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The International Journal of Management Education

journal homepage: www.elsevier.com/locate/ijmeTurning teachers into entrepreneurship role models: Development of a measurement scale of useful characteristics[☆]Paula San-Martín^{*}, Andrea Pérez, Ana Fernández-Laviada*Business Administration Department, Universidad de Cantabria, Avda. Los Castros s/n, 39005, Santander (Cantabria), Spain*

ARTICLE INFO

Keywords:

Entrepreneurship
 Role model
 Teacher
 Teacher characteristics
 Scale development

ABSTRACT

The circumstances under which students consider their teachers of entrepreneurship as role models have not received in-depth exploration in the literature. This paper focuses on determining the main personal, professional and pedagogical characteristics that would turn teachers of entrepreneurship into role models and thereby improve the entrepreneurial intentions of students. A three-step empirical research process combining documentary, qualitative and quantitative methods is developed in order to propose and test a measurement scale of teacher characteristics that is reliable, valid and useful for causal modelling. A total of 26 characteristics are identified and classified into personal, professional and pedagogical categories.

1. Introduction

Entrepreneurship plays an important role in improving any country's economic conditions, development and growth (Bosma et al. 2008; Stoica et al. 2020). This is the reason there is growing support for entrepreneurship in Europe and why entrepreneurship education is a crucial investment that any country on this continent has to make (European Commission 2013).

Entrepreneurship education plays a fundamental role in the development of an entrepreneurial mindset, as the quality of education is the most important intraschool factor affecting student intentions and motivations (European Commission, 2011). However, some issues remain underexplored, especially those concerning 'how to teach entrepreneurship' and 'who should teach it' (Bae et al. 2014; Fayolle, 2008; Fayolle & Gailly, 2015; Greene & Rice, 2007; Hindle, 2007; Ruskovaara, 2014; Wraae & Walmsley, 2020). In this study, we are interested in gaining an in-depth understanding of the teaching of entrepreneurship in order to propose a classification of the characteristics that a teacher must have to become a significant role model for students in the entrepreneurship field.

As far as the question of 'Who should teach entrepreneurship?' is concerned, it is commonly agreed that teachers play an essential role in transmitting knowledge, motivating students and developing their entrepreneurial skills (Birdthistle et al. 2007; Caseiro et al. 2014; European Commission, 2014; Neck & Greene, 2011; San-Martín et al., 2021a; 2021b). It is well known that the importance of teachers is increased by the possibility that students perceive them as role models (Ambrozy et al. 1997; Cruess et al. 2008; Elzubeir & Rizk, 2001; Sampermans & Claes, 2018; Wright et al. 1998). When perceived as role models, teachers of entrepreneurship can improve student intentions to be entrepreneurs in the future, as previous research strongly supports that role models have a large influence on others (Elzubeir & Rizk, 2001; Fellnhöfer, 2017a; 2017b; Krueger et al. 2000; Scherer et al. 1989; Van Auken et al. 2006).

Even though previous research indicates that teachers play an important role in entrepreneurship education (Birdthistle et al. 2007;

[☆] This work was supported by the Cátedra Pyme of the University of Cantabria (<http://www.catedrapyme.es>).

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<https://doi.org/10.1016/j.ijme.2022.100721>

Received 15 October 2020; Received in revised form 4 October 2022; Accepted 9 October 2022

Available online 4 November 2022

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Schuhmacher & Thieu, 2020; Seikkula-Leino et al. 2010), there are not enough studies to explain the fundamental characteristics that teachers of entrepreneurship must have to become role models for students. Some studies have been developed in other research areas, especially concerning the characteristics that are needed for a medical or nursing teacher to become a significant role model for students (Bazrafkan et al. 2019; Elzubeir & Rizk, 2001; Jochemsen-van der Leeuw et al. 2014; Wright, 1996; Yazigi et al. 2006). However, each profession has its specifications, which means that the requirements for a teacher of entrepreneurship may be notably different from the characteristics that are needed to be successful in transmitting knowledge and motivating students in other areas (Fayolle, 2013; Pertuz-Peralta et al. 2016). Therefore, further studies are needed in the specific research context of entrepreneurship education.

The main objective of this paper is to theoretically develop and empirically test a scale that allows researchers and practitioners to measure the characteristics that are closely related to a teacher of entrepreneurship being viewed as a role model. To do this, we first provide a review of the previous literature that has explored the role of teachers in entrepreneurship education. Next, a theoretical framework that classifies the characteristics that allow teachers to become role models for students is proposed. The methodology and the results of three studies implemented during the research are then explained. The purpose of the first study was to create a valid scale in terms of its content validity (study 1: scale generation). The aim of the second study was to prove its reliability and convergent and discriminant validity (study 2: scale testing). The last study serves to confirm that the scale can be adequately applied to causal modelling (study 3: scale application to causal modelling). The three studies are aimed at proposing a solid and reliable teacher characteristics scale that is tested for reliability, validity (i.e., content, convergent and discriminant) and applicability to structural equation modelling. Finally, the discussion and main conclusions of the study are addressed.

2. Teachers as entrepreneurship role models

2.1. The role model and its effects

In a social context, people know and identify with people who stand out in some areas in which they would also like to participate. It is through observations of these people that learning occurs (Bosma et al. 2012; Yeadon-Lee, 2018). Bandura (1977) states that role models who help people develop themselves by learning new tasks and skills are better able to capture people's attention (Bandura, 1977; Gibson, 2004; Wood & Bandura, 1989). More precisely, role models help people learn how to behave based on the observation and emulation of their behaviours (Brown & Treviño, 2014; Horsburgh & Ippolito, 2018). A role model is defined by Gibson (2004:136) as a 'cognitive construction based on the attributes of people in social roles an individual perceives to be similar to him or herself to some extent and desires to increase perceived similarity by emulating those attributes'. Gibson and Barron (2003) and Paice et al. (2002) found that people look to role models because they possess personal and professional skills that they also need to develop to achieve their own goals.

The role model construct has also become an important element in educational fields as a way to instil professional values, attitudes and behaviours in students (Boldureanu et al. 2020; Cheung, 2020; Paice et al. 2002). In this regard, researchers argue that students look at these models to develop their own self-concepts, increase their motivation and inspiration, and learn new job skills (Gibson, 2004; Gibson & Barron, 2003). For instance, role models have direct effects on student intentions to choose their professional careers (Elzubeir & Rizk, 2001; González-Pérez et al. 2020; Scherer et al. 1989; Van Auken et al. 2006).

According to many entrepreneurs, the influence of others encourages the decision to be an entrepreneur and to start a new business (Bolaños, 2006; Bosma et al. 2012; Scherer et al. 1989; Van Auken et al. 2006; Veciana, 2002). Therefore, it is generally agreed that role models influence student decisions to become entrepreneurs and to develop their business ideas further. Role models inspire others, especially future entrepreneurs, when the latter perceive role models to be highly similar to themselves (Byrne et al., 2019). For instance, role models shape personal expectations concerning results and self-efficacy to start a business which leads to increased intentions to pursue an entrepreneurship career (Lent et al. 1994). In this way, role models affect entrepreneurship intentions by changing attitudes and beliefs about the perceived ability of the person to succeed in starting and running a new business (Boldureanu et al. 2020; Davidsson, 1995; Krueger et al. 2000; Van Auken et al. 2006).

2.2. Who can become a role model

Who people consider as role models in their lives usually changes over time (Abbasiachavari & Moritz, 2021). At the beginning of our lives, our parents and siblings are the only models we have. Afterwards, our models change to other relatives and friends. When school starts, our role models are teachers or classmates. And when working life begins, the most frequent role models are bosses and co-workers (Bolaños, 2006). Along this line, the literature highlights that role models have a greater effect when people are between 18 and 21 years of age (Mungai & Velamuri, 2011), which is when many students are enrolled in university studies. Therefore, it is expected that teachers become some of the most significant role models for university students due to the frequent contact that exists between them in college (Birdthistle et al. 2007; Gibb, 2005; Hattie, 2008, 2015; Rahman & Day, 2014; Seikkula-Leino et al. 2010).

Observation of how another person behaves (vicarious experience) is a way to learn (Bandura, 1977). Furthermore, role models that embolden people's development usually captivate them (Gibson, 2004). This is the reason teachers can be considered important role models for students. Bandura (1977) argued that observational learning is governed by four processes that determine the influence a role model has on the individual, one of which is the attention process. He stated that individuals learn from a model only when they pay attention to or recognize the essential characteristics of the model's behaviour. Therefore, models that have interesting and attractive qualities are sought, while those that lack pleasant characteristics tend to be ignored or rejected even though they may excel

in other aspects.

While the literature has frequently considered that role models are notable individuals to whom people must look, another line of research suggests that role models should only be chosen based on the key attributes that they possess (Gibson, 2003; San-Martín et al., 2021a). Thus, the search for these role models represents a process of social comparison by which people tend to copy some appealing attributes and discard others that are not relevant to them (Gibson & Barron, 2003; Marx & Roman, 2002). In this way, a teacher who is a role model has characteristics that students desire and constantly exhibits them throughout the teaching period. The teacher's contact with students will encourage an increase in student desire to become entrepreneurs because the teacher, who has characteristics they desire, is constantly focusing them on creation of a company, awakening their motivation for this profession and increasing their skills and abilities to develop entrepreneurial work in a professional and successful way.

In spite of the support for the consideration of teachers as role models for students, few studies have focused on university teachers as role models, specifically in the entrepreneurship education research area (Bueckamn et al., 2018; San-Martín et al. 2021a). Therefore, further studies are needed along this line of inquiry (Bueckamn et al., 2018). In this study, we are interested in gaining an in-depth understanding of the teaching of entrepreneurship in order to propose a classification of the characteristics that a teacher must have to become a significant role model for students in the entrepreneurship field.

3. Teachers' characteristics: theoretical framework

Role models considered more attractive, basing the attractiveness on a series of characteristics that differentiate them from the rest of the people, capture more attention from the student (Brown & Treviño, 2014). In fact, Bandura (1977) argues that one of the processes that determines social learning is that individuals learn from another person only when they recognize the essential features of the model's behaviour. Therefore, they look for role models that possess interesting and attractive qualities, while those that lack pleasing characteristics tend to be ignored or rejected. This is the reason some researchers have focused on studying the characteristics that determine how a role model becomes attractive (Ambrozy et al. 1997; Cruess et al. 2008; Elzubeir & Rizk, 2001; San-Martín et al., 2021a; Wright et al. 1998). Several studies exist in different areas of knowledge, such as medicine (Bazrafkan et al. 2019; Côté & Leclère, 2000; Cruess et al. 2008; Yazigi et al. 2006), nursing (Baldwin et al. 2014; Hayajneh, 2011; Klunklin et al. 2011; Nehring, 1990; Nouri et al. 2013), education (Lunenberg et al. 2007; Sanderse, 2013) and music (Hamann & Walker, 1993), which investigate how teachers can become role models (Baldwin et al. 2014; Cruess et al. 2008; Hamann & Walker, 1993; Sanderse, 2013).

Based on an extensive review of these previous studies, we have identified over fifty characteristics that have been considered in the literature to define teachers as role models. Among them, the most cited characteristics include being: a good communicator (Kyridis et al. 2014; Stronge & Hindman, 2003), motivational (Martínez García et al., 2006; Miller, 2012), sociable (Açıkgöz, 2005; Gargallo et al. 2010), a master of the subject (Liu & Meng, 2009; Wotruba & Wright, 1975), polite (Stronge & Hindman, 2003; Thompson et al. 2004), nice (Gallardo & Reyes, 2010; Orlando, 2013), comprehensive (Açıkgöz 2005; Gargallo et al. 2010), encouraging of student participation (Liu & Meng, 2009; Soriano & Aquino, 2017), adequately prepared (Miron & Segal, 1978; Thompson et al. 2004), responsible (Kyridis et al. 2014; Liu & Meng, 2009), dynamic (Miller, 2012; Soriano & Aquino, 2017), able to develop the thought processes of students (Gallardo & Reyes, 2010; Gargallo et al. 2010) and able to manage groups of students without difficulty (Orlando, 2013; Stronge & Hindman, 2003).

Table 1

Categories of Teacher's characteristics.

Categories	Definition	Authors
Personal characteristics	Attitudes and attributes related to the way of being and behaving in personal circumstances and that enable a deep, rich and effective relationship with others	Açıkgöz (2005); Bazrafkan et al. (2020); Canales (2004); Cruess et al. (2008); Elzubeir and Rizk (2001); Gargallo et al. (2010); Gallardo and Reyes (2010); Jochemsen-van der Leeuw et al. (2014); Kyridis et al. (2014); Martínez García et al., 2006; Miller (2012); Miron and Segal (1978); Mogan and Knox (1987); Soriano and Aquino (2017); Stronge and Hindman (2003); Van Lakerveld and Bauer (2015); Witcher and Onwuegbuzie (1999); Wotruba and Wright (1975); Wright (1996)
Professional (entrepreneurial) characteristics	Characteristics that allow the completion of working tasks responsibly and competently	Açıkgöz (2005); Bazrafkan et al. (2020); Canales (2004); Cruess et al. (2008); Elzubeir and Rizk (2001); Gargallo et al. (2010); Jochemsen-van der Leeuw et al. (2014); Liu and Meng (2009); Martínez García et al., 2006; Mogan and Knox (1987); Soriano and Aquino (2017); Stronge and Hindman (2003); Van Lakerveld and Bauer (2015); Witcher and Onwuegbuzie (1999); Wright (1996)
Pedagogical characteristics	Set of skills and techniques to teach a class	Açıkgöz (2005); Bazrafkan et al. (2020); Canales (2004); Cruess et al. (2008); Elzubeir and Rizk. (2001); Gallardo and Reyes (2010); Gargallo et al. (2010); Jochemsen-van der Leeuw et al. (2014); Kyridis et al. (2014); Miron and Segal (1978); Mogan and Knox (1987); Soriano and Aquino (2017); Stronge and Hindman (2003); Van Lakerveld and Bauer (2015); Witcher and Onwuegbuzie (1999); Wotruba and Wright (1975); Wright (1996)

Source: elaborated by the authors

More than simply providing a long list of teacher’s characteristics, an interesting finding from the literature review is that previous researchers have tried to classify these characteristics into relevant categories in order to organise and understand them better. All these characteristics are frequently classified by researchers into three categories (Açıköz, 2005; Bazrafkan et al. 2019; Canales, 2004; Cruess et al. 2008; Elzubeir & Rizk, 2001; Gargallo et al. 2010; Witcher & Onwuegbuzie, 1999; Wright, 1996), namely (a) personal (that is, characteristics that refer to the human qualities of the teacher); (b) professional (that is, professional skills and technical qualities); and (c) pedagogical (that is, teaching methodology and pedagogical qualities; Table 1 and Fig. 1).

3.1. Personal characteristics

The adaptation of students to school environments as well as their academic learning and achievements are influenced by teachers’ personalities (Açıköz, 2005; Eilam & Vidergor, 2011; Eryilmaz, 2014; Polk, 2006; Thibodeau & Hillman, 2003). According to students, these qualities determine if a teacher is successful or not (Sherman & Blackburn, 1975). Kyridis et al. (2014) showed that in describing the ideal teacher, most students referred to their personal qualities (that is, he/she should be respectful, cheerful, approachable, patient, democratic and fair). Therefore, who the teacher is and what he/she is like as a person defines the most essential determinant of attitudes towards learning for many students (Açıköz, 2005). This category thus presents the characteristics that measure attitudes and attributes related to the way of being and behaving in personal circumstances and that enable a deep, rich and effective relationship with others.

3.2. Professional (entrepreneurial) characteristics

Many characteristics proposed by previous researchers to consider a teacher as a role model relate to their professional position in the corresponding area that is taught (for example, being empathic with patients in the area of medicine). This fact brought us to think about the necessity of including an entrepreneur’s characteristics into the theoretical framework developed in this study. This proposal is reinforced by the idea put forth by the European Commission (2014) that teachers cannot teach how to be entrepreneurs without being entrepreneurs themselves. Otherwise, they could not become models of entrepreneurial thought. Van Lakerveld and Bauer (2015) also supported the idea that the teacher should be a model of entrepreneurial thinking (for example, showing initiative, taking advantage of opportunities, taking risks and accepting responsibilities). This is the reason that in this category, the set of knowledge and skills that directly and indirectly affect an entrepreneurs’ functions is considered. More precisely, by professional characteristics, we consider those traits that allow teachers to responsibly and competently carry out tasks related to entrepreneurship within the classroom.

3.3. Pedagogical characteristics

Each teacher has a particular way of teaching, and this specificity has different significant effects on the entire educational situation. Therefore, it is important that teachers demonstrate essential teaching skills (Adediwura & Tayo, 2007). Gallardo and Reyes (2010) considered that there must be some form of seduction in the teaching process and an active search to increase the interest of the student in the content of the class, and that teachers should use different elements that increase student interest towards learning. According to Muntaner-Mas et al. (2017), these specific teachers’ skills have a strong impact on a student’s academic emotional experiences. Specifically, they revealed that pedagogical characteristics had a strong positive effect on enjoyment and hope as well as a significant but negative minor effect on stress reduction. Adediwura and Tayo (2007) showed that student academic performance is related to how they perceive their teachers’ pedagogical skills. Therefore, essential pedagogical skills are required for effective teaching. The set of teaching skills and techniques used by teachers of entrepreneurship will thus be included in this category.

4. Method and results

To test the robustness of the theoretical framework described in this study, we developed an empirical research study that combines qualitative and quantitative methods in order to propose and validate a measurement scale that allows us to evaluate the characteristics of a teacher of entrepreneurship. Qualitative methods were used for the enunciation and refinement of the items included in the scale. Quantitative methods were used to test the properties of the scale and, therefore, corroborate the suggested structure of the

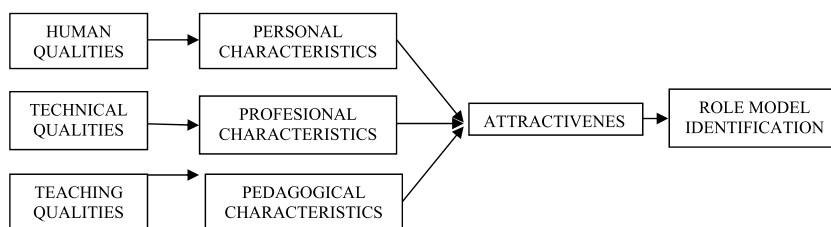


Fig. 1. Role Model Identification Process
 Source: elaborated by the authors.

teachers' characteristics.

We relied on the research structure proposed by [Barbarossa et al. \(2012\)](#), [Pérez and Rodríguez del Bosque \(2013\)](#) and [Silveyra et al. \(2021\)](#) in carrying out this study. These authors conducted a preliminary study to generate items based on their literature review and qualitative methods. They then presented a second study in which they analysed the reliability and validity of the scale. Finally, they applied the scale to causal modelling ([Fig. 2](#)).

To develop Study 1 for our purposes, [DeVellis \(2016\)](#), [Netemeyer et al. \(2003\)](#) and [Turker's \(2009\)](#) methodologies were used to create the scale. First, a set of statements to define indicators of personal, professional and pedagogical characteristics was produced. The aim of this step was to create a valid scale in terms of its content validity. We therefore combined three methodologies: (1) a review of the theoretical and empirical entrepreneurship and pedagogy literature to identify the dimensions of the scale along with reliable items formulated by previous scholars; (2) the conduct of three focus groups involving students, teachers and entrepreneurs to identify teacher characteristics which they considered most relevant in the entrepreneurship field; (3) the refinement of the items proposed for the scale by means of an independent revision and discussion by a set of selected teachers of entrepreneurship.

In Study 2, the scale was tested empirically to prove its reliability and convergent and discriminant validity. For this purpose, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were performed.

Finally, Study 3 was performed to confirm that the scale could be adequately applied to causal modelling ([Barbarossa et al. 2012](#); [Pérez & Rodríguez del Bosque, 2013](#)). More precisely, we chose a conceptual model that is well-grounded in the previous literature and then incorporated the variable 'teacher's characteristics' into the model. Structural equation modelling (SEM) was used to determine whether the scale fits well in the traditional model. As the basic conceptual model has been defended by previous scholars, we expected that the new proposal would be adequate in terms of goodness of fit. Otherwise, it would indicate that the new measurement scale could be problematic.

4.1. Study 1: scale generation

As a first step in the scale development process, we developed an initial pool of items based on the review of previous literature in the field. In this regard, previous literature indicated that the main personal characteristics of teachers included being: nice ([Açikgöz 2005](#); [Gargallo et al. 2010](#); [Grahn & Gustafsson, 1969](#); [Jochemsens-van der Leeuw et al. 2014](#); [Martínez García et al., 2006](#); [Orlando, 2013](#); [Witcher & Onwuegbuzie, 1999](#)), comprehensive ([Cruess et al. 2008](#); [Gargallo et al. 2010](#); [Grahn & Gustafsson, 1969](#); [Kyridis et al. 2014](#); [Thompson et al. 2004](#); [Witcher & Onwuegbuzie, 1999](#); [Wright, 1996](#)), polite ([Elzubeir & Rizk, 2001](#); [Gargallo et al. 2010](#); [Kyridis et al. 2014](#); [Liu & Meng, 2009](#); [Martínez García et al., 2006](#); [Orlando, 2013](#); [Stronge & Hindman, 2003](#); [Thompson et al. 2004](#)), responsible ([Canales, 2004](#); [European Commission, 2011](#); [European Commission, 2014](#); [Liu & Meng, 2009](#); [Martínez García et al., 2006](#); [Witcher & Onwuegbuzie, 1999](#)) and sociable ([Açikgöz 2005](#); [Canales, 2004](#); [Cruess et al. 2008](#); [Elzubeir & Rizk, 2001](#); [Gargallo et al. 2010](#); [Kyridis et al. 2014](#); [Liu & Meng, 2009](#); [Martínez García et al., 2006](#)).

The literature also placed importance on the need for a role model to have characteristics related to the profession itself. Some of the main characteristics in this regard that should be included in the category of professional characteristics in the entrepreneurship field are: independence ([Alemany et al. 2011](#); [Moriano et al. 2001](#); [Rauch & Frese, 2014](#)), the need for achievement ([Alemany et al. 2011](#); [Gürol & Atsan, 2006](#); [Korunka et al. 2003](#); [McClelland, 1961](#); [Rauch & Frese, 2014](#)), a locus of internal control ([Alemany et al. 2011](#); [Gürol & Atsan, 2006](#); [Korunka et al. 2003](#); [Moriano et al. 2001](#); [Rauch & Frese, 2014](#); [Sánchez, 2010](#)), self-confidence ([Alemany et al. 2011](#); [Markman & Baron, 2003](#); [Moriano et al. 2001](#)), the propensity to risk ([Alemany et al. 2011](#); [Gürol & Atsan, 2006](#); [Kihlstrom & Laffont, 1979](#); [Korunka et al. 2003](#); [Moriano et al. 2001](#); [Rauch & Frese, 2014](#); [Sánchez, 2010](#); [Zhao et al. 2010](#)), the recognition of opportunities ([Liñán, 2008](#); [Markman & Baron, 2003](#); [Roth et al. 2010](#); [Sánchez, 2010](#)), the resolution of problems ([Liñán, 2008](#)), the possession of social skills (networking) ([Liñán, 2008](#); [Markman & Baron, 2003](#)), leadership capacity ([Liñán, 2008](#)) and creativity ([Antoncic et al. 2014](#); [Liñán, 2008](#)).

Finally, within this category of teachers' traits, previous literature indicated that some of the main pedagogical characteristics to become role models should include: being a good communicator ([Adediwura & Tayo, 2007](#); [Elzubeir & Rizk, 2001](#); [Gallardo & Reyes, 2010](#); [Kyridis et al. 2014](#); [Stronge & Hindman, 2003](#); [Wotruba & Wright, 1975](#); [Wright, 1996](#)), the ability to manage the group without difficulty ([Açikgöz 2005](#); [Gallardo & Reyes, 2010](#); [Liu & Meng, 2009](#); [Orlando, 2013](#); [Stronge & Hindman, 2003](#); [Thompson et al. 2004](#)), developing the thought process of students ([Gallardo & Reyes, 2010](#); [Gargallo et al. 2010](#); [Miron & Segal, 1978](#); [Mogan & Knox,](#)

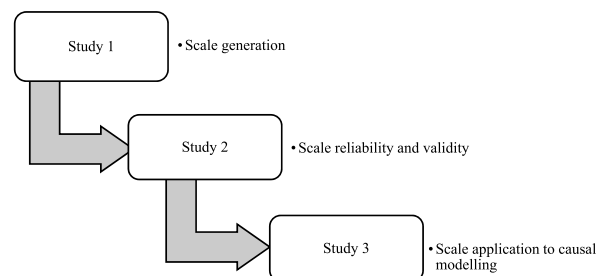


Fig. 2. Steps to Propose and Validate a Measurement Scale

Source: elaborated by the authors.

1987; Soriano & Aquino, 2017; Wotruba & Wright, 1975), being dynamic (Açıkgöz 2005), possessing mastery of the subject (Miller, 2012; Stronge & Hindman, 2003; Witcher & Onwuegbuzie, 1999; Wotruba & Wright, 1975), encouraging student participation (Açıkgöz 2005; Gallardo & Reyes, 2010; Gargallo et al. 2010; Liu & Meng, 2009; Soriano & Aquino, 2017; Wotruba & Wright, 1975), being motivational (Canales, 2004; European Commission, 2014; Gargallo et al. 2010; Miron & Segal, 1978; Thompson et al. 2004; Van Lakerveld & Bauer, 2015; Wotruba & Wright, 1975) and preparing sessions adequately (Gallardo & Reyes, 2010; Liu & Meng, 2009; Miron & Segal, 1978; Stronge & Hindman, 2003; Thompson et al. 2004; Wotruba & Wright, 1975).

Table 2

Pool of items after literature review and qualitative study.

Factors	Items	Authors	
Personal characteristics	(CPE1) Nice	Açıkgöz (2005); Gargallo et al. (2010); Grahn and Gustafsson (1969); Jochemsen-van der Leeuw et al. (2014); Martínez García et al., 2006; Orlando (2013); Witcher and Onwuegbuzie (1999)	
	(CPE2) Comprehensive	Cruess et al. (2008); Gargallo et al. (2010); Grahn and Gustafsson (1969); Kyridis et al. (2014); Thompson et al. (2004); Witcher and Onwuegbuzie (1999); Wright (1996)	
	(CPE3) Polite	Elzubeir and Rizk (2001); Gargallo et al. (2010); Kyridis et al. (2014); Liu and Meng (2009); Martínez García et al., 2006; Orlando (2013); Stronge and Hindman (2003); Thompson et al. (2004)	
	(CPE4) Responsible	Canales (2004); European Commission (2011); European Commission (2014); Liu and Meng (2009); Martínez García et al., 2006; Witcher and Onwuegbuzie (1999)	
	(CPE5) Sociable	Açıkgöz (2005); Canales (2004); Cruess et al. (2008); Elzubeir and Rizk (2001); Gargallo et al. (2010); Kyridis et al. (2014); Liu and Meng (2009); Martínez García et al., 2006	
	(CPE6) Emphatic	new item	
	(CPE7) Flexible	new item	
	Professional (entrepreneurial) characteristics	(CEN1) Creative	Antoncic et al. (2014); European Commission (2011); Kyridis et al. (2014); Liñán (2008); Miller (2012); Thompson et al. (2004); Van Lakerveld and Bauer (2015)
		(CEN2) Has leadership abilities	European Commission (2011); Liñán (2008); Orlando (2013).
		(CEN3) Demonstrates autonomy and the capability to develop his/her own ideas	Alemany et al. (2011); Moriano et al. (2001); Rauch and Frese (2014).
(CEN4) Committed to significant and challenging goals		Alemany et al. (2011); Gürol and Atsan (2006); Korunka et al. (2003); McClelland (1961); Rauch and Frese (2014).	
(CEN5) Perceives that his/her successes depend on him/herself, more than on external circumstances		Alemany et al. (2011); Gürol and Atsan (2006); Korunka et al. (2003); Kotzabassaki et al. (1997); Mogan and Knox (1987); Moriano et al. (2001); Rauch and Frese (2014); Sánchez (2010); Soriano and Aquino (2017).	
(CEN6) Confident		Alemany et al. (2011); European Commission (2011); European Commission (2014); Markman and Baron (2003); Moriano et al. (2001)	
(CEN7) Risk-taking		Alemany et al. (2011); European Commission (2014); Gürol and Atsan (2006); Kihlstrom and Laffont (1979); Korunka et al. (2003); Moriano et al. (2001); Rauch and Frese (2014); Sánchez (2010); Van Lakerveld and Bauer (2015); Zhao et al. (2010)	
(CEN8) Easily identifies new business opportunities		Liñán (2008); Markman and Baron (2003); Roth et al. (2010); Sánchez (2010); Van Lakerveld and Bauer (2015)	
Pedagogical characteristics	(CEN9) Properly resolves problems	Liñán (2008)	
	(CEN10) Is good at establishing contact and interacting with other people	European Commission (2011); European Commission (2014); Liñán (2008); Markman and Baron (2003); Orlando (2013)	
	(CPG1) Dynamic	Açıkgöz (2005)	
	(CPG2) Good communicator	Adediwura and Tayo (2007); Elzubeir and Rizk (2001); Gallardo and Reyes (2010); Kyridis et al. (2014); Stronge and Hindman (2003); Wotruba and Wright (1975); Wright (1996)	
	(CPG3) Motivational	Canales (2004); European Commission (2014); Gargallo et al. (2010); Miron and Segal (1978); Thompson et al. (2004); Van Lakerveld and Bauer (2015); Wotruba and Wright (1975)	
	(CPG4) Manages the group without difficulty	Açıkgöz (2005); Gallardo and Reyes (2010); Liu and Meng (2009); Orlando (2013); Stronge and Hindman (2003); Thompson et al. (2004)	
	(CPG5) Encourages student participation	Açıkgöz (2005); Gallardo and Reyes (2010); Gargallo et al. (2010); Liu and Meng (2009); Soriano and Aquino (2017); Wotruba and Wright (1975)	
	(CPG6) Possesses the needed knowledge	Miller (2012); Stronge and Hindman (2003); Witcher and Onwuegbuzie (1999); Wotruba and Wright (1975)	
	(CPG7) Adequately prepares sessions	Gallardo and Reyes (2010); Liu and Meng (2009); Miron and Segal (1978); Stronge and Hindman (2003); Thompson et al. (2004); Wotruba and Wright (1975)	
	(CPG8) Uses different methodologies	new item	
	(CPG9) Helps students think for themselves	Gallardo and Reyes (2010); Gargallo et al. (2010); Miron and Segal (1978); Mogan and Knox (1987); Soriano and Aquino (2017); Wotruba and Wright (1975)	

Source: elaborated by the authors

In the second step of the scale development process, a qualitative study was implemented which contributed the opinions of three relevant groups (students, teachers and entrepreneurs) related to teachers of entrepreneurship and role models. Taking into account the contributions made by the three groups, a list of the 10 most important characteristics necessary for a teacher of entrepreneurship to become a role model was obtained. This list largely coincided with the main characteristics theoretically raised, although three new attributes had to be added to the initial pool of items based on the focus groups.

Table 2 summarises the items retained for the scale after completion of the qualitative stage of the study. As is shown in Table 2, seven items (CPE1 to CPE7) were proposed to measure the personal characteristics of the teachers of entrepreneurship. While five items were directly taken from previous literature, two new items were consistently added to the list by the three focus groups. These items included the teacher's (CPE6) empathy and (CPE7) his/her flexibility in dealing with students. Also, 10 items (CEN1 to CEN10) were defined to measure the professional characteristics of the teacher of entrepreneurship, and these were closely related to the teacher's entrepreneurial characteristics. Finally, nine items (CPG1 to CPG9) were proposed to measure the pedagogical characteristics of the teacher of entrepreneurship. In this category, eight items were taken from previous literature and one additional item (CPG8; 'the teacher uses different methodologies') was proposed after exploring the findings of the qualitative study.

In a third step, the pool of items shown in Table 2 was sent to six experts to validate its content validity. They conducted a critical evaluation of whether or not the items in the questionnaire accurately summarised the characteristics identified in the literature review and the qualitative study. They also analysed whether or not all of the items in the questionnaire were written correctly and clearly and if they were relevant enough to be included in the questionnaire. This process allowed debugging and closing the measurement scale to be used. More precisely, the six experts agreed that all the sentences were understandable and they showed no concern regarding their content.

4.2. Study 2: scale testing

Data was collected from 670 undergraduate students in Spain. The survey was initially directed to all the students in a transversal entrepreneurship course offered in several bachelor's degrees at the University of Granada (Spain) during the first term of the 2017/2018 and 2018/2019 academic year. Data was collected through a questionnaire that was administered to the students after completion of the course. Information was collected for the 12 teachers who taught the course. The students rated each item based on the sentence 'My teacher of entrepreneurship is ...'. Seven-point Likert-type scales (1 = total disagreement; 7 = total agreement) were used to measure the items. Table 3 shows the profile of the sample.

To avoid problems related to common method variance (CMV) bias, the questionnaire guaranteed anonymity in the responses and clearly indicated that there were no right or wrong answers. By doing so, we tried to reduce student fear related to participation and make them less inclined to respond in a 'socially desirable' way (Chang et al. 2010).

We also conducted the Harman's single-factor test to check CMV (Chang et al., 2010). Harman's single factor test explains about 47.475% of the variance of the model. Because this percentage is below the threshold suggested in the literature (50%), the test confirmed that CMV was not a problem in this research.

Thereafter, the first step to test the psychometric properties of the scale consisted of the implementation of an EFA analysis using Varimax rotation with the statistical software IBM-SPSS v.24. The purpose of this step was to explore the factor structure of the scale and the item composition of each factor. The findings are shown in Table 4.

The EFA resulted in the identification of three factors that accounted for 69.894% of the total variance in the sample. All the items included in these three factors presented loading values over the advisable 0.500 (Hair et al. 2021). Factor 1 referred to the personal characteristics of the teacher, including seven items (CPE1 to CPE7). Factor 2 was composed of eight items (CEN3 to CEN10), which included all the professional characteristics of the teacher of entrepreneurship identified in the previous phases of the study. Nonetheless, two items (that is, [CNE1]: 'the teacher is creative'; and [CNE2]: 'the teacher has leadership abilities') did not load in this factor as had been theoretically suggested, and they had to be relocated within the scale. More precisely, both items had been theoretically classified as professional characteristics of the teacher of entrepreneurship. However, the findings of the EFA suggested that both items were more related to the pedagogical characteristics of the teacher as they loaded onto this factor more strongly. Therefore, Factor 3 was composed of 11 items (CEN1 to CEN2 and CPG1 to CPG9) related to pedagogical characteristics.

All in all, the adequacy of the three theoretical factors suggested in this paper was demonstrated, although the relocation of some items was necessary. Based on these findings, we proceeded to the next steps of the validation procedure taking into account the

Table 3
Description of the sample.

<u>Gender</u>				<u>Entrepreneurs in the family</u>			
Male		42.9		Yes		41.1	%
Female		57.1		No		58.9	
<u>Teacher</u>				<u>Bachelor's degree</u>			
1 (ANP)	5.2	7 (LRZ)	19.9	Business		25.4	%
2 (ARM)	11.3	8 (MHD)	3.9	Economics		13.3	
3 (CMO)	9.4	9 (MFF)	7.2	Accounting and Finance		20.9	
4 (ERF)	9.4	10 (MGL)	10.9	Tourism		20.3	
5 (GPR)	4.3	11 (RPC)	11.6	Marketing and Market Research		20.1	
6 (JMC)	2.8	12 (SGH)	4.0				

Table 4
Exploratory factor analysis.

Items	Factors		
	Factor 1 (Personal Characteristics)	Factor 2 (Professional Characteristics)	Factor 3 (Pedagogical Characteristics)
CPE1	0.779	0.274	0.299
CPE2	0.815	0.214	0.310
CPE3	0.720	0.320	0.272
CPE4	0.622	0.283	0.461
CPE5	0.738	0.266	0.318
CPE6	0.669	0.289	0.450
CPE7	0.574	0.181	0.496
CEN1	0.382	0.276	0.726
CEN2	0.353	0.442	0.578
CEN3	0.256	0.759	0.298
CEN4	0.167	0.731	0.418
CEN5	0.071	0.700	0.305
CEN6	0.345	0.722	0.065
CEN7	0.195	0.770	0.343
CEN8	0.304	0.743	0.313
CEN9	0.405	0.672	0.355
CEN10	0.420	0.642	0.292
CPG1	0.363	0.280	0.753
CPG2	0.441	0.341	0.676
CPG3	0.432	0.263	0.666
CPG4	0.378	0.465	0.514
CPG5	0.302	0.366	0.640
CPG6	0.416	0.382	0.581
CPG7	0.326	0.277	0.685
CPG8	0.209	0.288	0.748
CPG9	0.248	0.429	0.641
% Variance	25.340	23.063	21.491
% Total			69.894
Cronbach's α	0.930	0.933	0.952
# items	7	8	11

Bartlett's sphericity test $\chi^2(325) = 15,647.98$ ($p = 0.000$).

KMO index = 0.973.

Cronbach's α (26 items) = 0.972.

structure of three factors and the new distribution of items identified in the EFA.

In a second step, we applied the maximum robust likelihood estimation procedure to a CFA analysis with the software EQS v.6.1. The analysis allowed the corroboration of the reliability and convergent validity of the scale (Table 5) along with the discriminant validity among its three factors (Table 6). The reliability of the three factors that composed the scale was tested through Cronbach's alpha (α), composite reliability (CR) and the average variance extracted (AVE) (Table 5). These parameters were above 0.700, 0.700 and 0.500, respectively, for each factor (Hair et al. 2021), which confirmed the internal reliability of the proposed factors. All the items were significant (95% confidence) and the standardised lambdas were above 0.500 (Steenkamp & van Trijp, 1991), which confirmed the convergent validity of each factor.

The goodness-of-fit indexes also indicated that the scale was correctly specified. We used two types of fit criteria, namely measures of absolute and incremental fit (Hair et al. 2021). Bentler-Bonett Normed Fit Index (NFI), Bentler-Bonett Non-Normed Fit Index (NNFI), and Root Mean Square Error of Approximation (RMSEA) were used to test overall (that is, absolute) model fit. Incremental Fit Index (IFI) and Comparative Fit Index (CFI) were used to test incremental fit. The findings confirmed that the NFI, NNFI, CFI and IFI statistics exceeded or were close to 0.900. RMSEA was also below the maximum limit of 0.080 (Hair et al. 2021).

Discriminant validity (Table 6) was tested following Anderson and Gerbing's (1988) procedure. Students who were asked to evaluate their teachers in numerous items might find it difficult to perfectly isolate each teacher's characteristics and find clear differences among all of them. This could be the main reason the correlation coefficients among the three variables may have been relatively high in our study. However, the application of Anderson and Gerbing's (1988) discriminant validity test showed that none of the confidence intervals for the correlation between factors contained the value 1, proving that the constructs were still understood as different variables by students in our sample (there is discriminant validity). Therefore, it was confirmed that the proposed structure of three factors was adequate to measure the characteristics of the teacher of entrepreneurship.

In a third and final step, a second-order CFA was estimated to corroborate the factorial structure underlying the scale (Table 7).

The findings of this estimation included the standardised loadings for each factor on the second-order construct that represented the teacher's characteristics, the statistical significance of each effect and the variance of each factor explained by the second-order construct (R^2). The goodness-of-fit indexes supported the factorial structure (NFI = 0.878, NNFI = 0.914, CFI = 0.924, IFI = 0.924, RMSEA = 0.046). Therefore, the findings of the study corroborated that the characteristics of a teacher of entrepreneurship can be

Table 5
First-order confirmatory factor analysis.

Factors	Items	λ	R ²	α	CR	AVE				
Personal characteristics	CPE1	0.817	0.668	0.930	0.930	0.656				
	CPE2	0.834	0.695							
	CPE3	0.790	0.624							
	CPE4	0.815	0.664							
	CPE5	0.806	0.650							
	CPE6	0.852	0.727							
	CPE7	0.752	0.565							
Professional (entrepreneurial) characteristics	CEN3	0.805	0.649	0.930	0.930	0.633				
	CEN4	0.798	0.636							
	CEN5	0.687	0.472							
	CEN6	0.701	0.492							
	CEN7	0.831	0.690							
	CEN8	0.858	0.735							
	CEN9	0.865	0.747							
	CEN10	0.802	0.643							
	Pedagogical characteristics	CEN1	0.823				0.678	0.952	0.952	0.644
		CEN2	0.805				0.648			
CPG1		0.842	0.709							
CPG2		0.876	0.767							
CPG3		0.813	0.662							
CPG4		0.782	0.611							
CPG5		0.778	0.606							
CPG6		0.801	0.642							
CPG7		0.771	0.594							
CPG8		0.754	0.568							
CPG9	0.777	0.603								

Goodness of fit: $S\text{-}B\chi^2(293) = 770.579(p < 0.05)$; NFI = 0.867; NNFI = 0.903; CFI = 0.912; IFI = 0.913; RMSEA = 0.049.

Table 6
Discriminant validity.

	Personal Characteristics	Professional (Entrepreneurial) Characteristics	Pedagogical Characteristics
Personal characteristics	–	0.771 (0.028)	0.887 (0.016)
Professional (entrepreneurial) characteristics	[0.715–0.827]	–	0.843 (0.022)
Pedagogical characteristics	[0.855–0.919]	[0.799–0.887]	–

Cells over the diagonal show the correlation between pairs of factors along with the standard error (in brackets). Cells below the diagonal show the confidence intervals for the correlation between pairs of factors.

Table 7
Second-order confirmatory factor analysis.

Factors	λ	R ²
Personal characteristics	0.901*	0.812
Professional (entrepreneurial) characteristics	0.856*	0.733
Pedagogical characteristics	0.985*	0.969

* p-value < 0.05.

Goodness of fit: $S\text{-}B\chi^2(289) = 704.685(p < 0.05)$; NFI = 0.878; NNFI = 0.914; CFI = 0.924; IFI = 0.924; RMSEA = 0.046.

adequately evaluated according to a three-factor structure that measures personal, professional (entrepreneurial) and pedagogical characteristics.

4.3. Study 3: scale application to causal modelling

To confirm the efficiency of the scale, we performed one last study oriented to test the applicability of the new scale to one of the most common methodologies implemented in intention research: structural equation modelling (SEM). For this purpose, we chose the theory of planned behaviour (Engle et al. 2010; Fayolle et al. 2006; Gird & Bagraim, 2008; Kautonen et al. 2015; Rueda et al. 2015; Schlaegel & Koenig, 2014; Shook & Bratianu, 2010; Van Gelderen et al. 2008). This theory states that the intention of a behaviour is shaped by the attitude towards that behaviour, subjective norm and perceived behavioural control (Ajzen, 1991). Attitude can be described as the degree to which a person has a favourable assessment towards entrepreneurship. Perceived behavioural control reflects perceptions of the ease of being an entrepreneur. Subjective norm refers to the perceived social pressure towards creating a new

business. The subjective norm is the most questioned variable of the intentions model since previous studies have shown contradictory results (Joensuu-Salo et al. 2015; Karimi et al. 2017; Liñán & Chen, 2009; Santos et al. 2016). Several studies have suggested that this variable does not have a direct effect on intention but instead shows an indirect effect mediated by the attitude towards behaviour and the perceived control of behaviour (Liñán, 2008; Liñán et al. 2011, 2013). The subjective norm is thus a way of ‘channelling’ the influence of the closer environments on personal perceptions (attitude and perceived control of behaviour) (Ferreira et al. 2012; Liñán et al. 2011; Santos et al. 2016).

A new mediating variable that reflected student perceptions of the teacher as a role model (role model identification) was also included in the model to connect the scale tested in Study 1 and Study 2 with this well-known conceptual model proposed by the theory of planned behaviour. This variable is included because previous research strongly supports the idea of the influence of role models on others, the importance they have in improving learning and the way in which they influence the intention to choose the professional path of students (Elzubeir & Rizk, 2001; San-Martín et al., 2021a; Scherer et al., 1989). Specifically, Van Auken et al. (2006) explain how the behaviour of role models affect both the individuals’ perceived desirability and feasibility (Krueger et al., 2000). Moreover, Laviolette et al. (2012) confirm that exposure to a role model can strengthen entrepreneurial self-efficacy and entrepreneurial intention. These authors determine that successful role models reinforce the feeling of identification and generate favourable attitudes towards the message, thus improving self-efficacy and entrepreneurial intention. In this regard, role models affect entrepreneurial intentions by changing attitudes and perceived behavioural control (Krueger et al., 2000; Van Auken et al., 2006). Besides, subjective norm in entrepreneurial contexts has been related to the encouragement one thinks s/he may (or may not) receive from one’s close circle of friends, family or teachers when engaging in an entrepreneurial venture and the importance s/he places on this encouragement (Boissin et al., 2011). Thus, knowing role models is positively associated with the students’ subjective norms (Karimi et al., 2013). In fact, Karimi et al. (2013) conclude that role models positively influence subjective norms, attitude and perceived behavioural control. Fig. 3 shows the conceptual model which was tested in this study.

Tables 8 and 9 present the results of the CFA performed with the global model while Fig. 4 presents the results of the causal relationships that were tested in this study. As can be observed in these tables, all the results are adequate. Therefore, the scale proposed in this study is applicable to causal modelling.

All the relationships were accepted (H1 to H8), which is in accordance with previous literature. The findings corroborate the theory of planned behaviour (Fayolle et al. 2007; Ferreira et al. 2012; Fini et al. 2012; Krueger et al. 2000; Lavelle, 2021; Liñán & Chen, 2009; Liñán et al., 2011, 2013; Lüthje & Franke, 2003; Miller et al. 2009; Moriano et al. 2012; Roy et al. 2017; Santos et al. 2016). A direct effect of the teacher characteristics on the identification of the teacher as a role model was also confirmed. As conceptually suggested, role model identification had a direct effect on attitudes, subjective norm and perceived behavioural control (Ambrozy et al. 1997; Bolaños, 2006; Bosma et al. 2012; Cruess et al. 2008; Elzubeir & Rizk, 2001; Karimi et al., 2013; Scherer et al. 1989; Van Auken et al. 2006; Veciana, 2002; Wright et al. 1998).

5. Conclusions

Our goal in this study was to gain an in-depth understanding of the teaching of entrepreneurship in order to propose a classification of the characteristics that a teacher must have to become a significant role model for students in the entrepreneurship field. In responding to this goal, the paper contributes to the literature by proposing a comprehensive theory-driven measurement scale to evaluate the most relevant personal, professional (entrepreneurial) and pedagogical characteristics that turn teachers of entrepreneurship into significant role models for their students. As the three empirical studies presented in the paper have demonstrated, the 26-item scale is robust and, thus, it can be defended as a valid tool to be incorporated in further structural and causal models that are aimed at studying the role of teachers in forming student entrepreneurial intentions.

The findings of the study have shown that, in the personal category, characteristics such as being nice, comprehensive, polite,

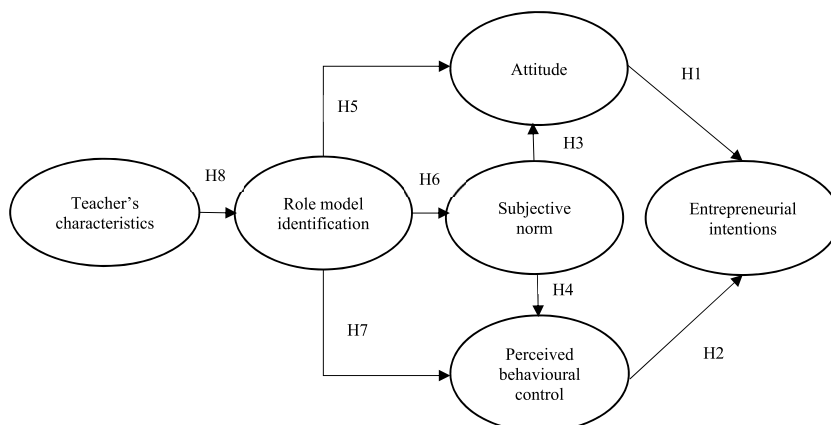


Fig. 3. Scale application to structural equation modelling.

Table 8
First-order confirmatory factor analysis (global model).

Factors	Items	λ	R ²	α	CR	AVE
Teacher's characteristics	PERSONAL	0.858	0.736	0.934	0.914	0.781
	PROFESSIONAL	0.841	0.707			
	PEDAGOGICAL	0.948	0.899			
Role model identification	RMID1	0.880	0.774	0.899	0.926	0.757
	RMID2	0.896	0.804			
	RMID3	0.831	0.691			
	RMID4	0.872	0.761			
Attitude	AC7	0.805	0.648	0.952	0.946	0.780
	AC8	0.919	0.845			
	AC9	0.885	0.784			
	AC10	0.891	0.794			
	AC11	0.910	0.827			
Subjective norm	NS1	0.851	0.724	0.928	0.919	0.792
	NS2	0.946	0.894			
	NS3	0.870	0.758			
Perceived behavioural control	SE1	0.801	0.642	0.917	0.906	0.620
	SE2	0.889	0.791			
	SE3	0.872	0.761			
	SE4	0.658	0.433			
	SE5	0.654	0.428			
	SE6	0.815	0.664			
Entrepreneurial intentions	IE15	0.848	0.719	0.968	0.967	0.832
	IE16	0.940	0.883			
	IE17	0.943	0.890			
	IE18	0.955	0.913			
	IE19	0.862	0.744			
	IE20	0.920	0.846			

Goodness of fit: $S\text{-}B\chi^2(308) = 963.001$ ($p < 0.05$); NFI = 0.936; NNFI = 0.949; CFI = 0.956; IFI = 0.956; RMSEA = 0.056.

Table 9
Discriminant validity (global model).

	TC	RMI	AT	SN	PBC	EI
TC	–	0.696 (0.044)	0.858 (0.026)	0.647 (0.042)	0.394 (0.046)	0.278 (0.049)
RMI	[0.608–0.784]	–	0.768 (0.036)	0.719 (0.035)	0.463 (0.044)	0.364 (0.049)
AT	[0.806–0.910]	[0.696–0.840]	–	0.771 (0.028)	0.435 (0.043)	0.326 (0.047)
SN	[0.563–0.731]	[0.649–0.789]	[0.715–0.827]	–	0.467 (0.044)	0.363 (0.053)
PBC	[0.302–0.486]	[0.375–0.551]	[0.349–0.521]	[0.379–0.555]	–	0.602 (0.039)
EI	[0.180–0.373]	[0.266–0.462]	[0.232–0.420]	[0.257–0.469]	[0.524–0.680]	–

TC = Teacher's characteristics; RMI = Role model identification; AT = Attitude; SN=Subjective norm; PBC= Perceived behavioural control; and EI = Entrepreneurial intentions.

Cells over the diagonal show the correlation between pairs of factors along with the standard error (in brackets). Cells below the diagonal show the confidence intervals for the correlation between pairs of factors.

responsible, sociable, emphatic and flexible are key for teachers to be successful. In the case of the professional category, the teacher should demonstrate autonomy and the capability to develop his/her own ideas, a commitment to significant and challenging goals, a perception that his/her successes depends on him/herself more than on external circumstances, confidence, risk-taking, the ability to easily identify new business opportunities, the ability to properly solve problems and be good at establishing contact and interacting with other people. Finally, the category of pedagogical characteristics includes being creative, dynamic and a good communicator and motivator; as well as having leadership abilities, the ability to manage a group without difficulty, the ability to encourage student participation, mastery of the subject, adequate preparation of the sessions, the use of different methodologies and the ability to help students think for themselves.

It must also be taken into account that 'being creative' and 'having leadership abilities' were initially classified as professional characteristics because they are characteristics that an entrepreneur must have to be considered good at his/her job. However, the results of the study show that in the evaluation of the teachers, these characteristics belong to the pedagogical group. This may be due to the fact that there are working areas in which these characteristics are not fundamental to carrying out the profession; however, they are essential for teaching. For example, a professional athlete does not need to be creative to develop his work (professional characteristics) but a physical education teacher should be creative to entertain students and involve them in class. In this regard, creativity in teaching must be improved to encourage student learning (Rinkevich, 2011). Teachers are also undertaking an important leadership role with regard to instructional and organisational issues (York-Barr & Duke, 2004). Wasley's (1991) research highlighted the high value of teachers in instructional leadership to improve student success, which can justify the classification of leadership abilities into the pedagogical category.

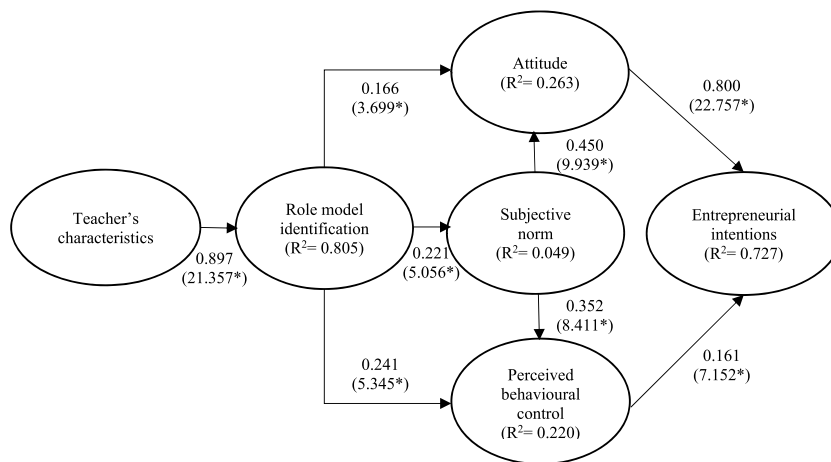


Fig. 4. Relationship Test

* p-value < 0.05.

The proposal and validation of a measurement scale of teacher characteristics has relevant implications both for future researchers and for academic institutions in charge of entrepreneurship educational programmes. On the one hand, it is expected that in the future, the proposed scale will allow researchers and institutions to evaluate the role of teachers in the success of entrepreneurship education through its incorporation into causal models that interrelate the characteristics of the teacher with variables related to the student, such as the development of entrepreneurial skills, perceived feasibility or entrepreneurial intentions. On the other hand, this study highlights a number of characteristics that allow the establishment of a suitable faculty profile for recruitment processes. In addition, knowing the attributes that students believe will turn teachers into role models allows the development of training courses that help teachers acquire or improve these characteristics.

Finally, some limitations of the study should be acknowledged and future studies should work along with them to improve the generalizability of the findings reported in this paper. In this regard, the main limitation of the study refers to the geographical context where the scale was developed and tested as it was only tested among Spanish undergraduate students. Nonetheless, the context of entrepreneurship education in this country might not be representative of numerous other countries in the world and, therefore, future studies should consider the possibility of replicating the study in other research contexts to improve the generalizability of the scale to other countries or educational levels. At a conceptual level, further work should also be carried out on the definition and refinement of the dimension of pedagogical characteristics because, as demonstrated in this paper, this dimension has been the most conflicted in the scale (for example, it was necessary to add two items that at a theoretical level had been classified as professional characteristics). Lastly, as previously mentioned, the subjective norm is the most questioned variable in the TPB model tested in this paper. Previous studies have verified the direct effect of the subjective norm on intention instead of measuring its indirect effect as we did in this paper. Therefore, we suggest that the direct relationship could be added in future works.

CRedit authorship contribution statement

Paula San-Martín: Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft. **Andrea Pérez:** Conceptualization, Methodology, Validation, Formal analysis, Data curation, Supervision. **Ana Fernández-Laviada:** Conceptualization, Resources, Visualization, Supervision, Project administration, Writing – review & editing.

Data availability

Data will be made available on request.

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