

Empowering entrepreneurial education using undergraduate dissertations in business management and entrepreneurship: A five-year study (2012-2016)

To cite this document:

Rodriguez, A., Souto, J. E. (2019). Empowering entrepreneurial education using undergraduate dissertations in business management and entrepreneurship: A five-year study (2012-2016). *Education and Training* 61(2), 255-271.

DOI: <https://doi.org/10.1108/ET-07-2018-0160>

Title: Empowering entrepreneurial education using undergraduate dissertations in business management and entrepreneurship: A five-year study (2012-2016).

Article Type: Research Paper

Keywords: undergraduate dissertation, entrepreneurship education, business training, improvement plans, business plan, economic and financial dossier

Corresponding Author: Dr. Jaime E. Souto, Ph.D.

Email: jaim Leeds@ucm.es

Abstract

Purpose: The purpose of this paper is to contribute to the discussion about entrepreneurship education through Undergraduate Dissertations (UDs). In order to achieve this objective, this paper addresses the problems detected in the degree subject Undergraduate Dissertation (UD) –which entails the creation of a business plan– and the proposal of improvements in the teaching-learning process of this subject.

Design/methodology/approach: Qualitative and quantitative analysis are used. First, the paper reports the problems that occurred during two academic years (2012-2013 and 2013-2014), as well as the solutions to these problems, in the two academic years that followed (2014-2015 and 2015-2016). Second, the improvements achieved are analyzed using descriptive statistics and the Wilcoxon-Mann-Whitney test, based on data drawn from the records and a survey conducted in 2012-2013 (174 responses), and in 2015-2016 (184 responses).

Findings: The results outline the positive effects on students' learning outcomes and academic excellence, a three-stage assessment process, the strengthening of the coordination and supervision systems, and the enhancing of entrepreneurial spirit among graduates, with a UD connected to a business incubator.

Practical implications: The authors describe the design and implementation of a UD that provides a major step in the students' entrepreneurial education, emerging, not only, as an opportunity to train and connect skills and knowledge learned about the starting a new venture, but also as a practical experience of entrepreneurship; a first step that introduces the student to entrepreneurship.

Originality/value: There are very few examples of concrete subject designs that have undergone in-depth, longitudinal research, focusing on entrepreneurship. Prior research has focused on entrepreneurship primarily as a subject, forgetting the great utility of the UD as active training tool. Thus, this article breaks new ground by highlighting the role of the UD in entrepreneurial education. In this regard, the UD allows the student to be guided and to actually engage in the real-world practice of entrepreneurship. Specifically, it encourages them to apply their academic knowledge of the field in the context of creating a new business. Moreover, by creating a business plan, students are applying the knowledge and skills learned in the subject of entrepreneurship with other spheres of knowledge and skills.

1
2
3 **Empowering entrepreneurial education using undergraduate dissertations in business**
4 **management and entrepreneurship: a five-year study (2012-2016)**
5
6
7
8

9 **Purpose**– The purpose of this paper is to contribute to the discussion about
10 entrepreneurship education through Undergraduate Dissertations (UDs). In order to
11 achieve this objective, this paper addresses the problems detected in the degree subject
12 Undergraduate Dissertation (UD) –which entails the creation of a business plan– and the
13 proposal of improvements in the teaching-learning process of this subject.
14
15
16
17
18

19 **Design/methodology/approach**– Qualitative and quantitative analysis are used. First, the
20 paper reports the problems that occurred during two academic years (2012-2013 and 2013-
21 2014), as well as the solutions to these problems, in the two academic years that followed
22 (2014-2015 and 2015-2016). Second, the improvements achieved are analyzed using
23 descriptive statistics and the Wilcoxon-Mann-Whitney test, based on data drawn from the
24 records and a survey conducted in 2012-2013 (174 responses), and in 2015-2016 (184
25 responses).
26
27
28
29
30
31
32

33 **Findings**– The results outline the positive effects on students' learning outcomes and
34 academic excellence, a three-stage assessment process, the strengthening of the
35 coordination and supervision systems, and the enhancing of entrepreneurial spirit among
36 graduates, with a UD connected to a business incubator.
37
38
39
40
41

42 **Practical implications**– The authors describe the design and implementation of a UD that
43 provides a major step in the students' entrepreneurial education, emerging, not only, as an
44 opportunity to train and connect skills and knowledge learned about the starting a new
45 venture, but also as a practical experience of entrepreneurship; a first step that introduces
46 the student to entrepreneurship.
47
48
49
50
51

52 **Originality/value**– There are very few examples of concrete subject designs that have
53 undergone in-depth, longitudinal research, focusing on entrepreneurship. Prior research has
54 focused on entrepreneurship primarily as a subject, forgetting the great utility of the UD as
55
56
57
58
59
60

1
2
3 active training tool. Thus, this article breaks new ground by highlighting the role of the UD
4 in entrepreneurial education. In this regard, the UD allows the student to be guided and to
5 actually engage in the real-world practice of entrepreneurship. Specifically, it encourages
6 them to apply their academic knowledge of the field in the context of creating a new
7 business. Moreover, by creating a business plan, students are applying the knowledge and
8 skills learned in the subject of entrepreneurship with other spheres of knowledge and skills.
9
10
11
12
13
14

15 **Keywords:** undergraduate dissertation, entrepreneurship education, business training,
16 improvement plans, business plan, economic and financial dossier.
17
18
19
20

21 **Introduction**

22
23
24

25 Entrepreneurial education in higher education has made notable progress over time
26 (Fayolle et al., 2018; Hayter et al., 2018; Hindle 2007) due to the growing interest in
27 everything related to entrepreneurship courses and programs (Audretsch and Link, 2017;
28 Matlay, 2017; Wright et al., 2017). In this vein, education programs try to encourage
29 entrepreneurship and, therefore, promote new venture development (Galvão et al., 2018;
30 Marzocchi et al., 2018). In particular, several studies have analysed the influence of
31 entrepreneurship education and courses on entrepreneurship training in regard to the
32 creation of new companies and business opportunities (Rae and Wang, 2015; Rideout and
33 Gray, 2013; Weber, 2012).
34
35
36
37
38
39
40
41

42 Furthermore, the number of papers and manuals focused on entrepreneurship education in
43 higher education has increased in recent decades (Mason and Siqueira, 2014). For instance,
44 Fiet (2001) focuses his research on the pedagogical aspects of entrepreneurship education,
45 while Solomon and Fernald (1991) highlight the influence of entrepreneurial education in
46 the creation of SMEs. Others authors explore different pedagogical methods for teaching
47 entrepreneurship (Solomon et al., 1994) or use the analysis of business failure as a method
48 for teaching students and future entrepreneurs (Shepherd, 2004).
49
50
51
52
53
54
55

56 However, the way in which entrepreneurship education is taught shows a major gap in the
57
58
59
60

1
2
3 academic literature (Kuratko, 2005). Moreover, according to Blenker et al., (2014) and
4 Volkmann and Audretsch (2017) the current practice of entrepreneurial education in higher
5 education encompasses a wide range of teaching methods, strategies and pedagogical
6 approaches. However, Higgins et al., (2018) state that traditional instructional pedagogical
7 methods are not sufficient to adequately prepare and educate entrepreneurship students.
8 Thus, prior research has focused on entrepreneurship as a subject from a *behaviorist*
9 *perspective* where only there is a passive transfer of knowledge from the teacher to the
10 student. In addition, prior research has overlooked the great utility of the UD as active
11 training tool (Tounés et al, 2014). In this regard, our research is informed by *demand-*
12 *competence model pedagogy* (Nabi et al., 2017) since it analyses a pedagogy tool (UD) that
13 includes an important component of real-world experience. Under this scheme, the
14 teaching is more transferable to the actual business environment because it uses problem-
15 based learning (Higgins et al., 2018; Kirkwood et al., 2014; Wenger, 2014), with the aim
16 of enabling business start-ups (Burrows and Wragg, 2013; Jones et al., 2017).
17
18
19
20
21
22
23
24
25
26
27
28

29 The above-mentioned pedagogical model we are using as a reference fits under the
30 *constructivist perspective* to entrepreneurial education (Lobler, 2006) and focuses on
31 experiential approaches, highlighting an “interactionist theoretical paradigm”, that entails
32 active problem solving (Nabi et al., 2017). In this framework, learning involves actively
33 participating in the generation of new understanding (Carbery and Hegarty, 2011; Refai et
34 al., 2015) and “teaching is conceived as a strategic intervention to allow for how students
35 organize the resource at their dispose into competences that can be mobilized for action”
36 (Bechard and Gregoire, 2005: 115-116). Lastly, according to Nabi et al., (2017: 3-5) this
37 pedagogical model “focuses on methods emphasizing “communication and discussion”
38 (e.g., seminar, presentations, debates) and knowledge “production” (e.g., essays, modeling,
39 portfolios)”.
40
41
42
43
44
45
46
47
48
49

50 More specifically, the Royal Decree 1393/2007, in which the Organization of Official
51 University Education is established in Spain –modified in part by the Royal Decree
52 861/2010–, sets up the ordinance and implementation of official university graduate and
53 masters teaching as part of the European Higher Education Area (EHEA). Thus, with
54
55
56
57
58
59
60

1
2
3 regard to graduate studies, the carrying out of Undergraduate Dissertations (UDs) by the
4 students was established as the cornerstone for achieving the new objectives, competences
5 and skills promoted by the new study plans for European Higher Education Area (Mateo et
6 al., 2012a; Reguant et al., 2018).
7
8
9

10
11 Thereby, the undergraduate dissertation (UD) plays an essential role in the integral
12 evaluation of the acquisition, development and control of specific and transversal
13 competences obtained by the students throughout their undergraduate studies (Ashwin et
14 al., 2017; Greenbank et al., 2008; Rand, 2016). For this reason, it is configured as an
15 obligatory subject, which must be carried out in the final phase of undergraduate study
16 plans (Boud and Costley, 2007; Calvert and Casey, 2004; Feather et al., 2014) and to
17 which every university must assign freely and autonomously between 6 and 30 ECTS
18 (European Credit Transfer System) credits, which correlates to between 150 and 750 hours
19 of student work, and entails the presentation of a project of some magnitude (Pepper et al.,
20 2001; Shadforth and Harvey, 2004).
21
22
23
24
25
26
27
28
29

30
31 Authors such as Sánchez-Fernández (2013) have noted that there is no standard UD that
32 serves as global reference model. However, Engström (2015) does develop a model for
33 conducting and assessing interdisciplinary undergraduate dissertations. Thus, it is possible
34 to argue that UD's have their own traits and characteristics that distinguish and differentiate
35 them from the other subjects that comprise undergraduate studies (Parsons and Knight,
36 2005; Todd et al., 2004, 2006), which we examine and outline below.
37
38
39
40
41

42
43 First, Knight and Botting (2016) state that, when students are allowed to choose their own
44 area of research from a restricted list of topics suggested by their tutors the motivation to
45 carry out the UD is far greater. In this regard, Armstrong and Shanker (1983) and Snively
46 and Wright (2003) understand that the student, as the main person responsible for their
47 own teaching-learning process, can choose the specific theme, content and orientation of
48 their UD. Ultimately, for Greenbank and Penketh (2009) and Webster et al., (2000) the
49 appropriately scoped UD should be carried out solely by the students. This process
50 includes the planning and development of the project.
51
52
53
54
55
56
57
58
59
60

1
2
3 Nevertheless, from another perspective, other authors argue that too much autonomy could
4 be negative, and highlight that direction-tutelage becomes necessary in this area, through a
5 teacher-tutor (Cook, 1980; Roberts and Seaman, 2018) who can advise and direct the
6 student throughout this laborious process of producing the UD, thereby avoiding, a lack of
7 focus or direction in the project (Vera and Briones, 2015). Lastly, other research such as
8 Hernández-Leo et al. (2013) state that the content and theme of the subject, can be
9 different for each student and can be proposed by the project tutor, the students themselves
10 or via consensus between the two. In this regard, Armstrong et al. (2004) and Stefani et al.
11 (1997) argue that it is essential to establish a climate of open dialogue between supervisors
12 and students, to ensure that the assessment of any learning task is commensurate with the
13 objectives and learning outcomes.
14
15
16
17
18
19
20
21
22
23

24 Secondly, the presentation of the UD, allows the students to learn and develop research
25 techniques and methodologies for dealing with specific data sets, given that a well-
26 developed project requires the collection of primary (first-hand) data in order to carry out
27 market research, as well as a thorough analysis of this data and already existing secondary
28 sources (Healey et al., 2013).
29
30
31
32
33

34 Thirdly, Webster et al., (2000) state that, given its scope and complexity, the UD can be
35 used as an efficient means to evaluate university students enabling the distinction between
36 top students, who achieve a high level of academic excellence, from lower performers.
37
38
39
40

41 Finally, a distinctive and extremely relevant characteristic of the UD –above all, in
42 business administration and management– is that it provides an important link to the
43 business world that awaits the students at the conclusion of their studies (Malcolm, 2012;
44 Rich, 2010; Smith et al., 2017). To this end, the UD is configured as a point of connection
45 between the academic world and the reality of the business world awaiting the students on
46 finishing their university degrees (Hernández-Leo et al., 2013; McMurray et al., 2017).
47
48
49
50
51
52

53 The aim of this study is to analyse the problems detected in the academic years 2012-2013
54 and 2013-2014, in undergraduate dissertations, in the Business Management and
55
56
57
58
59
60

1
2
3 Entrepreneurship Undergraduate Course at the European University of Madrid, as well as
4 the good practices and improvement plans implemented to correct the problems previously
5 detected, and the results achieved in the subsequent academic years of 2014-2015, and
6 2015-2016.
7
8
9

10 11 **Structure and content of Undergraduate Dissertation** 12 13

14
15 The “Undergraduate Dissertation” (UD) is a compulsory subject in the fourth year (from
16 September to June) of the Business Management and Entrepreneurship degree (BME) at
17 the European University of Madrid, with a value of 6 ECTS credits. Upon finishing their
18 undergraduate learning, the students complete and present a project on the creation of a
19 company, based on an original and innovative idea, following an established structure and
20 set of rules, and advised and guided by a teacher-tutor.
21
22
23
24
25
26

27 The UD must be carried out in groups of 3 people (with the exception of the occasional 4-
28 person group where the total number of students is not divisible by 3), through in-person
29 tutorials and with the support of virtual classrooms, the students plan their projects and
30 coordinate their contributions and data sharing, to put together and produce one single
31 group presentation for each of the activities and for the final presentation of the project.
32 The UD is organised and structured into 4 phases. In each one, the students must develop
33 the corresponding part of the project, execute the applied activities and, when required,
34 attend face-to-face tutorials or seminars or through the virtual classroom. Below, we
35 outline the contents of each of these phases:
36
37
38
39
40
41
42
43

44 PHASE 1. Introduction to the UD: presentation of the norms and rules for the elaboration
45 and evaluation of the project, as well as the format for the project execution.
46
47
48

49 PHASE 2. Topic identification and market analysis: define and analyse those aspects of the
50 project to develop related to the market, sector and the competition: the identification and
51 analysis of the market; the analysis of the sector and PESTEL analysis; analysis of the
52 competition, SWOT analysis and Porter’s Five Forces; planned involvement and market
53
54
55
56
57
58
59
60

study.

PHASE 3. Strategic and operational development: establish the strategies and lines of action in the business plan, in particular, aspects relating to marketing and production; company location, organization and human resources; financial-economic analysis; formal and legal aspects; management of company image, quality and social responsibility.

PHASE 4. Final presentation of the business plan: formalise the final presentation of the project both printed and face-to-face; production of the conclusion, bibliography, sources and annexes; final project format; presentation slides.

Lastly, for those projects considered to be apt by the tutor, the students deliver a 15-20 minutes oral defense of their project in public, including 15-20 minutes extra for questions from the evaluating Tribunal, questions which the students must answer and defend appropriately. In this respect, table 1 indicates those UD activities that are evaluated, as well as the evaluation criteria.

Table 1: Evaluation of Undergraduate Dissertation.

Learning Units	Activities for evaluation	Evaluation Criteria
PHASE 1-3	<ul style="list-style-type: none"> • Proposal and topic description form. • Summary report PHASE 2. • Summary report PHASE 3. • Provisional presentation. 	<ul style="list-style-type: none"> • Interpretation of the information • Content. • Originality. • Structure of ideas.

PHASE 4	<ul style="list-style-type: none"> • Final printed presentation of the project. 	<ul style="list-style-type: none"> • Structuring and quality of the content. • Originality and viability of the plan. • Justification for the project. • Adaptation to the specific norms.
----------------	--	--

PHASE 4	<ul style="list-style-type: none"> • Presentation of the project 	<ul style="list-style-type: none"> • Professionalism in the presentation • Expression, communication. • Resources used.
----------------	---	--

Material and methods

This work combines qualitative and quantitative research analysis. First, we addressed qualitative research analysis, identifying and outlining the problems occurring during the academic years (2012-2013 and 2013-2014) in 89 UD's and the proposed solutions to these problems and their implementation in the subsequent academic years (2014-2015 and 2015-2016) in 113 UD's. The materials and data used to identify the problems and come up with the proposed solutions correspond to the learning units outlined in table 1, including all the materials generated by the students (initial proposal, complete UD project, UD presentation, Excel document with the calculations for all parts of the Business Plan, etc.), course guide for the subject in each academic year and all the marks and comments from the tutor/s and Tribunals (marks and comments for the summary reports, comments and recommendations from the tutor regarding the UD carried out, comments, observations and marks breakdown from the Tribunal regarding the UD and the presentation of the UD, etc.). This is introduced in the material and methods section, as a step prior to the quantitative analysis.

Second, the results section addresses through quantitative research analysis, the descriptive statistics obtained as outcome of the plans for improvement and the Wilcoxon-Mann-Whitney test. The data used comes from the course guide for the subject in each academic year, the marks obtained by each student, Evaluation Committees, Tribunals –this applies

1
2
3 to the beginning of the results section, until the Wilcoxon-Mann-Whitney test is
4 mentioned– and a questionnaire put to the students in the last month of the academic year
5 2012-2013 (174 answers) and 2015-2016 (184 answers) –after the Wilcoxon-Mann-
6
7 Whitney test is mentioned in the results section-.

8
9
10 This exhaustive sample is made up of 89 UD's presented between the years 2012 and 2014
11 (prior to the implementation of the plans for improvement) and 113 UD's carried out
12 between the years 2014 and 2016 (post-implementation of plans for improvement). All the
13 UD's analysed deal with the creation of a business plan based on an original and innovative
14 idea, the project is carried out in groups of a maximum of three people. The data collection
15 via questionnaire was obtained at the end of each academic year, as was the case for all
16 other data collected. This questionnaire was validated through a pre-test with five students
17 and five academics with the aim of obtaining reliable measurements of the variables and
18 the scale used was the Likert 5-point scale. Questionnaire answers obtained cover at least
19 one member from each of the UD groups analyzed, and responses to the questionnaire
20 were voluntary.

21
22
23
24
25
26
27
28
29
30
31 The Wilcoxon-Mann-Whitney test is a non-parametric method for comparing two
32 independent samples, as is the case for the comparison of a sample from the academic year
33 2012-2013 with another sample from the academic year 2015-2016. This test is the non-
34 parametric equivalent of the t-student test, and therefore, recommended and optimal in the
35 case of ordinal variables such as Likert type variables or those variables with scales of 0 to
36 10 (the student marks in any given subject). Wilcoxon (1945) initially proposed this test
37 for samples of the same size, but Mann and Whitney (1947) extended it to cover samples
38 of different sizes. In short, this statistic allows us to detect the existence of differences
39 between two independent samples of different sizes in relation to one ordinal variable.

40
41
42
43
44
45
46
47
48 The statistical analysis was carried out using the statistics programme SPSS 15.0.

49 50 51 ***Problems detected***

52
53
54
55 According to the European Higher Education Area (EHEA), the UD plays a main role in
56
57
58
59
60

1
2
3 the integral assessment of the acquisition, development and implementation of
4 competences acquired by the students throughout their undergraduate studies. Despite its
5 importance, many universities have not yet addressed this particular issue with the
6 seriousness it merits. In general, similar institutions have not been provided with the
7 necessary material resource, nor with an adequate and specialized teaching staff required
8 for the correct teaching of the subject. By way of example, in most cases the number of
9 ECT credits granted for UD-related teaching assignments is absurdly low, and does not
10 accurately reflect the work required from UD tutors.
11
12
13
14
15
16
17
18

19 In addition, there is a problem of focus and interconnection of subject UD with the
20 business sphere, which diminishes the usefulness of the UD as active training tool. In our
21 view, the UD may be a first step in the students' entrepreneurial education, representing an
22 opportunity to train and connect skills and knowledge learned about the starting a new
23 venture, and also providing real-world practical experience in the entrepreneurial space.
24
25
26
27
28

29 In particular, the analysis, valuation and assessment of the 89 Business Plans presented by
30 the students in the 2012-2013 (44 UDs) and the 2013-2014 (45 UDs) academic years,
31 revealed a series of recurring problems in the two academic years analysed.
32
33
34
35

36 **First**, the need to increase the requirement level and promote the academic and
37 professional quality (Wood and Breyer, 2017) of the UDs "Business Plan" presented by the
38 students to the final evaluating Tribunal was observed. This outcome, derived from the
39 existence of an unacceptably high number of UDs considered as not apt -36%-37%- by the
40 corresponding Tribunal. The projects suffered from numerous problems relating to the
41 structuring and writing of the UD, spelling mistakes, syntax and grammar among others. In
42 addition, students had difficulties developing an economic-financial plan, and justifying
43 pricing policies and sales forecasts. These are questions of vital importance when
44 evaluating the economic-financial viability of the company proposed in the business plan.
45
46
47
48
49
50
51
52

53 In this respect, we noted that similar institutions have not developed and implemented a
54 specific set of rules to encourage good writing, such as the mandatory application of spell-
55
56
57
58
59
60

1
2
3 check programs and style correctors. In addition, regarding the planning and development
4 of the economic-financial issues of the business plan, similar institutions do not provide a
5 detailed and thorough economic-financial dossier (created by tutors) that students are
6 required to use. Such a dossier would clarify and homogenize contents for this specific
7 area.
8
9
10
11
12

13 **Second**, the need to improve the evaluation system of the Tribunal assigned to the UDs
14 was observed. This would require the planning and development of a more objective,
15 specific, complete, detailed and better defined evaluation rubric, in order to eliminate or
16 reduce, in so far as possible, any subjective bias in the valuation and subsequent marking
17 of the different UDs being evaluated (Annetts et al., 2013; Roberts and Seaman, 2018).
18 Additionally, the criteria used in Tribunals' evaluations need to be clearly defined and
19 stated explicitly in the course guide for the subject.
20
21
22
23
24
25
26

27 In several similar institutions we noted that the marking system is deficient due to the fact
28 that the final assessment of UD is carried out by the student's own tutor and there is no
29 evaluation Tribunal, except in cases where the student opts for First Class Honours. In such
30 cases, the student's UD is evaluated by Tribunal. In other similar institutions there is a
31 Tribunal, but one of its members is the student's own tutor, which in our opinion could
32 skew the evaluation process. Lastly, in most cases, we observed that evaluation rubric is
33 very simple and the reasons provided for not apt-failed are not very detailed.
34
35
36
37
38
39
40

41 **Thirdly**, a number of coordination problems between the different teachers-tutors of the
42 subject was found to exist with regard to the monitoring of the different UD groups
43 assigned to each, the setting of the deadlines of the different tasks and activities, as well as
44 the deadline for the final draft (Derounian, 2011; Rowley and Slack, 2004). In this area, we
45 noted the difficulty in effectively forming homogenous UD evaluation Tribunals, when
46 they are made up of teachers from different areas, who had to coordinate to find a time
47 when all were available and which did not coincide with exams for other subjects.
48 However, in similar institutions where there is no evaluating Tribunal, these types of
49 scheduling issues are a relatively minor issue.
50
51
52
53
54
55
56
57
58
59
60

1
2
3
4
5 **Fourthly**, it was verified that it was necessary to stimulate the interest and motivation of
6 the students in carrying out the UD by making them understand its critical importance as
7 an end of degree project, as well as underscoring the link between their UD and the labour
8 market (Gunn, 2010; Rich, 2010). The end objective would be that the students produce
9 innovative, achievable projects, which can be implemented and serve as a starting point, in
10 practice, for the creation of a real company. Up to now, this has not occurred in the
11 academic years analysed.
12
13
14
15
16
17

18
19 Finally, in some similar institutions, we noted that there is business-incubator created with
20 the aim of stimulating entrepreneurship and promoting start-ups. Nevertheless, business-
21 incubators are configured as isolated entities and far from the university organization itself.
22 They are disconnected from the subject (UD) and the corresponding study plans. In our
23 view, this disconnect can be remedied by linking the UD to the business incubator. The
24 UD is thereby configured as an active training tool enmeshed or interconnected with the
25 business incubator so that students can carry out the business plan derived from their
26 particular project and make it real with the support and mentoring of said business
27 incubator. Lastly, we have not observed in similar institutions that any award system for
28 the best UDs presented to the final evaluating Tribunal was established.
29
30
31
32
33
34
35
36
37

38 ***Implementation of improvement plans***

39
40
41 Taking into consideration the prior experience of the analysis and valuation of the UDs
42 presented in the academic years 2012-2013 and 2013-2014, a series of plans for
43 improvement were implemented in the academic years 2014-2015 and 2015-2016, along
44 with a set of good practices, with the aim of correcting the deficiencies observed.
45
46
47
48
49

50 **1.** Firstly, in relation to the need to increase the level of requirement and academic quality
51 of the UDs, two initiatives were put forward:
52
53
54

55 **1.1.** Definition and development of a set of norms for linguistic correctness and the
56
57
58
59
60

obligatory application of spelling and style correctors:

- In the degree subjects, for each spelling mistake in an exam, half a point is deducted from the overall score for each exercise, while for the reiteration of punctuation and accent errors up to two points can be deducted, at the discretion of the teacher. However, in the case of assignments that have already been revised- as is the case with the UD subject-, in which the student has had access to the linguistic norms (as well as the spelling and style correctors) during the elaboration of the Business Plan, the deductions in the final mark outlined above are doubled, that is to say, one point for each spelling error and up to four points for a reiteration in punctuation and accent errors.

- With regard to the linguistic norms, the Pan-Hispanic Dictionary of Doubts (PDD) is used as a reference. This dictionary was created by the Association of Spanish Language Academies to clarify the most frequent doubts posed by the Spanish language. Thus, the PDD proposes as the norm, a model of language which corresponds to the way of speaking and writing used by cultured Spanish speakers in formal situations of communication. These doubts are ordered alphabetically, as they would be in a dictionary. Finally, a number of direct links are provided in the course guide to allow the students to consult some of the most visited entries in the PDD.

1.2. The tutors prepared a detailed and thorough financial dossier, for compulsory use, which complements the subject contents in this specific area, clarifying and homogenizing the planning and development of all the economic-financial aspects of the business plan - initial investment and funding, non current assets amortization table, loan amortization table, annual accounts forecast, VAT table, cash flow statement, ratio analysis, investment valuation, among others-, which must be correctly performed to successfully achieve the objectives of the subject.

2. Secondly, with regard to the evaluation and marking system of the UDs we can highlight 3 aspects:

2.1. A marking system with 3 filters was designed. In the first of these, the tutor makes a

1
2
3 report with an initial valuation of each of the final tutored UD's. The second filter -through
4 the creation of an evaluation committee made up of different tutors and teachers in the
5 subject-, is responsible for taking into account the information provided by each tutor, that
6 is to say, whether each UD is apt or not apt for presentation to the final evaluating Tribunal;
7 it must be pointed out that the function of the committee is not to give a mark, but rather to
8 act as an initial filter to prevent the presentation to the tribunal of incomplete or incorrect
9 UD's or those that do not meet the minimum levels of quality required. Lastly, for those
10 UD's considered to be apt for presentation by the evaluation committee, the final evaluating
11 Tribunal decides what mark to give each UD, taking into consideration the quality of the
12 written work and the public oral presentation by the students, as well as the development
13 shown by each student in their defense of the project, with regard to the questions asked by
14 the Tribunal.

25
26 **2.2.** With the objective of improving the tribunal's evaluation system, a more objective,
27 specific, complete, detailed and better defined evaluation rubric was designed, so as to
28 reduce the possible subjectivity bias in the valuation and subsequent grading of the UD's.
29 Thus, said rubric awards a 70% weighting to the final written draft, and 30% to the oral
30 presentation before the Tribunal (this includes the presentation carried out by each student,
31 as well as their defense to the questions posed by the Tribunal; which allows to generate
32 the individual qualification of each student according to the performance both in
33 presentation and in defense of the questions asked by the Tribunal members).

41 **2.3.** Finally, the improved course guide for the subject was completed introducing a clearer,
42 more objective and concise definition of the causes for a not apt-fail, among which can be
43 highlighted: class attendance inferior to 50% (for classroom-based formats); failure to
44 carry out the course assignments due; the presentation format is not professional, namely,
45 printing errors, small font, illegible tables, inappropriate template, disparity in font size,
46 use of colors, etc.; absence of the compulsory content stipulated in the course guide,
47 quality of said content and level of development, as well as, the justification for the content
48 and reasoning for it (for example, not following all the guidelines in the financial dossier);
49 serious and repeated spelling errors (see the norms of linguistic correctness above);
50
51
52
53
54
55
56
57
58
59
60

1
2
3 plagiarism; inconsistency in concepts across the different parts of the UD and errors in
4 calculation (for example, carrying out a calculation of costs and determination of prices in
5 the Marketing section which is different to that reflected in the financial statement);
6 calculation errors in the excel document and it is impossible to follow the calculations
7 performed as only the values have been copied not the formulas; the main results of the
8 Excel spreadsheet are not reflected and sufficiently explained in the Word document; one
9 or more of the group members do not actively participate in the group's work forum made
10 available on Virtual Learning Environment (Moodle) for the realization of the UD; and
11 lastly, the incorrect use of information sources or conclusions that are unexplained
12 throughout the UD, be it in the main body, annexes or Excel spreadsheets.
13
14
15
16
17
18
19
20
21

22 **3.** Thirdly, in relation to the coordination problems detected among the different subject
23 tutors regarding the monitoring of the assigned UD groups, the following points were
24 implemented:
25
26
27
28

29 **3.1.** The importance of the subject coordinator as an instrument of control and monitoring
30 is strengthened. In this way, the coordinator plays an essential role in the supervision of the
31 subject matter, through the carrying out of monthly meetings with the tutors, in order to
32 ensure the homogeneity in the deadlines for the periodical presentation of the different
33 tasks and activities programmed throughout the course, as well as controlling the final
34 deadline of the definitive UD, with the aim of preventing students from different groups
35 feeling discriminated against in this respect. Their key role in ensuring that the different
36 tutors apply the instructions contained in the subject guide with the highest rigour and
37 accuracy should also be highlighted.
38
39
40
41
42
43
44
45
46

47 **3.2.** In relation to the difficulty in forming UD evaluation Tribunals, it was decided to
48 postpone their effective constitution until a date after all other subjects' exams had finished,
49 in order to avoid scheduling conflicts between exam dates and presentations of the UDs,
50 and thus make the formations of these tribunals easier.
51
52
53
54

55 **4.** Finally, in relation to the need to stimulate the student's interest and motivation in
56
57
58
59
60

1
2
3 carrying out the UD and to differentiate it from the other degree subjects, the following
4 improvements were implemented:
5
6
7

8 **4.1.** A system of awards for the best UDs presented to the final evaluating Tribunal was
9 established -first and second prizes-, with their corresponding accrediting certificates along
10 with a small cash sum for the first placed, awarded at a formal prize giving event presided
11 over by the Dean of the Social Sciences Faculty.
12
13
14

15
16 **4.2.** Likewise, in order to strengthen and encourage, the link between the UD and the
17 professional world, a “Hub emprende” business incubator was created at the Alcobendas
18 campus (Madrid), which provides support and advice to those students who hoped to use
19 their UD as a springboard for the creation of their own real-world business, with the
20 intention of promoting the development of the most achievable, innovative, and financially
21 viable projects. In this regard, “Hub emprende” is a co-working space based on mentoring
22 that allows students and future entrepreneurs to further develop their entrepreneurial
23 initiatives with the support of technological resources and specialized training that focus on
24 encouraging launch new start-ups in a solid and sustainable way (Universidad Europea,
25 2018).
26
27
28
29
30
31
32
33
34
35

36 **Findings**

37
38
39 Below, are presented the results obtained from the assessment of the improvement plans
40 and good practices described above and implemented in the last two years of the degree
41 courses 2014-2015 and 2015-2016. In this respect, table 2 shows the main results in the 4
42 years analysed. The number of students enrolled maintains relatively stable during the 4
43 academic years (190-197), though the number of students who abandon the subject without
44 presenting the UD falls substantially between the first two years and the last two years,
45 going from a drop-out rate of 30.52% and 30.61% for students enrolled in 2012-2013 and
46 2013-2014 to 14.5% and 11.17% in the years 2014-2015 and 2015-2016. Likewise, not
47 only are more UDs carried out as a result of the implementation of the improvement plans,
48 but also the quality of these is much higher, which is reflected in a large reduction in the
49
50
51
52
53
54
55
56
57
58
59
60

number of fails given by the final evaluating Tribunal, as well as a significant increase in the marks obtained by the students.

Table 2: Academic results of UD, (2012-2016).

Academic years	2012-2013	2013-2014	2014-2015	2015-2016
Number of students enrolled	190	196	193	197
Students presented/not presented (UD not carried out)	132/58	136/60	165/28	175/22
Total number of UD carried out	44	45	55	58
Apt UDs/not apt for presentation to the Tribunal according to the Evaluation Committee	-	-	45 (81.8%) 10 (18.2%)	47 (81%) 11 (19%)
UDs presented to the final evaluating Tribunal	44	45	45	47
UDs apt/not apt by Tribunal	28 (63.6%) 16 (36.4%)	28 (62.2%) 17 (37.8%)	42 (93.3%) 3 (6.7%)	45 (95.7%) 2 (4.3%)
Apt Students /not apt by Tribunal	84 (63.6%) 48 (36.4%)	84 (62.2%) 52 (37.8%)	126 (93.3%) 9 (6.7%)	136 (95.8%) 6 (4.2%)
Fails	48	52	9	6
Passes	57	63	48	45
Lower Second Class	21	15	60	67
Upper Second Class	6	6	15	21
First Class			3	3

Average year mark	5.22	4.69	6.54	6.69
--------------------------	------	------	------	------

Table 3 shows a significant improvement in year 2015-2016 with respect to year 2012-2013, more specifically, the overall satisfaction with the subject, the satisfaction with the work of the teachers, the clarity of the subject content, the clarity and objectivity of the classification for not apt evaluations, the appropriateness of the evaluation process, the UD as a springboard for the creation of a real company, the relevance of the subject to future professional life, the importance of the subject when accessing the labour market, the interest and/or motivation in the subject and the average mark of the students in each academic year, show marked increases in the average value obtained in the last of the academic years analysed.

The Wilcoxon-Mann-Whitney test indicates the existence of significant statistical differences for all variables between the year 2012-2013 and the year 2015-2016 for a $p < 0.001$, with the exception of the variable “UD is a springboard for the real creation of your own company” which accounts for significant statistical differences for a $p < 0.01$. Thus, the improvement plans for the UD have had a possible impact on the variables studied; that is to say, in the results of the students’ learning, in the benefits and results obtained by the student taking the subject and in the motivation and effort from the students.

Table 3: Student survey 2012-2013, and 2015-2016.

	Average for year 2012-2013	Average for year 2015-2016	Wilcoxon-Mann-Whitney (Z value)
Overall satisfaction with the subject (1 very dissatisfied - 5 very satisfied)	3.82	4.34	-6.68***
Satisfaction with the work of the teachers (1 very dissatisfied - 5 very satisfied)	3.81	4.22	-4.97***
The contents of the subject are	3.95	4.41	-6.15***

clear (1 totally disagree - 5 totally agree)			
The causes for not apt-fail are clear and objective (1 totally disagree - 5 totally agree)	4.08	4.37	-3.75***
The process of evaluation is appropriate (1 totally disagree - 5 totally agree)	4.38	4.52	-2.84**
The UD is a springboard for the real creation of one's own company (1 totally disagree - 5 totally agree)	4.05	4.53	-6.79**
The relevance of the subject to future professional life (1 very low - 5 very high)	3.83	4.26	-5.93***
The importance of the subject when accessing the labour market (1 very low - 5 very high)	3.77	4.18	-5.13***
Interest and/or motivation with the subject (1 very low - 5 very high)	3.98	4.7	-10.27***
Average Year mark	5.22	6.69	-9.16***

*p<0.05; **p<0.01; ***p<0.001

Discussion and conclusions

Based on the literature review, it is clear that there is a lack of concrete subject designs that have been subject to in-depth longitudinal research which focuses on entrepreneurship. Therefore, this is pioneering research that highlights the role of the UD in entrepreneurial education. Our work highlights the great utility of UD as active training tool and is grounded in the *demand–competence* model pedagogy

In addition, we have not found any papers in the academic literature which contain in-depth longitudinal research, such as that found in our work (we covered a period from 2012-2016), nor are we aware of the analysis and exploration of this specific topic by other researchers and/or the development and implementation of improvement plans in similar institutions. Given this gap, we feel that our research is novel, and that it makes a clear contribution to the knowledge of the topic in the area analysed. It is likely that this gap is due to the short period the new criteria and guidelines of the EHEA have been in force. Under this new scheme, UD are configured as a key component of the new educational

1
2
3 paradigm in the EHEA. Finally, despite its importance, Spanish universities as well as
4 many other universities around the world have not yet addressed this particular issue with
5 the seriousness it merits. Our research can contribute as a starting point for expanding on
6 and completing these studies, as well as the further exploration and analysis of the
7 development and implementation of this topic in other similar institutions.
8
9

10
11
12
13 **First**, it is important to highlight that the level and “academic excellence” of the UDs has
14 increased, which translates to a general improvement in the teaching-learning process
15 (McLean et al., 2017). A substantial increase can be observed in the number of UDs
16 considered to be apt by the final evaluation Tribunal -once they have passed the evaluating
17 committee’s filter- passing from 63.6% in academic year 2012-2013 to 95.7% in the year
18 2015-2016.
19
20
21
22
23

24
25
26 Moreover, there is a considerable increase in the average mark for each academic year
27 (5.22 in 2012-2013 and 6.69 in 2015-2016) and in the number of UDs with high grades –
28 Lower Second, Upper Second-, as well as the awarding of First Class Honours in the last 2
29 years, which were previously non-existent. In line with previous studies such as one by
30 Pathirage et al., (2007) the students have highly valued the improvement in the course
31 guide of the subject with the inclusion of the norms of linguistic accuracy, spelling and
32 style and the addition of a detailed explanation of the causes for a not apt score. In addition,
33 the production of the financial dossier has been valued as a great support for the
34 completion of the Economic and Financial Plan. In line with our proposal, other authors,
35 such as Serrano-Gallardo et al., (2017) highlight as key factors behind the improvement of
36 the UD grades, the modality of teamwork and the presentation at the first summons.
37
38
39
40
41
42
43
44
45

46 **Second**, the system of evaluation and grading implemented (Hand and Clewes, 2000) has
47 turned out to be very useful. In particular, the creation of an evaluation committee as an
48 initial filter to establish whether each UD is apt or not apt for presentation to the final
49 evaluating Tribunal. Thus, most of the UD that have achieved an apt from the evaluation
50 committee have gone on to obtain an apt qualification from the final evaluating Tribunal –
51 to be precise 93.1% (2014-2015) and 95.6% (2015-2016)-. Through this, a greater
52
53
54
55
56
57
58
59
60

1
2
3 efficiency is achieved in the formation and management of the Tribunals, as well as in the
4 assignment of resources in general, given that those UD's that do not surpass the minimum
5 level of quality required cannot be presented. Likewise, the overall number of not-apt UD's
6 awarded by the committee and Tribunal combined, has also fallen slightly, as a
7 consequence of the increase in the quality of the projects carried out by the students.
8
9
10
11
12

13 Furthermore, and in line with research such as that of by Harris and Bell (1994) and
14 Pathirage et al. (2007) the planning and development of a more specific, thorough, detailed
15 and better defined evaluation rubric, has brought about a substantial improvement in the
16 objectivity of the valuation and subsequent classification of the UD's under evaluation.
17 Based on the evaluations made by the Tribunals/Tutors and the decrease in the number of
18 reclamations made by the students, it can be stated that the improvement in the detail
19 within the rubric regarding what is required by the subject, along with a more detailed
20 explanation of the reasons behind a fail, have had a very positive effect on the work carried
21 out by the students and their motivation.
22
23
24
25
26
27
28
29
30

31 **Thirdly**, the strengthening of the subject coordinators role with regard to monitoring and
32 supervision of the projects (Balla and Boyle, 1994; De Kleijn et al., 2015; Del Río et al.,
33 2017), the increase in the number of periodic meetings with tutors, the improvement in the
34 wording and content of the teaching guide and the reduction in the number of complaints
35 by enrolled students, leads us to believe that the problems in coordination detected between
36 2012-2014 have been reduced, which has been a key driver in the positive performance of
37 the subject.
38
39
40
41
42
43
44

45 **Fourthly**, according to our findings the student's interest and motivation for the UD
46 subject has increased throughout the period analyzed (2012-2016). This could be due to
47 students placing a high value on the award of prizes for the best UD's, perceiving it as the
48 factor in the subject that differentiates it from the other subjects in the degree. In fact, the
49 success of this initiative has been such that the model of prize giving has been copied and
50 put into practice on other degrees taught at the Social Sciences Faculty -Finance, Tourism
51 or Marketing Degrees-.
52
53
54
55
56
57
58
59
60

1
2
3
4
5 Moreover, in line with our results we can assert that the connection with the business
6 incubator has brought about a sustained and increased interest in entrepreneurship and the
7 program's link to the professional and work worlds. Most of the students showed an
8 interest in creating a business, and in the last two academic years an average of 3-4 real
9 companies have been created from the UD's carried out, which had been impossible to
10 achieve during the period 2012-2014.
11
12
13
14
15

16
17 Based on feed-back from students we can affirm that the limited access to relevant
18 information was a pain point that resulted in poor dissertations. In this regard, for instance,
19 the production of economic and financial dossier by the tutors provided excellent support
20 for students and improved UD's in that specific area. Overall, improved student orientation,
21 and providing enhanced materials and detailed explanations of the subject requirements
22 helped students substantially when studying and tackling the subject, despite its greater
23 difficulty compared to other subjects in the degree.
24
25
26
27
28
29

30
31 Regarding the possibility that students choose their own subjects for the UD, we noted that
32 academic literature is unclear on this topic. Nevertheless, our perception derived from
33 feed-back with the students indicates that in cases where student chooses their own
34 subjects with the tutor's support and mentoring, they feel more motivated about their
35 project. Furthermore, they don't feel lost or disoriented when making a choice about their
36 subject focus. Lastly, the lack of supporting documentation, students' difficulty in finding
37 or accessing relevant information, etc., are issues that significantly affect the achievement
38 of the UD. This requires providing specific dossiers to students, which is only possible if
39 the student chooses a specific topic from among the mandatory subjects, based on their
40 interests, and with the guidance of their tutor.
41
42
43
44
45
46
47
48

49
50 Additionally, what is most noteworthy is, without doubt, that all the measures taken have
51 had a positive effect on the attitude and interest of the students in the subject. Students are
52 more motivated and expend more effort on passing the subject. They also have a deeper
53 understanding of its relevance with regard to their future professional lives and their
54
55
56
57
58
59
60

1
2
3 incorporation into the labour market. Moreover, the coordination between teachers has not
4 only sought the harmonizing of the content, development and evaluation of the subject, and
5 the increase in the dissemination of good practices and solutions to common practices, but
6 has also catalyzed an effective collaboration between teachers as they seek out and develop
7 new innovative practices and changes which enrich the teaching-learning process in the
8 subject. Furthermore, the role of the UD is strengthened, as it is a subject with a high
9 potential to positively impact graduates' entry the labour market, where they can deploy
10 the knowledge acquired throughout the degree.
11
12
13
14
15
16
17
18

19 We would also note that the entrepreneurial spirit was clearly instilled in students, with a
20 large number of them considering creating their own business, using the UD as the basis
21 for a *business plan* for their new company. Lastly, it should be highlighted that in 2016 the
22 Madri+d Foundation developed the process for supervision and control of the degree which
23 culminated in a fair and favorable report for its re-accreditation, emphasizing in said report
24 that the Undergraduate Dissertation is one of the strong points that should be highlighted in
25 the degree.
26
27
28
29
30
31

32 Finally, future research could analyze the effects of incorporating more technology into the
33 UD matrix, specifically, information technologies, communication technologies,
34 simulation platforms, interactive learning platforms, etc. One of the contributions of this
35 paper is that it shows that improved tracking and greater support of projects has a direct
36 and positive impact on students' learning process during the UD, as well as on student
37 satisfaction with their learning outcome. This article represents a first step in a promising
38 research vector. Future research can focus on issues such as practices to improve tracking,
39 establishing the optimal monitoring and autonomy mix (one of the strong points of UD is
40 to learn from errors, after being corrected by tutors), the relationship between UD learning
41 process outcomes and the periodicity of the tracking, forms of tracking, monitoring formats
42 (in-person vs. online), etc. In fact, the large number of outstanding issues to address,
43 making this topic an extremely promising avenue for further research.
44
45
46
47
48
49
50
51
52

53 In regard to the business incubator, after the end of the UD, once the project shifts over to
54 the incubator, it would be worthwhile to complement the academic mentor with an
55
56
57
58
59
60

1
2
3 industry-related mentor. This practice is carried out in many incubators with excellent
4 results, although few university incubators have such mentor. We believe that this could
5 have a very positive impact on the entrepreneurial training of the student. However, it is
6 currently an unexplored question, full of unknowns, which may be another promising and
7 fruitful area to explore.
8
9
10
11
12

13 **References**

14
15
16 Annetts, S., Jones, U. and Deursen, R. V. (2013), “An innovative review of an
17 undergraduate dissertation double marking policy”, *Innovations in Education and*
18 *Teaching International*, Vol. 50 No. 3, pp. 308-317.

19
20
21 Armstrong, M. and Shanker, V. (1983), “The supervision of undergraduate research:
22 student perceptions of the supervisor role”, *Studies in Higher Education*, Vol. 8 No.2, pp.
23 177-183.
24

25
26 Armstrong, S. J., Allinson, C. W. and Hayes, J. (2004), “The effects of cognitive style on
27 research supervision: A study of student-supervisor dyads in management
28 education”, *Academy of Management Learning & Education*, Vol. 3 No. 1, pp. 41-63.
29

30
31 Ashwin, P., Abbas, A. and McLean, M. (2017), “How does completing a dissertation
32 transform undergraduate students’ understandings of disciplinary knowledge?”,
33 *Assessment & Evaluation in Higher Education*, Vol. 42 No. 4, pp. 517-530.
34

35
36 Audretsch, D. B. and Link, A. N. (2017), *Universities and the Entrepreneurial Ecosystem*.
37 Edward Elgar Publishing, Unites States.

38
39 Balla, J. and Boyle, P. (1994), “Assessment of student performance: a framework for
40 improving practice”, *Assessment and Evaluation in Higher Education*, Vol. 19 No. 1, pp.
41 17-28.
42

43
44 Béchard, J. P. and Grégoire, D. (2007), “Archetypes of pedagogical innovation for
45 entrepreneurship education: Model and illustrations”, in A. Fayolle (Ed.), *Handbook of*
46 *research in entrepreneurship education* Vol. 1, pp. 261–284, Edward Elgar Publishing,
47 Cheltenham, UK.

48
49 Blenker, P., Trolle Elmholdt, S., Hedeboe Frederiksen, S., Korsgaard, S. and Wagner, K.
50 (2014), “Methods in entrepreneurship education research: a review and integrative
51 framework”, *Education+Training*, Vol. 56 No. (8/9), pp. 697-715.
52

53
54 Boud, D. and Costley, C. (2007), “From project supervision to advising: new conceptions
55 of the practice”, *Innovations in Education and Teaching International*, Vol. 44 No.2, pp.
56 119-130.
57
58
59
60

1
2
3
4 Burrows, K. and Wragg, N. (2013), "Introducing enterprise-research into the practical
5 aspects of introducing innovative enterprise schemes as extra curricula activities in higher
6 education", *Higher Education, Skills and Work-Based Learning*, Vol. 3 No. 3, pp. 168–179.

8
9 Calvert, B. and Casey, B. (2004), "Supporting and assessing dissertations and practical
10 projects in media studies degrees: towards collaborative learning", *Art, Design &
11 Communication in Higher Education*, Vol. 3 No. 1, pp. 47-60.

12 Carbery, A and Hegarty, N. (2011), "Introducing problem-based learning into one-shot
13 information literacy instruction at Waterford Institute of Technology Libraries", *SCONUL
14 Focus*, Vol. 53, pp. 30-33.

16
17 Cook, M. C. (1980), "The role of the academic supervisor for undergraduate dissertations
18 in science and science-related subjects", *Studies in Higher Education*, Vol. 5 No. 2, pp.
19 173-185.

21
22 De Kleijn, R. A., Meijer, P. C., Brekelmans, M. and Pilot, A. (2015), "Adaptive research
23 supervision: exploring expert thesis supervisors' practical knowledge", *Higher Education
24 Research & Development*, Vol. 34 No. 1, pp. 117-130.

26
27 Del Río, M. L., Díaz-Vázquez, R. and Maside Sanfiz, J. M. (2017), "Satisfaction with the
28 supervision of undergraduate dissertations", *Active Learning in Higher Education*,
29 published online: July 23, 2017. <https://doi.org/10.1177/1469787417721365>.

31
32 Derounian, J. (2011), "Shall we dance? The importance of staff-student relationships to
33 undergraduate dissertation preparation", *Active Learning in Higher Education*, Vol. 12 No.
34 2, pp. 91-100.

35
36 Engström, H. (2015), "A model for conducting and assessing interdisciplinary
37 undergraduate dissertations", *Assessment & Evaluation in Higher Education*, Vol. 40 No. 5,
38 pp. 725-739.

40
41 Fayolle, A., Tavakoli, M., Le Pontois, S., Loi, M. and Tixier, J. (2018), "Entrepreneurship
42 education effectiveness: What we can learn from education and organisation studies",
43 In *International Enterprise Education*, pp. 69-91, Routledge, London.

44
45 Feather, D., Anchor, J. R. and Cowton, C. J. (2014), "Supervisors' perceptions of the value
46 of the undergraduate dissertation", *The International Journal of Management
47 Education*, Vol. 12 No. 1, pp. 14-21.

49
50 Fiet, J. O. (2001), "The theoretical side of teaching entrepreneurship", *Journal of Business
51 Venturing*, Vol. 16 No. 1, pp. 1-24.

52
53 Galvão, A., Marques, C. S. and Marques, C. P. (2018), "Antecedents of entrepreneurial
54 intentions among students in vocational training programmes", *Education + Training*. Vol.
55 60 No. 7/8, pp. 719-734.

56
57
58
59
60

1
2
3
4 Greenbank, P., Penketh, C., Schofield, M. and Turjansky, T. (2008), “The undergraduate
5 Dissertation: “most likely you go your way and I’ll go mine”, *The International Journal*
6 *for Quality and Standards*, Vol. 3 No. 22, pp. 1-24.
7

8
9 Greenbank, P, and Penketh, C. (2009), “Student autonomy and reflections on researching
10 and writing the undergraduate dissertation”, *Journal of Further and Higher Education* Vol.
11 33 No. 4, pp. 463–72.
12

13
14 Gunn, V. (2010), *Enhancing research-teaching linkages as a way to improve the*
15 *development of employability attributes*, Quality Assurance Agency, Scotland.
16

17 Hayter, C. S., Nelson, A. J., Zayed, S. and O’Connor, A. C. (2018), “Conceptualizing
18 academic entrepreneurship ecosystems: a review, analysis and extension of the literature”,
19 *The Journal of Technology Transfer*, pp. 1-44 (to appear).
20

21
22 Hand, L. and Clewes, D. (2000), “Marking the difference: an investigation of the criteria
23 used for assessing undergraduate dissertations in a business school”, *Assessment &*
24 *Evaluation in Higher Education*, Vol. 25, pp. 5-21.
25

26
27 Harris, D. and Bell, C. (1994), *Evaluating Assessing for Learning*, Kogan-Page, London.
28

29
30 Healey, M., Lannin, L., Stibbe, A. and Derounian, J. (2013), *Developing and enhancing*
31 *undergraduate final-year projects and dissertations*, Higher Education Academy, York.
32

33
34 Hernandez-Leo, D., Oliver, V.M., Camps, I., Clarisó, R., Monés, A.M., Galindo, M.J. and
35 Melero, J. (2013), “Implementación de buenas prácticas en los Trabajos Fin de Grado”
36 [Implementation of good practices in the Undergraduates Dissertations], *Revista de*
37 *Docencia Universitaria*, Vol. 11, pp. 269-278.
38

39
40 Higgins, D., Refai, D. and Keita, D. (2018), “Focus point: the need for alternative insight
41 into the entrepreneurial education paradigm”, *Journal of Small Business &*
42 *Entrepreneurship*, pp. 1-18.
43

44
45 Hindle, K. (2007), “Teaching entrepreneurship at university: from the wrong building to
46 the right philosophy”, *Handbook of Research in Entrepreneurship Education*, Vol.1, pp.
47 104-126.
48

49
50 Jones, P., Pickernell, D., Fisher, R. and Netana, C. (2017), “A tale of two universities:
51 graduates perceived value of entrepreneurship education”, *Education+ Training*, Vol. 59
52 No 7/8, pp. 689-705.
53

54
55 Kirkwood, J., Dwyer, K. and Gray, B. (2014), “Students’ reflections on the value of an
56 entrepreneurship education”, *International Journal of Management Education*, Vol. 12 No.
57 3, pp. 307–316.
58
59
60

1
2
3 Knight, R. A. and Botting, N. (2016), “Organising undergraduate research projects:
4 student-led and academic-led models”, *Journal of Applied Research in Higher*
5 *Education*, Vol. 8 No. 4, pp. 455-468.

6
7
8 Kuratko, D. F. (2005), “The emergence of entrepreneurship education: Development,
9 trends, and challenges”, *Entrepreneurship Theory and Practice*, Vol. 29 No. 5, pp. 577-
10 597.

11
12 Löbler, H. (2006), “Learning entrepreneurship from a constructivist perspective”,
13 *Technology Analysis & Strategic Management*, Vol. 18 No. 1, pp. 19–38.

14
15
16 McMurray, I., Rafferty, C., Sutton, C. and Patel, S. (2017), “Using dissertation projects to
17 facilitate transitions to university and employment: an exploratory case study”, *Journal of*
18 *Further and Higher Education*, Vol. 41 No. 3, pp. 273-285.

19 Malcolm, M. (2012), “Examining the implications of learner and supervisor perceptions of
20 undergraduate dissertation research in business and management”, *Teaching in Higher*
21 *Education*, Vol. 17 No. 5, pp. 565-576.

22
23
24 Mann, H.B. and Whitney, D.R. (1947), “On a test of whether one of two random variables
25 is stochastically larger than the other”, *Annals of Mathematical Statistics*, Vol. 18, pp. 50-
26 60.

27
28
29 Marzocchi, C., Kitagawa, F. and Sánchez-Barrioluengo, M. (2018), “Evolving missions
30 and university entrepreneurship: academic spin-offs and graduate start-ups in the
31 entrepreneurial society”, *The Journal of Technology Transfer*, pp. 1-22.

32
33
34 Mason, J. and Siqueira, A. C. O. (2014), “Addressing the challenges of future
35 entrepreneurship education: an assessment of textbooks for teaching entrepreneurship”,
36 in *Innovative pathways for university entrepreneurship in the 21st century*, Vol. 24, pp. 41-
37 64, Emerald Group Publishing Limited.

38
39
40 Mateo, J., Escofet, A., Martínez -Olmo, F., Ventura, J. and Vlachopoulos, D. (2012a),
41 “Evaluation Tools in the European Higher Education Area (EHEA): an assessment for
42 evaluating the competences of the Final Year Project in the social sciences”, *European*
43 *Journal of Education*, Vol. 47 No. 3, pp. 435-447.

44
45
46 Mateo, J., Escofet, A., Martínez, F., Ventura, J. and Vlachopoulos, D. (2012b), “The Final
47 Year Project (FYP) in social sciences: Establishment of its associated competences and
48 evaluation standards”, *Studies in Educational Evaluation*, Vol. 38 No. 1, pp. 28-34.

49
50
51 Matlay, H. (2017), “Entrepreneurial Learning: New Perspectives in Research, Education
52 and Practice”, *Education+Training*, Vol. 59 No. 7/8, pp. 907-912.

53
54
55 McLean, M., Abbas, A. and Ashwin, P. (2017), *Quality in Undergraduate Education: How*
56 *Powerful Knowledge Disrupts Inequality*, Bloomsbury Publishing.

1
2
3 Nabi, G., Liñán, F., Fayolle, A., Krueger, N. and Walmsley, A. (2017), “The impact of
4 entrepreneurship education in higher education: A systematic review and research
5 agenda”, *Academy of Management Learning & Education*, Vol. 16 No. 2, pp. 277-299.

6
7
8 Pathirage, C., Haigh, R., Amaratunga, D. and Baldry, D. (2007), “Enhancing the quality
9 and consistency of undergraduate dissertation assessment: A case study, *Quality Assurance
10 in Education*, Vol. 15 No. 3, pp. 271-286.

11
12 Parsons, T. and Knight, P.G. (2015), *How to do your dissertation in geography and related
13 disciplines*, Routledge, London.

14
15
16 Pepper, D., Webster, F. and Jenkins, A. (2001), “Benchmarking in Geography: Some
17 implications for assessing dissertations in the undergraduate curriculum”, *Journal of
18 Geography in Higher Education*, Vol. 25 No. 1, pp. 23-35.

19
20
21 Rae, D. and Wang, C. L. (Eds.). (2015). *Entrepreneurial learning: New perspectives in
22 research, education and practice*. Routledge, New York.

23
24
25 Rand, J. (2016), “Researching undergraduate social science research”, *Teaching in Higher
26 Education*, Vol. 21 No. 7, pp. 773-789.

27
28
29 Refai, D., Klapper, R. G. and Thompson, J. (2015), “economic and financial dossier”,
30 *International Journal of Entrepreneurial Behavior & Research*, Vol. 21 No. 3, pp. 316-337.

31
32
33 Reguant, M., Martínez-Olmo, F. and Contreras-Higuera, W. (2018), “Supervisors’
34 perceptions of research competencies in the final-year project”, *Educational Research*, Vol.
35 60 No. 1, pp. 113-129.

36
37
38 Rich, M. (2010), “Embedding reflective practice in undergraduate business and
39 management dissertations”, *International Journal of Management Education*, Vol. 9 No. 1,
40 pp. 57-66.

41
42
43 Rideout, E. C. and Gray, D. O. (2013), “Does entrepreneurship education really work? A
44 review and methodological critique of the empirical literature on the effects of university
45 based entrepreneurship education”, *Journal of Small Business Management*, Vol. 51 No. 3,
46 pp. 329-351.

47
48
49 Roberts, L. D. and Seaman, K. (2018), “Good undergraduate dissertation supervision:
50 perspectives of supervisors and dissertation coordinators”, *International Journal for
51 Academic Development*, Vol. 23 No. 1, pp. 28-40.

52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

1
2
3 Royal Decree 861/2010 (2010), of July 2, which modifies the royal decree 1393/2007, of
4 October 29, which establishes the organization of official university education, State
5 Official Newsletter, July 3, 2010, 161, pp. 58.454-58.468.

6 Rowley, J. and Slack, F. (2004), "What is the future for undergraduate dissertations?",
7 *Education + Training*, Vol. 46 No. 4, pp. 176-181.
8
9

10 Sánchez-Fernández, P. (2013), "Trabajo Fin de Grado en Administración y Dirección de
11 Empresas (ADE): De la teoría a la experiencia de la Facultad de CC. Empresariales y
12 Turismo del campus de Ourense, Universidad de Vigo" [Undergraduate Dissertation in
13 Business Administration and Management (ADE): From the theory to the experience of the
14 Faculty of CC. Business and Tourism of the Ourense campus, Vigo University], *Revista de*
15 *Docencia Universitaria*, Vol. 11 No. 3, pp. 461-481.
16
17

18 Saunders, M. and Davis, S., (1998), "The use of assessment criteria to ensure consistency
19 of marking", *Quality Assurance in Education*, Vol. 6 No. 3, pp. 162-171.
20
21

22 Serrano-Gallardo, P., Martínez-Martín, M. L. and Martínez-Marcos, M. (2017), "Factores
23 que determinan la evaluación del trabajo fin de grado. Un análisis multinivel" [Factors that
24 determine the evaluation of Undergraduate Dissertation. A multilevel Analysis],
25 *Educación Médica*, In press. <https://doi.org/10.1016/j.edumed.2017.05.001>.
26
27

28 Shadforth, T. and Harvey, B. (2004), "The undergraduate dissertation: Subject-centred or
29 student-centred", *Electronic Journal of Business Research Methods*, Vol. 2 No. 2, pp. 145-
30 152.
31

32 Shepherd, D. A. (2004), "Educating entrepreneurship students about emotion and learning
33 from failure", *Academy of Management Learning and Education*, Vol.3 No. 3, pp.274-287.
34
35

36 Smith, S., Smith, C., Taylor-Smith, E. and Fotheringham, J. (2017), "Towards graduate
37 employment: exploring student identity through a university-wide employability project",
38 *Journal of Further and Higher Education*, Vol. 23, pp. 1-13.
39

40 Snavely, L.L. and Wright, C.A. (2003), "Research portfolio use in undergraduate honors
41 education: Assessment tool and model for future work", *The Journal of Academic*
42 *Librarianship*, Vol. 29 No. 5, pp. 298-303.
43
44

45 Solomon, G. T. and Fernald Jr, L. W. (1991), "Trends in small business management and
46 entrepreneurship education in the United States", *Entrepreneurship Theory and*
47 *Practice*, Vol. 15 No. 3, pp. 25-40.
48

49 Solomon, G. T., Weaver, K. M., and Fernald, L.W. (1994), "Pedagogical methods of
50 teaching entrepreneurship: a historical perspective", *Gaming and Simulation*, Vol. 25 No. 3,
51 pp. 67-79.
52
53
54
55
56
57
58
59
60

1
2
3 Stefani, L. A. J., Tariq, V. N., Heylings, D. J. A. and Butcher, A. C. (1997), "A comparison
4 of tutor and student conceptions of undergraduate research project work", *Assessment &*
5 *Evaluation in Higher Education*, Vol. 22 No. 3, pp. 271-288.

7
8 Todd, M., Bannister, P. and Clegg, S. (2004), "Independent inquiry and the undergraduate
9 dissertation: perceptions and experiences of final-year social science students", *Assessment*
10 *& Evaluation in Higher Education*, Vol. 29 No. 3, pp. 335-355.

12
13 Todd, M. J., Smith, K. and Bannister, P. (2006), "Supervising a social science
14 undergraduate dissertation: staff experiences and perceptions", *Teaching in Higher*
15 *Education*, Vol. 11 No. 2, pp. 161-173.

16 Tounés, A. Lassas-Clerc, N. and Fayolle, A. (2014), "Perceived entrepreneurial
17 competences tested by business plan pedagogies", *International Journal of*
18 *Entrepreneurship and Small Business*, Vol. 21 No. 4, pp. 541-557.

20
21 Universidad Europea, (2018), *Hub Emprende*, (Accesed: 21-09-2018), Available in
22 <https://alumni.universidadeuropea.es/desarrollo-profesional/entrepreneurship>.

23
24 Vera, J. and Briones, E. (2015), "Students' perspectives on the processes of supervision
25 and assessment of undergraduate dissertations", *Culture and Education*, Vol. 27 No. 4, pp.
26 726-765.

28
29 Volkmann, C. K. and Audretsch, D. B. (2017), "Introduction: The Mandate for
30 Entrepreneurship Education", In *Entrepreneurship Education at Universities*, Vol. 37, pp.
31 1-10, Springer, Cham.

32
33 Webster, F., Pepper, D. and Jenkins, A. (2000), "Assessing the undergraduate dissertation",
34 *Assessment & Evaluation in Higher Education*, Vol. 25 no. 1, pp. 71-80.

35
36
37 Weber, R. (2012), *Evaluating Entrepreneurship Education*. Springer Fachmedien
38 Wiesbaden, Munich.

39
40 Wenger, K. (2014), "Problem-based learning and information literacy: a natural
41 partnership", *Pennsylvania Libraries: Research and Practice*, Vol. 2 No. 2, pp. 142-154.

42 Wright, M., Siegel, D. S. and Mustar, P. (2017), "An emerging ecosystem for student start-
43 ups", *The Journal of Technology Transfer*, Vol. 42 No. 4, pp. 909-922.

44
45
46 Wilcoxon, F. (1945), "Individual comparisons by ranking methods", *Biometrics*, Vol. 1, pp.
47 80-83.

48
49
50 Wood, L. N. and Breyer, Y. A. (2017), "Success in Higher Education", in *Success in*
51 *Higher Education*, pp. 1-19, Springer, Singapore.