solution. In the final part, there is a discussion regarding all proposed scenarios and decisions. Finally, the entrepreneurs explain their decision made and the results of performance related to them.					
Participants	**Duration**	**Space**	**Groups**	**Technical Orientation**	**Human Resources**
84	Two hours	The conventional classes	14	The Practical Cases were in five classrooms. Previously, lecturers work with entrepreneurs in creating some real problems or situations in their companies in a Practical Case according to case study method	3 entrepreneurs and 3 lecturers
Role Playing: There are cards with the description of a fictional business venture and there are some cards corresponding to investors. They are distributed among participants randomly. Each student has to perform come up with the role that they have. They have 60 min to prepare their speech. After this, they should present their business with the goal to achieve funds to their classmates. The ventures are presented almost exactly as they would be presented in a real-life situation—a three minute elevator pitch followed by an investor summary and financials.					
Participants	**Duration**	**Space**	**Groups**	**Technical Orientation**	**Human Resources**
85	Two hours	The conventional classes	First division into 5 big groups. In each group the participants are organized in pairs.	They work in pairs. Role Playing is developed in practical classes in which the number of students is less numerous	6 lecturers

In order to develop the different activities according to a standard and providing the lectures with support to implement and manage, a common guide was elaborated to make it easier and make the subsequent comparison possible.

Nevertheless, a fair distribution between students in each kind of activity was achieved, 80 students participated in team building, 80 in the Hackathon, 84 in Practical Cases, and 85 were involved in role playing. Additionally, three focus groups were carried out with the lecturers, an entrepreneur and

students involved in order to evaluate which tools and resources for training entrepreneurial related competences entrepreneurship were better.

The participation was voluntary, but participants had to commit to the whole programme.

The sample consisted of 329 students, in order to maintain levels of statistical confidence (95%) and a statistically recommended margin of error (5%). Regarding the focus groups, a total of 24 participants took part in them (seven lecturers, an entrepreneur, and 16 students). When applying this technique, five persons who had not participated in the entrepreneurial training activities and one of the entrepreneurs involved in the case studies were included to improve the quality of the discussion. A focus group guideline was used to ensure it was implemented correctly.

3.3. Validity and Reliability

The literature reviewed already guaranteed the validity of the questionnaire, but in addition, the internal consistency of both questionnaires was validated as research instruments by applying Cronbach's alpha for all the factors forming each block, exceeding the reference values by 0.92 and 0.89, respectively. In addition, the confidence coefficient for the different dimensions on which the questionnaires are structured was checked and obtained results in the range of over 0.8 and 0.7, respectively. Entrepreneurial intention is the variable which depends on the three other dimensions in both. These three are independent and have a direct influence on the levels of entrepreneurship orientation among the students at Malaga University. Meanwhile, entrepreneurial intention and employability are analysed as a dependent variable of training/acquisition of entrepreneurial competences. In the same way, an analysis of data reliability and trustworthiness that was performed previously demonstrated that all measurement scales exceeded the 0.7 threshold for Cronbach's α in all blocks, both jointly and separately, therefore demonstrating a satisfactory internal validity.

3.4. Regression Analysis

Empirical testing in the field of entrepreneurship has been traditionally performed by means of quantitative techniques [9], this is the reason why qualitative analysis has a greater role in this study. Anyway, a regression analysis leads to focus groups. Regression analysis was chosen due to its versatility in identifying models of behaviour of the independent variables (predictors) and the criterion variable [76]. Previous literature has amply demonstrated dependence relation between entrepreneurial intentions with all other variables [40,81,82]. Therefore, new insights are pursued applying regression analysis linking entrepreneurial intention and improvement of employability with entrepreneurial competences. The technique was performed twice. In both applications, entrepreneurial competences remain as the independent/predictor variables (creativity, risk aversion, proactivity) and the dependent variable changing. Firstly, entrepreneurial intention related to entrepreneurial competences and, finally, the dependent variable is the improvement of employment perceived by students after their participation in the proposed activities. To increase the rigor of the application of the regression analysis, this is performed by using the default method, which consists of entering all the proposed variables into the model. The second phase involves the use of the backward regression method, which consists of introducing all the variables in the equation and then excluding sequentially those with smaller partial correlations. This procedure identifies large variances and the observations associated with small variances, determining which items have a minor impact [76]. All data analysis was performed using SPSS 20.

3.5. The Basis of Qualitative Analysis

Due to the descriptive and observational nature of the study, the qualitative analysis carries far more weight. The gathered data could support decision-making processes when designing entrepreneurship programmes and defining policies to improve student employability. Firstly, a general descriptive analysis is performed and the main correlations between key factors in this research are underlined. In the second part, data analysis considers the three focus groups. Their transcripts are the main source

of information. The grounded theory approach [83,84] supports the structure and the procedure to understand which entrepreneurial training activities are more interesting and why. Atlas.ti is the tool used to systemize the data and provide the desirable insights. The feelings and opinions of the students and lecturers regarding the activities were identified and, finally, the focus was on their specific impact on developing entrepreneurial competences. The codification procedure consisted of identifying keywords or sentences. Only tags used more frequently are retained to provide a better understanding of the most significant questions and allow a more comprehensive comparison. The following step was to group the concepts, and, in any case, some re-coding of the tag was performed to achieve a wider vision. Figure 1 shows the data structure with aggregate dimensions and categories, while Figure 2 highlights the dynamic relationships between topics and dimensions.

4. Results and Analysis

4.1. Descriptive Analysis

Going into detail concerning with the multivariate regression analysis and the qualitative technique, we will carry out a descriptive analysis of the sample in order to present a general view of its make-up and show the main relationships between variables and their significance for the population.

As shown in Table 2, there are 46.5% men and 53.5% women. This percentage is in line with the gender balance distribution at Malaga University.

Table 2. Demographic factors.

		Frequency	Percent
Gender	Male	153	46.5
	Female	176	53.5
University Degree	Computer	19	5.7
	Engineering Industrial	18	5.5
	Engineering Sciences	35	10.6
	Tourism	72	21.8
	Business & Management	137	41.6
	Communication Sciences	34	10.3
	Social & Labour Sciences	3	0.9
	Law	11	3.3
Knowledge Area	Business & Management	137	42.0
	No-business & Management	192	58.0

The research was aimed at equally distributed students in the Business and Management and Non-Business and Management areas, precisely to overcome the gap in the literature, and mainly focusing on students participating in Business and Management faculties and the Economic and Business Sciences Faculties, totalling 42% vs. 58%.

All the degree courses selected contained material on business creation as part of the study programme. Nevertheless, one very important fact should be highlighted: Entrepreneurship is usually a compulsory subject in the last year and the sample contained students from different years. Consequently, there are students that have not taken that subject and, some students may even have taken it as an option or supplementary activity which fosters the entrepreneurial spirit organised by the university. In that case, a pre-existing inclination towards entrepreneurship is assumed [63]. In any event, the participation in this programme was open and the invitation was clearly identified as training entrepreneurial competences and not specifically to create businesses.

Table 3 shows the composition of the focus groups. The typological representativeness was sought with the presence of the different profiles and is correlated with the number of participants of each group in the whole project.

Table 3. Demographics factors of focus groups participants.

		Participants	Percent
Gender	Male	10	46.5
	Female	14	53.5
Knowledge Area	Business & Management	12	50.0
	No-business & Management	12	50.0
Kind of Activity	Hackathon	4	16.6
	Practical Case	6	25.0
	Role Playing	6	25.0
	Team Building	4	16.6
	Other Activities	4	16.6
Role	Students	16	66.0
	Lecturers	7	30.0
	Partners	1	4

4.2. Quantitative Analysis

In recent years, there has been an increase in entrepreneurial intention in university students, but it has not yet reached high levels [1]. However, entrepreneurial education programmes and other factors contribute to enhancing entrepreneurial intention and this question has been widely researched [11,85–87]. The aim of the study is to establish which tools are more efficient in improving entrepreneurial competences, understanding these as a key factor not only for business creation but also for employability. In this section, attention is paid to entrepreneurial competences and entrepreneurial intention as an indicator of being better prepared to face the labour market and professional development. Even so, it should be pointed out that quantitative analysis is not the core of this study. Firstly, some basic statistics are provided, and a regression analysis is found below.

Entrepreneurial intention before and after participating in training activities reveals a significant difference at the level of 0.3% (Table 4). Despite a general improvement in entrepreneurial intention, student's intention to start a business is moderate. However, it is worth noting that the item referring to the desire to start a business one day reached almost the maximum of 6 after participating in training activities. In this way, the item with fewer differences before and after participating is <I am ready to become an entrepreneur>. In both measurements, the score does not reach 4. That could mean that setting up one's own business is attractive but is long-term. This statement is reinforcing on the basis on the discussion held in focus groups, as well as in previous studies, highlighting Iqbal et al. [51], Fayolle et al. [11], and Nabi et al. [22]. Although it seems to have little relevance in quantitative terms, the qualitative results provide an interesting explanation of these values.

The research work focused on the positive effect between an entrepreneurial education program and entrepreneurial intentions are often found in the reviews of the literature [81]. In contrast, it is not usual to find evidence about how entrepreneurial competences should be learnt [12,88]. This is the reason that the focus is on the acquisition of entrepreneurial competences through educational programs. In Table 4, how this experiential learning contributes to gain these kinds of skills is shown. All the values are notably increased after the participation in the training activities.

Table 4. Average entrepreneurial intention and entrepreneurial competences before and after participating in training activities.

	Before Training Activities	After Training Activities
Entrepreneurial Intention	4.4	4.7
Creativity	4.9	5.4
Risks Taking	3.7	5.2
Proactivity	4.9	5.1
Entrepreneurship Image	3.1	5.2
Entrepreneurial Competences (Sum of the Averages)	4.2	5.2

Although good progress has already been made in this field, there is no unanimous answer to the discussion about which pedagogical methods and learning tools are more efficient in higher education from the point of view of entrepreneurship [11,87]. An additional effort should, therefore, be made in this research line [40]. This study shows a significant correlation between entrepreneurial intention and training activities at the level of 0.05. However, the main point is to find out which tools can better improve entrepreneurial competences. Table 5 shows the impact of each one on entrepreneurial intention. All levels are quite similar but including the qualitative vision in the later analysis again allows the contrast of impressions and feelings regarding traditional learning methods and practical approaches to be appreciated.

Table 5. Entrepreneurial intention classified by type of training activity.

Training Activity	Entrepreneurial Intention (EI)
Hackathon	4.8
Team Building	4.9
Practical Case	5
Role Playing	4.2

To provide a holistic vision, a regression analysis was performed. The analysis of data aimed to confirm the working hypothesis that asserts the existence of relationships between each entrepreneurial competence considered in this study (risk aversion, creativity, and proactivity) and the dependent variables tested (entrepreneurial intention and employment) applying the multivariate regression technique for each model of relationships. This research work focuses on three parameters to validate the aforementioned hypotheses: the fit of the model, the ANOVA table, and the Durbin-Watson test.

Previously, the correlation matrix for entrepreneurial intention and employability is positive, although changes were detected in the weight of the predictors in each model. Consequently, hypothesis 1.1 and 1.2 are tested.

Hypothesis 2 and 3, relate the three entrepreneurial competences with entrepreneurial intention and employability, shows the dependence separately. Consequently, both are positively confirmed. The coefficient of multiple correlations and its square indicate that the proportion of the variance of dependent variables explains 78% of the model in the case of entrepreneurial intention and 77% in the case of the improvement of employability (Table 6). The explained variance is reduced if we take the value of the adjusted R Square to 53% and 52% respectively. The sample size allows us to consider as statistically significant lower levels of R2 in samples ranging from up to 350 with a number of independent variables of 10 [76]. Consequently, for our case study, the explanatory capacity of the model is accepted.

Table 6. Model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
EI	0.784a	0.534	0.512	1.498	2.110
Employability	0.778a	0.529	0.507	1.401	2.002

a. Predictors: (Constant), Psp, Cnw, ARsi, ARr, ARer, Ci, Pow, Pi, Co. b. Dependent variable: Model 1. Entrepeneurial Intention/Model 2. Employability.

The regression model has been applied by following two methods: the default method, in which all variables are entered into the equation, and the backward elimination method, in which the variables are entered into the equation and then the variables that contribute less to the model are eliminated sequentially to correct the lower partial correlations and thus offer a more appropriate value of adjusted R2. The ANOVA table (Table 7) confirms that the result of the analysis of variance of the model is significant because the value is 0.00. This coefficient allows discarding the null hypothesis and demonstrates a linear relationship between the dependent variables and the independent variables that is not due to a chance.

Table 7. ANOVA.

Model		Sum of Squares	Df	Mean Square	F	Sig.
EI	Regression	218.573	9	24.286	10.828	0.000b
	Residual	715.511	319	2.243		
	Total	934.084	328			
Employability	Regression	218.573	9	24.286	10.828	0.000b
	Residual	715.511	319	2.243		
	Total	934.084	328			

The last step was the Durbin Watson test. It confirms that the residues are serially correlated. The suggested values to state the residues are independent should be in the range of 1.5 and 2.5 and these values are fulfilled for both models of regression (Table 6).

For the purposes of this particular study, the most important finding is the empirical demonstration that the training of entrepreneurial competences has an overall positive impact on entrepreneurial intention and on employability. Basis on linear regression we can measure significant differences in each of the two dimensions between university students after their participation in the training activities. Creativity, risk aversion, and proactivity impact positively on entrepreneurial intention and employability as well. Consequently, the three proposed hypotheses are tested.

4.3. Qualitative Analysis

Three focus groups were conducted in order to have a complete view of the topic. Sixteen students and eight lecturers were recruited to participate in focus groups. As explained in detail above, five persons who had not participated in the training competences activities are included in the groups. Moreover, one entrepreneur specializing in design dynamics was included in the focus group with university lecturers and an effort was made to ensure that each group had participants from the Business and Management area and also Non-Business and Management, along with including students in their final and first years and lecturers linked to the business creation subject and who are not linked. Finally, the gender distribution is similar in each group. Table 8 shows the profiles and composition of focus groups.

Table 8. Participants in focus groups.

Focus Group 1—Students A
1. Participant student in business & management degree Hackathon (F)
2. Participant student in business & management degree Teambuilding(M)
3. Participant student in Practical Case study with business & management degree entrepreneur partner (F)
4. Participant student in business & management degree ring (M)
5. Participant student in non-business & management degree Hackathon (F)
6. Participant student in non-business & management degree Role playing (M)
7. Non-participant student in first year of business & management degree (F)
8. Non-participant student in final year of non-business & management degree (F)
Focus Group 2—Students B
1. Participant student in non-business & management degree Hackathon (M)
2. Participant student in non-business & management degree Team Building (F)
3. Participant student in Practical Case with entrepreneur partner of non-business & management degree (M)
4. Participant student in business & management degree Role Playing (F)
5 Participant student in business & management degree Team Building (M)
6 Participant student in Practical Case with entrepreneur partner of business & management degree (F)
7. Non-participant student degree in first year of non-business & management degree (M)
8. Non-participant student in final year of business & management degree (M)
Focus Group 3—Lecturers
1. Lecturer involved in Hackathon and in Role Playing activity (F)
2. Lecturer involved in Team Building and in Practical Case with entrepreneur partner (F)
3. Lecturer responsible for business creation subject but non-participant in the pilot training activities (M)
4. Entrepreneur partner in Practical Case training activity (M)
5. Lecturer involved in Hackathon and Practical Case (M)
6. Lecturer involved in Teambuilding and Role Playing activities (F)
7. Lecturer responsible for business creation subject and participant in all training activities. (F)
8. Non-participant lecturer in the pilot training activities, with no relationship with business creation programmes but with some involvement in work experience programmes (M)

The content analysis of the transcript resulted in 4 themes: entrepreneurship, employability, teaching methods, and competences (based on main objectives and core topics for the research), which were used to set the categories and the codes, based on the prompted topics within the groups and supported in the literature review. Deductive and inductive methods for creating codes have thus been combined [89]. Table 9 shows the different conceptual levels.

Table 9. Key themes, categories and codes.

Themes	Categories	Codes
Entrepreneurship	Entrepreneurial Education Entrepreneurship as transversal Competence Entrepreneurs	Entrepreneurs image Global vision of entrepreneurship
Employability	Labour market demand Business creation Paid-employment	Competences & Employability
Teaching methods	Traditional methods Innovative methods Challenges in Higher Education	Traditional teaching Practical and innovative teaching methods Positive aspects of OI university image
Competences	Training competences Value of the competences Effects of competences	Knowledge & Competences Challenges in training competences Receptivity of training competences

The key themes were discussed extensively and the categories and particularly the codes therefore summarize the content from the discussions held in the groups. This result derives from a clean-up exercise to correct and delete duplication or reduce similar concepts to a single code.

Figure 1 shows the occurrence frequency of each code in the three focus groups and, consequently, the relevance of each topic.

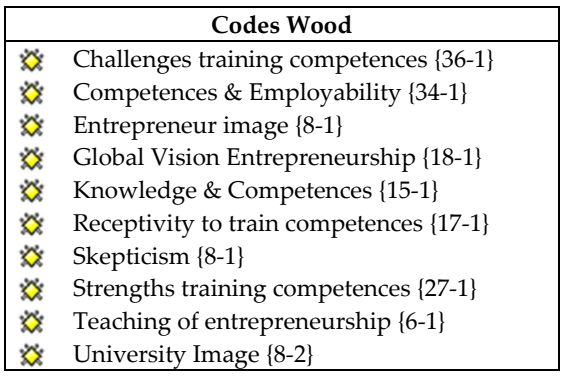

Figure 1. Codes Wood. Source: In-house elaboration with support of Atlas.ti.

Finally, a network figure was used to show the relationship between concepts, to connect them, simplify the discussed ideas and to supply an overall view (Figure 2). This phase is called relational and is based on frequencies, relationships found in categories and codes.

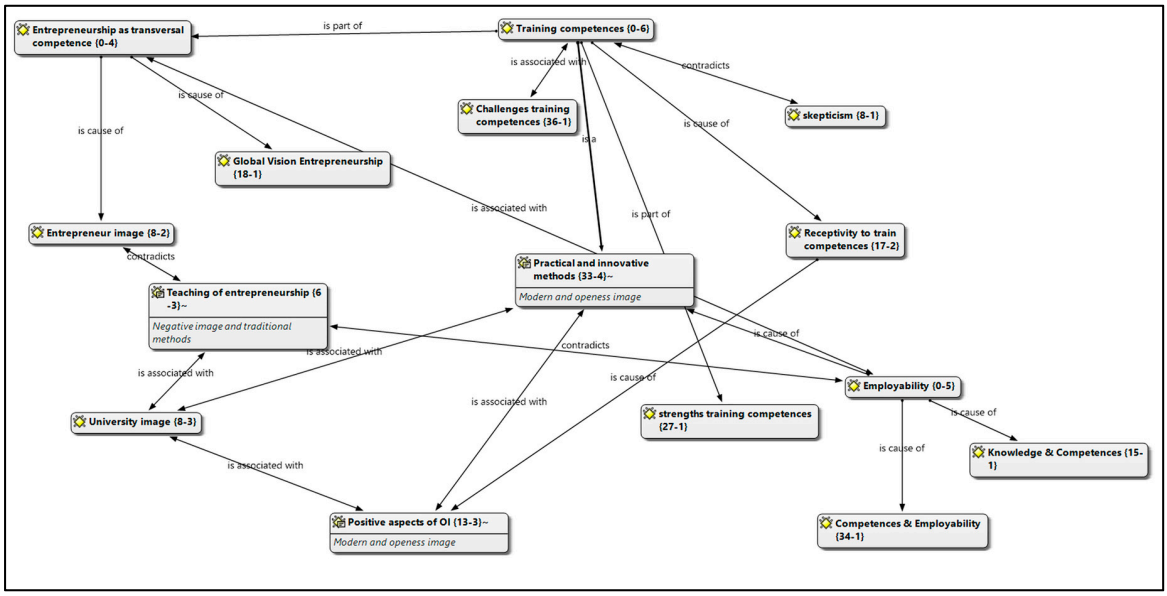

Figure 2. Codes network entrepreneurial competences Training. Source: In-house elaboration with support of Atlas.ti.

Looking at the details of tools and their measurements more effectively (Table 10), it should be stated clearly that the practical case with an entrepreneur gets the best overall results (5.5), followed by the hackathon (5.3), the team building (5), and role playing (5,5) is placed lowest in the ranking (4.8). These values agree with the comments and remarks made by students in the focus groups. Nevertheless, there is a contribution of some training activities to additional extra competences. For example, the hackathon is the training activity that allows the participants to better developed creativity and risk tasking is trained more with the practical case with an entrepreneur. Meanwhile, the role playing is shown as the best tool for improving empathy and negotiation skills and team building is positively valued for acquiring communication skills.

Table 10. Entrepreneurial intention and competences classified by type of training activity.

		Entrepreneurial Competences					
	EI	**Creativity**	**Risks Tasking**	**Proactivity**	**Entrepreneur Image**	**∑ Entrepreneurial Competences**	**Additional Outstanding Competence Mentioned in Focus Groups**
Hackathon	4.8	6	5.3	4.4	5.8	5.3	Teamwork, communication skills
Teambuilding	4.9	5.7	5.2	5	4	5	Teamwork, negotiation skills
Practical Case with an entrepreneur	5	5	5.6	5.2	6.3	5.5	Problem-solving skills, self-management
Role Playing	4.2	4.9	4.7	5.3	4.5	4.8	Communication skills, employability

5. Conclusions and Discussion

The most interesting conclusion has arisen out of the qualitative analysis. However, the multivariate analysis provides an in positively sight into the positive effect of training entrepreneurial competences on entrepreneurial intention and employability. It will be the focus that should be at the forefront of future research. Centring on quantitative analysis, this research work demonstrates the relationship between acquisition of entrepreneurial competences and entrepreneurial intention. However, the main contribution is shown as the training these kinds of skills can contribute to the employability. Although in this study employability is a students' personal perception and a definitive confirmation supported with companies should be developed in the future. The model of relations of dependency proposed in hypothesis 3 is tested. In previous research works, as Liñán and Fayolle [81] the testing of the positive effects between competences and entrepreneurial intention is widely examined but the introduction of employability is less common [64,90]. Moreover, seeking the capacity of different training activities to influence both factors is the main contribution of this research work.

The three focus groups explain briefly the potential between training competences and employability in line with Rae [16], Sánchez [10] and O'Leary [13]. Moreover, there is a consensus regarding innovative and practical methods having positive effects on learning, on motivation and on the predisposition of students [4,11,87]. The results allow us to obtain a positive response to the first research question raised. The general perception among major education stakeholders is that competences are useful for facing the labour market better and, specifically, entrepreneurial competences are more greatly appreciated by companies. So, they are not only a key for self-employment. Curiously, both lecturers and students stressed they would like to participate in these kinds of practices but emphasized how hard it was to achieve, usually due to a lack of tools, or as the result of the relative rigidity of education programmes in higher education. This statement reinforces the positive relationship between participating in entrepreneurial education programmes and increasing entrepreneurial intention [45]. Furthermore, this study provides keys to show which and how learning methods and practices are more effective. In this way, Neergaard et al. [19] also coincide with the reflection that higher education often focuses on knowledge acquisition, rather than the deeply experiential approaches and searching for the collaboration of students. Lecturers also assume the need to be trained, advised, equipped, and supported for this challenge, and curricula need to be modernized [63]. It should also be noted that the participants agree that the right balance between knowledge and competences should be established in order to achieve quality higher education and to ensure a better match between academic requests and labour market demands. This is in line with Wells [91] and Cai [66]. Regarding previous literature, this study delves deeper into a didactical level of training activities for training entrepreneurial competences. It should be emphasized that this study completes and is somewhat similar to the results of Morris et al. [62] Following the directions of Fayolle [21] audience, knowledge and content, objectives, methods, and assessment are described and evaluated to provide a wide and comparative vision of each learning tool. In addition to contributing to the field of entrepreneurial

education based on competences, the details of how it is done in practice are also given. Consequently, this initiative may show enough to allow other universities and researchers to carry out these activities and continue in this line.

There is a unanimous consensus about how competences help them as lecturers and as students to improve to face not only their professional challenges but also their daily lives as well. In this regard, the highlighted gap [45,46] receives more attention and more evidence is provided. Certain participants raised some doubts, but they specifically highlight the direct impact on their skills when there are only specific training competences activities. In general, all participants were receptive to these experiences and they felt that training competences had a positive effect on them.

Focusing on entrepreneurship, the change of perspective regarding how being an entrepreneur should be emphasized. It seems that, generally speaking, students link entrepreneurship to business creation, and they had not previously thought about it as an attitude to life. In this line of thought, the research work by Lans et al. [12] reinforces the statement that entrepreneurial competences have a positive implication beyond having a business. Additionally, training activities have generated improvements in the traditional entrepreneurial view. It is particularly noticeable in those who have participated in solving a practical case with an entrepreneur. The downside to current business creation teaching methods is that it seems boring or scarcely credible. Elaborating a business plan is not seen by most students as a motivating activity to awaken their entrepreneurial spirit, rather the contrary. In any event, this question is consistent with the opinions expressed in favour of the innovative and practical learning methods coinciding with the considerations of Dacre Pool and Seewell [64]. University image is closely linked to the previous topics. Participants affirm that innovative teaching methods and taking the most valuable labour market competences into account could bring considerable improvements in this regard. Even today, university is considered an educational institution with a rigid structure, quite permeable to the environment and the student requests. However, the efforts towards openness and experiences to introduce innovative learning methods are a chance to modernise and positively change its image, according to the opinions given. Additionally, the entrepreneurial view should be highlighted as entrepreneurs reinforce the idea regarding the change of focus needed in the relationship between university and business sector. They appreciate that the university is seeking to improve graduate employability, adapting their competences to labour market requirements. In a certain way, adapting curricula to achieve a positive effect on the competences for entrepreneurship agrees with Arranz et al. [63].

To sum up, the most influential training activities on students' skills have the following factors in common: (1) they are based upon real problems or situations and their solutions imply relying on their capabilities and their ability to find real solutions instead of applying answers based on theoretical knowledge. (2) Teamwork enriches the learning experience and encourages and develops the participants' competences. (3) The participation of an entrepreneur in the training activities is very appreciated and adds an incentive. Overall, all these items have already been noted by Fayolle [21] who after a thorough revision of literature highlights the importance of active, experiential, learning by doing real-world pedagogies. This principle ensures that training of competences is successful. In this way, this study answers the second research question and deepens the nature of the interventions: methods, content, resources, organisation of the groups, time and space.

Last but not least, OI was appreciated, even the lecturers considered it a chance to engage the students and improve the level of participation in their lessons. This statement responds positively to the third research question raised. Moreover, it has a beneficial impact on the modernization of university image and receptiveness of higher education. In Sharples et al. [27], considerations in this line are made.

The role of competences in the so-called European Higher Education Area (EHEA) derived from Bologna Process' decade anniversary seems not to be under discussion, even though several challenges remain unresolved regarding how and which pedagogical instruments develop employability efficiently [16,91]. This study is innovative as its aim is to test which training tools have a greater

influence on entrepreneurial competences. Moreover, how this set of skills is perceived as valuable for the labour market. The feeling of students and lecturers and personal impressions regarding which educational and didactical methods work are necessary. This approach is not usual [22] and its introduction is the most highlighted contribution.

The findings may suggest that student involvement in discussion and evaluation of tools to train entrepreneurial competences may enhance motivation and learning outcomes. This requirement is made in previous literature as well [4,6,10,64]. As for lecturers, they point out that OI helps them to achieve a positive attitude towards learning in lessons and they acknowledge they are more motivated thanks to the better performance seen in student competences. Consequently, the main finding is that students' involvement in the decision-making process regarding tools to train entrepreneurial competences through the OI approach has a positive and direct effect on student motivation and their learning and professional outcomes. In this way, this research work agrees with Fayolle [21] (p. 700), who highlights that entrepreneurial learning and entrepreneurial outcomes should adequately meet the social and economic needs of all the stakeholders involved and to achieve it, the creation of a community sharing the same values and objectives is key.

The university can take advantage of providing a platform where entrepreneurs can connect with lecturers and students in order to test which knowledge and competences are more in demand by companies. This could support the design and implementation of innovative methods. The co-creation channels reinforce the social commitment in higher education, and it would be to the benefit of all parties (university, students and productive sector). Working with this philosophy, the essential elements of a practical model which optimizes the value of the collaborative innovation between the educational institutions (or agents) and the interest groups can be established in the same way as Cai [66]. To sum up, OI practices in the educational environment allow an accurate adjustment of objectives and results due to the active role of stakeholders in their strategy.

Therefore, some considerations highlighting the contribution are made. Given the length of time, entrepreneurial learning cannot be considered a new or even emerging field of study, but rather one that has been established and has been organized in different research areas and topics [64]. The TPB model [47] is widely used for measuring entrepreneurial intention but competences and the influence of different training activities are added in this study [10]. Consequently, this research work reveals how entrepreneurial intention and self-perception about competence profile can change depending on the methodological, pedagogical approaches used in the learning process. Moreover, the collaborative model, specifically, OI practices clearly show better performance and engagement in the educational environment. This research paper contributes to providing evidence that the learning perspective and widening the interpretative framework of entrepreneurial learning to foster entrepreneurial development in a transversal competence are not only linked to business setup, but also employability is positively improved.

5.1. Limitations and Future Research

Despite new insights provided, the research work is not free of limitations. This study is exploratory, although it provides clues about the design of education program focus on entrepreneurial competences, a deeper analysis is needed. The results reveal a positive effect on employability from the point of view of students, lecturers and entrepreneurs but a longitudinal study, the inclusion of more universities will provide vital support for the validity of this research work. The study has chosen only one university, although the case shows that training entrepreneurial competences achieves to improvement in their professional profile, it is necessary a further examination to provide a complete vision of the phenomenon. Likewise, additional data about the effects on the entrepreneurial intention from training activities should be carried out in order to confirm the reliability and validity of this first approach. Additionally, employability should be studied in the future not only supported in the students' personal evaluation and this vision should be completed with the perception of companies that recruit graduates.

Despite the deepening development of entrepreneurship, there are still certain under-researched areas particularly relating entrepreneurial competences to employability. Future research may place more emphasis on empirical evidence that will show how the different training activities improve and reinforce key competences in a successful professional development with one's own business or working for whichever company. Moreover, it could also be interesting to explore how the university community (students and lecturers) reach a wider understanding of entrepreneurship, thus overcoming stereotypes about entrepreneurship and about traditional learning methods based on intensive knowledge and less on practical and valuable competences in the labour market. This requires more qualitative, phenomenon-driven research, which is especially effective in addressing how higher education can ensure better current requirements for their graduates and companies as well.

Additionally, it would be of interest to carry out a comparative analysis at an international level to establish how, beyond cultural factors, the approach of each university in this field can raise the levels of entrepreneurship in the university community and determine the differences in student entrepreneurial intention and in the improvement of each entrepreneurial competence according to the type of activity. For this purpose, additional multivariate analysis can provide a good basis for progress in this area and making sense of this first exploratory study. Further research based on mixed-methods can hopefully allow for generalizing this result.

5.2. Practical Implications

The results encourage universities to implement initiatives aimed to give entrepreneurial skills to graduates to make easier for them to get into the job market. Some of the issues mentioned above could be a support to design educational programme in accordance with labour market requirements. OI practices allow universities valuable training before making it a standard and compulsory practice in educational environments. The assumption behind this framework means that a global vision of entrepreneurship should be considered to design effective learning processes that allow university students to gain the knowledge and skills to be successful if they create an enterprise or enter the labour market. Additionally, the university develops and strengthens their social commitment as well as increasing their stakeholder's engagement in strategic renewal processes. A participatory and open model involving lecturers, students, and entrepreneurs is needed to achieve the expected results. Thus, the university is firmly committed to increasing the availability of training resources and tools over the coming years for these kinds of proposals with guarantees and the support necessary for the academic staff.

Author Contributions: All authors contributed equally to this paper.

Funding: This research has received funds from a Programme of Educational Innovation of University of Malaga (PIE 17-088, PIE 17-117).

Acknowledgments: We thank University of Malaga because of this research was partially supported with funds for a Programme of Educational Innovation. These annual calls enable us to move forward in a positive way in the field of the entrepreneurship, employability and internationalisation in Higher Education. We would also like to show our gratitude to the students, lecturers and entrepreneurs. They have made this study possible.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Global Entrepreneurship Monitor. Global Entrepreneurship Monitor. 2018. Available online: https://www.gemconsortium.org/ (accessed on 3 May 2019).
2. Global Entrepreneurship Monitor. In *Informe GEM España 2017–2018*; Universidad de Cantabria: Santander, España, 2018.
3. Global Entrepreneurship Monitor. In *Informe Ejecutivo Andalucía 2016*; Universidad de Cádiz: Cádiz, España, 2018. Available online: http://www.gem-spain.com/wp-content/uploads/2015/03/Informe-GEM-Andalucia-2016.pdf (accessed on 10 March 2019).
4. Lazear, E.P. Balanced skills and entrepreneurship. *Am. Econ. Rev.* **2004**, *94*, 208–211. [CrossRef]

5. Moreland, N. *Entrepreneurship and Higher Education: An Employability Perspective*; The Higher Education Academy: York, UK, 2006.
6. Machin, S.; McNally, S. *Tertiary Education Systems and Labour Markets*; Education and Training Policy Division, OECD: Tallin, Estonia, 2007. Available online: http://www.oecd.org/education/innovation-education/38006954.pdf (accessed on 17 March 2019).
7. Eurostat. El Mercado de Trabajo. 2018. Available online: https://ec.europa.eu/info/sites/info/files/file_import/european-semester_thematic-factsheet_active-labour-market-policies_es.pdf (accessed on 6 June 2019).
8. Dickson, P.H.; Solomon, G.T.; Weaver, K.M. Entrepreneurial selection and success: Does education matter? *J. Small Bus. Enterp. Dev.* **2008**, *15*, 239–258. [CrossRef]
9. Fayolle, A.; Gailly, B.; Lassas-Clerc, N. Assessing the impact of entrepreneurship education programmes: A new methodology. *J. Eur. Ind. Train.* **2006**, *30*, 701–720. [CrossRef]
10. Sánchez, J.C. The impact of an entrepreneurship education program on entrepreneurial competencies and intention. *J. Small Bus. Manag.* **2013**, *51*, 447–465. [CrossRef]
11. Fayolle, A.; Gailly, B. The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. *J. Small Bus. Manag.* **2015**, *53*, 75–93. [CrossRef]
12. Lans, T.; Hulsink, W.I.M.; Baert, H.; Mulder, M. Entrepreneurship education and training in a small business context: Insights from the competence-based approach. *J. Enterp. Cult.* **2008**, *16*, 363–383. [CrossRef]
13. O'Leary, S. Impact of entrepreneurship teaching in higher education on the employability of scientists and engineers. *Ind. High. Educ.* **2012**, *26*, 431–442. [CrossRef]
14. Liñán, F. Skill and value perceptions: How do they affect entrepreneurial intentions? *Int. Entrep. Manag. J.* **2008**, *4*, 257–272. [CrossRef]
15. Lieberman, A. Practices that support teacher development: Transforming conceptions of professional learning. In *Innovating and Evaluating Science Education*; Stevens, F., Ed.; National Science Foundation: Arlington, VA, USA, 1995; pp. 67–78.
16. Rae, D. Connecting enterprise and graduate employability. Challenges to the higher education culture and curriculum? *Educ. Train.* **2007**, *49*, 605–619. [CrossRef]
17. UNESCO. *Education for Twenty-first Century*; UNESCO: Bangkok, Thailand, 2015.
18. Pujol-Jover, M.; Riera-Prunera, C.; Abio, G. Competences acquisition of university students: Do they match job market's needs? *Intang. Cap.* **2015**, *11*, 612–626. [CrossRef]
19. Neergaard, H.; Tanggaard, L.; Krueger, N.; Robinson, S. Pedagogical interventions in entrepreneurship from behaviorism to existential learning. In Proceedings of the 2012 Institute for Small Business and Entrepreneurship, Dublin, Ireland, 6–8 November 2012.
20. Sewell, P.; Dacre Pool, L. Moving from conceptual ambiguity to operational clarity: Employability, enterprise and entrepreneurship in higher education. *Educ. Train.* **2010**, *52*, 89–94. [CrossRef]
21. Fayolle, A. Personal views on the future of entrepreneurship education. *Entrep. Reg. Dev.* **2013**, *25*, 692–701. [CrossRef]
22. Nabi, G.; Liñán, F.; Fayolle, A.; Krueger, N.; Walmsley, A. The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Acad. Manag. Learn. Educ.* **2017**, *16*, 277–299. [CrossRef]
23. Bechard, J.P.; Gregoire, D. Understanding teaching' models in entrepreneurship for higher education. In *The Dynamics of Learning Entrepreneurship in a Cross-cultural University Context*; Kyro, P., Carrier, C., Eds.; Faculty of Education, University of Tampere: Tampere, Finland, 2005; pp. 104–134.
24. Kolvereid, L. Prediction of employment status choice intentions. *Entrep. Theory Pract.* **1996**, *21*, 47–57. [CrossRef]
25. Chaston, I.; Scott, G.J. Entrepreneurship and open innovation in an emerging economy. *Manag. Decis.* **2012**, *50*, 1161–1177. [CrossRef]
26. Iglesias-Sánchez, P.; de las Heras-Pedrosa, C.; Jambrino-Maldonado, C. Innovación abierta en entornos educativos. *Opción* **2015**, *31*, 602–616. [CrossRef]
27. Sharples, M.; de Roock, R.; Ferguson, R.; Gaved, M.; Herodotou, C.; Koh, E.; Kukulska-Hulme, A.; Looi, C.-K.; McAndrew, P.; Rienties, B.; et al. *Innovating Pedagogy 2016: Open University Innovation Report 5*; The Open University: Milton Keynes, UK, 2016.
28. Mitchelmore, S.; Rowley, J. Entrepreneurial competencies: A literature review and development agenda. *Int. J. Entrep. Behav. Res.* **2010**, *16*, 92–111. [CrossRef]

29. RezaeiZadeh, M.; Hogan, M.; O'Reilly, J.; Cunningham, J.; Murphy, E. Core entrepreneurial competencies and their interdependencies: Insights from a study of Irish and Iranian entrepreneurs, university students and academics. *Int. Entrep. Manag. J.* **2017**, *13*, 35–73. [CrossRef]
30. Kraus, S.; Filser, M.; O'Dwyer, M.; Shaw, E. Social Entrepreneurship: An exploratory citation analysis. *Rev. Manag. Sci.* **2014**, *8*, 275–292. [CrossRef]
31. Acs, Z.; Armington, C. Employment growth and entrepreneurial activity in cities. *Reg. Stud.* **2004**, *38*, 911–927. [CrossRef]
32. Stephens, H.M.; Partridge, M.D.; Faggian, A. Innovation, entrepreneurship and economic growth in lagging regions. *J. Reg. Sci.* **2013**, *53*, 778–812. [CrossRef]
33. Van Praag, C.M.; Versloot, P.H. What is the value of entrepreneurship? A review of recent research. *Small Bus. Econ.* **2007**, *29*, 351–382. [CrossRef]
34. Goddard, J.; Vallance, P. *The University and the City*; Routledge: London, UK, 2013.
35. Fuster, E. Transferencia de Tecnología y Conocimiento Universidad-Empresa. Análisis de las Spin-offs Académicas Desde Una Perspectiva Internacional. Doctoral Thesis, Universidad de Málaga, Málaga, Spain, 2017.
36. Urban, B. Influence of the Institutional Environment on Entrepreneurial Intentions in an Emerging Economy. *Int. J. Entrep. Innov.* **2013**, *14*, 179–191. [CrossRef]
37. Wennekers, S.; Van Stel, A.; Thurik, R.; Reynolds, P. Nascent entrepreneurship and the level of economic development. *Small Bus. Econ.* **2005**, *24*, 293–309. [CrossRef]
38. Etzkowitz, H. *The Triple Helix: University-industry-government Innovation in Action*; Routledge: London, UK, 2008.
39. Souitaris, V.; Zerbinati, S.; Al-Laham, A. Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *J. Bus. Ventur.* **2007**, *22*, 566–591. [CrossRef]
40. Iglesias-Sánchez, P.P.; Jambrino-Maldonado, C.; Velasco, A.P.; Kokash, H. Impact of entrepreneurship programmes on university students. *Educ. Train.* **2016**, *58*, 209–228. [CrossRef]
41. Maresch, D.; Harms, R.; Kailer, N.; Wimmer-Wurm, B. The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs. *Technol. Forecast. Soc.* **2016**, *104*, 172–179. [CrossRef]
42. Solesvik, M.Z. Entrepreneurial motivations and intentions: Investigating the role of education major. *Educ. Train.* **2013**, *55*, 253–271. [CrossRef]
43. Oosterbeek, H.; Van Praag, M.; Ijsselstein, A. The impact of entrepreneurship education on entrepreneurship skills and motivation. *Eur. Econ. Rev.* **2010**, *54*, 442–454. [CrossRef]
44. Von Graevenitz, G.; Harhoff, D.; Weber, R. The effects of entrepreneurship education. *J. Econ. Behav. Organ.* **2010**, *76*, 90–112. [CrossRef]
45. Lorz, M.; Mueller, S.; Volery, T. Entrepreneurship education: A systematic review of the methods in impact studies. *J. Enterp. Cult.* **2013**, *21*, 123–151. [CrossRef]
46. Pittaway, L.; Cope, J. Entrepreneurship education: A systematic review of the evidence. *Int. Small Bus. J.* **2007**, *25*, 479–510. [CrossRef]
47. Ajzen, I. The theory of planned behavior. *Organ. Behav. Hum. Decis.* **1991**, *50*, 179–211. [CrossRef]
48. Bakotić, D.; Kružić, D. Students' perceptions and intentions towards entrepreneurship: The empirical findings from Croatia. *Bus. Rev. Camb.* **2010**, *14*, 209–215.
49. Gasse, Y.; Tremblay, M. Entrepreneurship education among students at a Canadian university: An extensive empirical study of students' entrepreneurial preferences and intentions. In *International Entrepreneurship Education*; Fayolle, A., Klandt, H., Eds.; Edward Elgar Publising: Cheltenham, UK, 2006; pp. 241–263. [CrossRef]
50. Gasse, Y.; Tremblay, M. Entrepreneurial beliefs and intentions: A cross-cultural study of university students in seven countries. *Int. J. Bus.* **2011**, *16*, 303. [CrossRef]
51. Iqbal, A.; Melhem, Y.; Kokash, H. Readiness of the University students towards entrepreneurship in Saudi Private University: An exploratory study. *Eur. Sci. J.* **2013**, *8*, 109–131.
52. Armitage, C.J.; Conner, M. Efficacy of the theory of planned behaviour: A meta-analytic review. *Br. J. Soc. Psychol.* **2001**, *40*, 471–499. [CrossRef] [PubMed]

53. Krueger, N.F.; Carsrud, A.L. Entrepreneurial intentions: Applying the theory of planned behaviour. *Entrep. Reg. Dev.* **1993**, *5*, 315–330. [CrossRef]
54. Krueger, N.; Reilly, M.D.; Carsrud, A.L. Competing Models of entrepreneurial intentions. *J. Bus. Ventur.* **2000**, *15*, 411–432. [CrossRef]
55. Aloulou, W.J. Predicting entrepreneurial intentions of final year Saudi university business students by applying the theory of planned behavior. *J. Small Bus. Enterp. Dev.* **2016**, *23*, 1142–1164. [CrossRef]
56. Díaz-Casero, J.C.; Ferreira, J.J.M.; Mogollón, R.H.; Raposo, M.L.B. Influence of institutional environment on entrepreneurial intention: A comparative study of two countries university students. *Int. Entrep. Manag. J.* **2012**, *8*, 55–74. [CrossRef]
57. Shapero, A.; Sokol, L. The social dimensions of entrepreneurship. In *Encyclopedia of Entrepreneurship*; Kent, C.A., Ed.; Prentice-Hall: Englewood Cliffs, NJ, USA, 1982; pp. 72–90.
58. Crant, J.M. The proactive personality scale as a predictor of entrepreneurial intentions. *J. Small Bus. Manag.* **1996**, *34*, 42–49.
59. Sarri, K.K.; Bakouros, I.L.; Petridou, E. Entrepreneur training for creativity and innovation. *J. Eur. Ind. Train.* **2010**, *34*, 270–288. [CrossRef]
60. Uy, M.A.; Chan, K.Y.; Sam, Y.L.; Ho, M.H.R.; Chernyshenko, O.S. Proactivity, adaptability and boundaryless career attitudes: The mediating role of entrepreneurial alertnes. *J. Vocat. Behav.* **2015**, *86*, 115–123. [CrossRef]
61. Veciana, J.M.; Urbano, D. The institutional approach to entrepreneurship research. Introduction. *Int. Entrep. Manag. J.* **2008**, *4*, 365–379. [CrossRef]
62. Morris, M.H.; Webb, J.W.; Fu, J.; Singhai, S. A competency-based perspective on entrepreneurship education: Conceptual and empirical insights. *J. Small Bus. Manag.* **2013**, *51*, 352–369. [CrossRef]
63. Arranz, N.; Ubierna, F.; Arroyabe, M.F.; Perez, C.; de Arroyabe, J.C.F. The effect of curricular and extracurricular activities on university students' entrepreneurial intention and competences. *Stud. High. Educ.* **2017**, *42*, 1979–2008. [CrossRef]
64. Dacre Pool, L.; Sewell, P. The key to employability: Developing a practical model of graduate employability. *Educ. Train.* **2007**, *49*, 277–289. [CrossRef]
65. Chesbrough, H. *Open Innovation-The New Imperative for Creating and Profiting from Technology (:10)*; Harvard Business School Press: Boston, Massachusetts, 2003.
66. Cai, Y. From an Analytical Framework for Understanding the Innovation Process in Higher Education to an Emerging Research Field of Innovations in Higher Education. *Rev. High. Educ.* **2017**, *40*, 585–616. [CrossRef]
67. Hossain, M.; Anees-ur-Rehman, M. Open innovation: An analysis of twelve years of research. *Strateg. Outsourc. Int. J.* **2016**, *9*, 22–37. [CrossRef]
68. Karlsson, C.; Warda, P. Entrepreneurship and innovation networks. *Small Bus. Econ.* **2014**, *43*, 393–398. [CrossRef]
69. Salmador, M.P.; Bueno, E. Knowledge creation in strategy-making: Implications for theory and practice. *Eur. J. Innov. Manag.* **2007**, *10*, 367–390. [CrossRef]
70. Creswell, J.W. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*; Sage publications: London, UK, 2013.
71. Cai, Y. What drives the choices of mixed methods in higher education research? In *Theoretical and Methodological Perspectives on Higher Education Management and Transformation*; Pekkola, E., Kivistö, J., Kohtamäki, V., Cai, Y., Lyytinen, A., Eds.; Tampere University Press: Tampere, Finland, 2018; pp. 29–50.
72. Jick, T.D. Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Adm. Sci. Q.* **1979**, *24*, 602–611. [CrossRef]
73. Papadimitriou, A.; Ivankova, N.; Hurtado, S. Addressing Challenges of Conducting Quality Mixed Methods Studies in Higher Education, Theory and Method in Higher Education Research. *Int. Perspect. High. Educ. Res.* **2014**, *9*, 133–153. [CrossRef]
74. Creswell, J.W.; Plano Clark, V.L. *Designing and Conducting Mixed Methods Research*, 2nd ed.; Sage: Thousand Oaks, CA, USA, 2011.
75. Greene, J.C.; Caracelli, V.J.; Graham, W.F. Toward a conceptual framework for mixed method evaluation designs. *Educ. Eval. Policy Anal.* **1989**, *11*, 255–274. [CrossRef]
76. Hair, J.F.; Anderson, R.E.; Tatham, R.L.; Black, W.C. *Análisis Multivariante*; Prentice Hall: Madrid, España, 1999; p. 491.

77. Hines, T. An evaluation of two qualitative methods (focus group interviews and cognitive maps) for conducting research into entrepreneurial decision making. *Qual. Mark. Res.* **2000**, *3*, 7–16. [CrossRef]
78. Newman, I.; Ridenour, C.S.; Newman, C.; DeMarco, G.M.P. A typology of research purposes and its relationship to mixed methods. In *Handbook of Mixed Methods in Social and Behavioral Research*; Tashakkori, A., Teddlie, C., Eds.; Sage: Thousand Oaks, CA, USA, 2003; pp. 167–188.
79. Van Auken, H. Influence of a culture-based entrepreneurship program on student interest in business ownership. *Int. Entrep. Manag. J.* **2013**, *9*, 261–272. [CrossRef]
80. INE. Instituto Nacional de Estadística. Available online: http://www.ine.es/FichasWeb/RegComunidades.do?codMapa=8997 (accessed on 15 April 2019).
81. Liñán, F.; Fayolle, A. A systematic literature review on entrepreneurial intentions: Citation, thematic analyses, and research agenda. *Int. Entrep. Manag. J.* **2015**, *11*, 907–933. [CrossRef]
82. López-Delgado, P.; Iglesias-Sánchez, P.; Jambrino-Maldonado, C. Gender and university degree: A new analysis of entrepreneurial intention. *Educ. Train.* **2019**, *61*, 797–814. [CrossRef]
83. Corbin, J.M.; Strauss, A. Grounded theory research: Procedures, canons, and evaluative criteria. *Qual. Soc.* **1990**, *13*, 3–21. [CrossRef]
84. Gioia, D.A.; Corley, K.G.; Hamilton, A.L. Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organ. Res. Methods* **2013**, *16*, 15–31. [CrossRef]
85. Peterman, N.E.; Kennedy, J. Enterprise education: Influencing students' perceptions of entrepreneurship. *Entrep. Theory Pract.* **2003**, *28*, 129–144. [CrossRef]
86. Matlay, H. The impact of entrepreneurship education on entrepreneurial outcomes. *J. Small Bus. Enterp. Dev.* **2008**, *15*, 382–396. [CrossRef]
87. Nabi, G.; Walmsley, A.; Liñán, F.; Akhtar, I.; Neame, C. Does entrepreneurship education in the first year of higher education develop entrepreneurial intentions? The role of learning and inspiration. *Stud. High. Educ.* **2018**, *43*, 452–467. [CrossRef]
88. Man, T.W.; Lau, T.; Chan, K. The competitiveness of small and medium enterprises. *J. Bus. Ventur.* **2002**, *17*, 123–142. [CrossRef]
89. Miles, M.B.; Huberman, A.M. *An Expanded Sourcebook: Qualitative Data Analysis*, 2nd ed.; Sage Publications, Inc.: Thousand Oaks, CA. USA, 1994.
90. Secundo, G.; Del Vecchio, P.; Schiuma, G.; Passiante, G. Activating entrepreneurial learning processes for transforming university students' idea into entrepreneurial practices. *Int. J. Entrep. Behav. Res.* **2017**, *23*, 465–485. [CrossRef]
91. Wells, P.J. UNESCO'S Introduction: The role of Higher Education Institutions today. In *Higher Education in the World 6. Towards a Socially Responsible University: Balancing the Global with the Local*; Grau, F.X., Goddard, J., Hall, B.L., Hazelkorn, E., Tandon, R., Eds.; Global University Network for Innovation (GUNi): Girona, Spain, 2017.