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Entrepreneurial skills to be successful in the global and digital world: Proposal for a frame of reference for entrepreneurial education

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Abstract: For most professionals to be successful in the current job market, they need some entrepreneurial skills (ES). This study aimed to describe and systematize these skills, considering the current globalization and digital transformation phenomena. The documental analysis and the critical reflection on the collected data allowed us to identify the socio-economic and socio-cultural reasons for the relevance of this problem. Consequently, to elaborate a frame of reference that is intended to be adequate to the needs of the professionals of the current global and digital era. The results pointed to a tripartite ES model - to be open to novelty, to create solutions to emerging problems, and to communicate effectively - which integrates the following skills: creativity and innovation, the spirit of initiative, self-efficacy and resilience, strategic planning, and evaluation, resolution of problems and decision-making, transformational leadership, clear and visual communication, teamwork and networking, and digital communication. In the continuation of this study, an ES scale will be created and validated according to this model, which will make it possible to measure the degree of development of these competencies.

Keywords: entrepreneurial skills; globalization; digital transformation; entrepreneurship education; entrepreneurial profile; frame of reference

Introduction

Cognitive and technical skills are not sufficient to face the professional challenges of the current digital and global world since they do not enable the development of proactive attitudes and original, sustainable, and winning projects [1–3]. If traditional education conveniently prepares students to enter the labor market, many students who finish higher education and other technical and professional courses experience great employability difficulties due to the lack of personal, social, and professional skills [4–6]. So, professionals need, in addition to traditional skills, a set of skills that allow them to be successful.

There is evidence that many candidates miss job opportunities due to gaps in the following areas: a sense of initiative [7–9], ability to work in a team [10–12], self-efficacy [13–16], resilience [17–19], problem-solving [20–22] and the ability to create valuable products and services. In addition, they have great difficulty in generating their jobs [23–27] and developing as freelancers [7,28,29]. In essence, these competitive deficiencies refer to skills that integrate the profile of entrepreneurs [30,31]. Several supranational bodies have indicated these skills as essential to being successful in the 21st century, such as the European Union [2,20,32], UNESCO [33,34], and the OECD [35,36]. In this sense, it is essential to identify those that are most useful to face the challenges of the current world and, consequently, define strategies that allow their improvement, which will enable the development of creative teams capable of solving emerging problems, such for example,

those currently most pressing in the area of environment, sustainability, health, employability, poverty, emigration, and inclusion.

Despite criticisms of entrepreneurship [37–39], the skills underlying the entrepreneurial culture have progressively integrated the curricula of education, initially with prevalence in higher education, but later also in secondary, secondary, and primary education, now becoming a reality essential in international education [40–43]. In this sense, this study integrates this problem to understand it in its conceptual foundations, in its practical interconnections, and its educational implications. To this end, a theoretical review of the literature and a critical analysis of the data collected were carried out, which allowed the identification of the economic, social, cultural, and educational reasons that justify the current relevance of the SC. Subsequently, a frame of reference was created, which is intended to be adapted to the needs of professionals in the current global and digital era. Moreover, the results pointed to a tripartite model that boils down to having a sense of initiative, creating solutions to emerging problems, and communicating effectively. Through the research questions, it was inquired about the way the SC is defined in the specialty literature; economic, social, cultural, and educational reasons justify its relevance today; the skills that shape the profile of entrepreneurs; and the ES that professionals in the current global and digital age need. Below is the description and discussion of the results obtained on these issues and the consequent frame of reference for being professionally successful in today's world.

Definition of entrepreneurial skills

A "competence" is defined as the ability to operationalize, in a concrete situation, a set of knowledge, attitudes, and skills to be successful [1,30]. This concept highlights that a competent person in a given area has an analytical, creative, and practical savoir-faire, more than simply an uprooted knowledge of performance circumstances. Furthermore, it shows a specific competence when successfully operationalizing its knowledge in specific situations. In turn, entrepreneurial skills are understood as the knowledge, attitudes, and skills that enable someone to be successful in developing original and valuable projects, products or services, based on the needs of a company – target population and, as a result, the fulfillment of functional, social or emotional objectives [44].

In this context, competencies enable the realization of practical ideas in solving problems and satisfying a segment of customers. So, a complex set of skills is needed to design, test, and expand a business model that is effectively a winner. Among these competencies, in the literature, we can identify several models with transversal competencies [20,45,46]; we also found specific pictures for students [1,36,47]; and models that envisage the promotion of a society based on entrepreneurial culture [44,48–50]. Some national and international bodies responsible for education have defined competency models in citizenship and participation, pointing to the need for everyone to be interventional and take entrepreneurial attitudes.

Reasons that justify the current relevance of the ES

Many reasons justify the need for the ECs to integrate the themes addressed in global education, highlighting the educational, social, and labor issues. These problems are present in many parts of the world, especially where there has been no improvement in education, health, democracy, and work.

Starting with educational issues, the need for high levels of qualification, both for the general population and for the leaders of organizations, stands out [31,51,52]. The excellence of learning, both initial and throughout life, allows innovation and the activation of organizational and social changes. When school failure persists, it is evident that the educational system has difficulty ensuring equal opportunities for all and providing quality education. If attention is not paid to promoting academic and academic success, progress and economic growth will be postponed, as stated by Simão et al. [53], who foresees that the pace of progress of the initiatives developed in Portugal in the last decades, towards the qualification of the Portuguese, will only reach the European average in 2050. In turn,

the traditional school has become accustomed to standardized teaching, where everything must be taught and evaluated in the same way, as if there were no significant differences in real interests and the most promising talents. In reality, serial education served for the period of expansion of the industrial era. However, it does not serve for a period of history like the present, characterized by differentiation, creativity, and innovation, which requires learning and know-how, know-how, know-to-be, and how to live together, and to know-have [31]. Thus, the fact is that the school has difficulty in fulfilling its mission of promoting integral development and identifying promising talents [54–57]. For this very reason, it is essential to understand the potential for the promotion of ES so that individual and collective talents are appropriately valued and maximized.

Regarding social issues, it should be noted that if development does not happen through talent, merit, the balance between State action and private initiative, problems such as poverty and social exclusion, insecurity, and criminality will persist corruption and fraud [58–60]. For example, when it is installed in institutions, to the point of becoming cultural and endemic, it encourages individual acts of corruption, namely the monopoly of decision-making power, little transparency, and lack of responsibility. Furthermore, because corruption, as a form of influence or decision-making, has remained unchanged over the centuries, despite some progress, combat plans have been promoted, as is the case of the UN program on global impact (UN Global Compact) [61] and the OECD on sustainability [62]. Dependence on subsidies also sometimes leads to facilitation, moving away from the training, innovation, and changes that entrepreneurship naturally requires. Moreover, social cohesion is even more complicated when there are unemployment problems.

In this sense, the labor issues are added to the previous questions, which are aggravated when the number of unemployed is very high, whose solution inevitably demands the ES [63,64], namely, to create their job [23–27,65] and pursue a freelance career [7,28,29]. Nevertheless, this problem is aggravated when the most talented and most qualified citizens are forced to emigrate since, in another country, they are better paid and valued [66,67]. In addition, when there is a preferential search for employment in the State, it becomes difficult to promote the realization of socio-professional projects in line with personal skills and real societal needs, hence the importance of being trained through entrepreneurship education programs. to be proactive in defining professional projects [68–71]. In regions with low levels of entrepreneurship, high levels of poverty are found [72–74]. Moreover, these indexes justify an increasingly intense and collective commitment to promoting the spirit of initiative, entrepreneurial culture, and global policies and networks for education for entrepreneurship.

In this global context, digital transformation has become, for professionals in general, one of the main challenges to be faced [75–77]. The ease of access to technology, the exponential increase in the reach of social interactions, and the possibility of rapidly expanding projects boosted the need to develop digital skills. New communicational models have emerged, which have leveraged the transformation of teamwork and sales, and which require flexibility and customization. Consequently, practices and workplaces have also been transformed.

In short, some skills are necessary for outstanding professional performance, highlighting those that are related to the ability to make things happen, an expression that synthesizes entrepreneurial skills. Furthermore, this happens to the extent that the person can think strategically and work as a team, lead teams and project development processes, design and prototype original and valuable products and services, and acquire differentiated knowledge and effectively organize times and spaces appropriate. These assumptions are underlying the reasons justifying the relevance of SC in the current world point to a set of SC that is presented in a row, along with the respective pedagogical implications.

Proposal for a reference framework for global entrepreneurial skills and its educational implications

Considering the concept of ES and the reasons justifying its relevance today, and after the general analysis of its relevance in professional development, a framework of reference for global entrepreneurial skills was elaborated, and its educational implications were analyzed. This framework resulted from the discussion of entrepreneurial competence models presented in the literature and in the proposals of national and international organizations and the fundamental requirements of young entrepreneurs, especially those who are at the end of training in professional courses or the end of higher education. In this sense, a proposal of seven ECs was tested and evaluated to be successful in carrying out innovative projects. The competencies were grouped according to their domain of action, as shown in Table 1.

Table 1 - Reference framework for global entrepreneurial skills

Focus and openness to novelty	Value creation	Effective communication
Creativity and innovation	Strategic planning and evaluation	Clear and visual communication
Spirit of initiative	Problem-solving and decision-making	Teamwork and networking
Self-efficacy and resilience	Transformational leadership	Digital communication

The first group of skills enables to create something new; a second enables to build solutions that effectively add value to customers; a third prepares to lead creative teams. Finally, the last competence connected with all the previous ones indicates the ability to differentiate yourself from others. More specifically, the seven competencies refer to the ability to identify a vision and develop it; the ability to make the right decisions; the ability to plan the steps to be taken to execute the decision; the competence to solve problems; the capacity for interpersonal relationships; the ability always to know more about the work area; the ability to differentiate yourself from other professionals and other solutions. Each of these skills will be developed below. Moreover, for each of them, the concept is presented from the perspective of the entrepreneur and the educational implications.

Those who undertake are distinguished by their ability to make things happen, deciding to create an original and valuable product or service. This creative decision presupposes being able to think critically, create value for a segment of customers, and communicate effectively. According to the proposal presented below, each of these three dimensions constitutes the foundations of the global entrepreneurial competencies model.

1. Skills to be focused and open to novelty

Entrepreneurs live focused on an idea, project, or objective, which becomes the key to the interpretation of events and opportunities for ventures. For this reason, they reflect, interrogate, analyze, question everything that relates to their projects. Consequently, they can see business opportunities where most do not and imagine possible achievements — this preview of what will happen gains tangible contours in how the process will be initiated and developed. According to Dornelas [78], the entrepreneurial culture works as the background in searching and identifying opportunities, promoting innovation, and creative work. For this reason, it supposes a series of actions focused on processes and people leading to the search for opportunities and the consequent prevalence of the will to plan and materialize, to think and act, to self-determination and leadership. Aiming to promote entrepreneurship as a means of promoting economic growth, social cohesion, and self-realization, it is essential to make the value of entrepreneurship part of the culture of citizens, promoting it since the beginning of school education [79–81], namely through the development of three groups of competences: (a) creativity and innovation, (b) the spirit of initiative, (c) self-efficacy and resilience.

First, entrepreneurs stand out from the general population for their capacity for creativity and innovation, originality and persistence in realizing their unique idea [82–85]. They break prevailing mental models and defy automatic thoughts. They are critical of what they hear; resist hasty conclusions; identify recurrent thought patterns and seek new frameworks. In addition to convergent thinking, which is linear in searching for only one solution to a problem, they also resort to divergent thinking, which is plural in the search for solutions to a problem [86–88]. Globalization, technology, and competition require the rapid adoption of innovations.

Furthermore, entrepreneurial regions stimulate creativity and innovation as priority topics for educational, economic, and cultural policies. For this reason, they are worked on and investigated [89–91]. A team innovates as it promotes the sharing of bold ideas, the experience of real contexts of professional practice, the possibility of having an idea, testing it, and developing it.

Second, the spirit of initiative distinguishes entrepreneurs, and for this reason, it has been one of the main objectives in promoting an entrepreneurial culture [7,20,92,93]. This is justified because the entrepreneur distinguishes himself by creating something new and of value. After discerning a need for a target group, it seeks ways to satisfy that need and works towards a solution [94]. Being more proactive than reactive, he takes the initiative and immediately applies his ideas until they find a better solution. That is why, like great leaders, he does not wait for events to happen, but he does make the course of events happen. After realizing what he wants to accomplish, he develops a plan and works until he gets the desired result. In this way, the initiative resembles a catalyst that activates the motivation to take the necessary steps until a goal is reached. If creativity and innovation allow for an open mind, the sense of initiative makes it possible to focus on the objective.

A third competence, which has also gained increasing importance in research on entrepreneurship, is self-efficacy and resilience. Moreover, this is justified due to its relevance in realizing ideas. Firstly, self-efficacy is one of the most referred constructs in the specialty literature [13–16,95,96]. Bandura [97] defines self-efficacy as the belief in one's abilities to produce the desired results since it drives human achievement and the search for well-being. For this reason, self-efficacy has a decisive influence on behaviors, thoughts, feelings, and intrinsic motivations, activating personal conviction in the ability to perform and enabling the understanding of eventual failures as limitations that can be improved. In this way, several studies converge by positively associating self-efficacy to undertake, and programs have been developed to activate this competence [98–103]. The self-efficacy perceived as a positive belief allows performing new or complex tasks to obtain the desired results. Second, resilience is also referred to in the literature, especially in the context of the transformation of the labor market and the unpredictability of the future [46,104–107]. That was defined from different perspectives: as an interactive concept that combines experiences of severe risk and a relatively positive psychological result, despite these experiences; as a universal capacity that allows a person, group, or community to prevent, minimize or overcome the harmful effects of adversity; as the ability of a dynamic system to successfully adapt to disturbances that threaten the function, viability or development of the system; as a result of negotiations between individuals and their environments for resources to be defined as healthy amid conditions collectively seen as adverse; and also as the "ability to use knowledge, attitudes, and skills to prevent, minimize or overcome the harmful effects of crises and adversities" [46] (p.167). In short, self-efficacy and resilience are a pair of essential skills to be successful in today's complex circumstances, marked by digital transformations and the search for urgent solutions to unforeseen problems.

2. Competencies to create value

Entrepreneurs are distinguished through their ability to materialize ideas, create value, which is the basis of their success. Being practical, they know how to do, solve problems, implement plans, and discover the most appropriate ways to start, develop and

finish their projects, to focus on the actions for their completion [31]. They manifest this ability to materialize in prototyping, making it possible to make an idea tangible, whether through paper, staging, or simulation of material artifacts [108–110]. It can be a model, miniature, or simulation as close as possible to a product, service, process, or business model. A pedagogy that aims to be entrepreneurial requires this type of practical intelligence. Hence the relevance of education betting on the realization of students' ideas through projects that solve local problems and that bring added value for themselves and society, namely through the development of three groups of skills: (a) strategic planning and assessment, (b) problem solving, (c) transformational leadership.

Dominated by a powerful and inspiring idea, entrepreneurs develop their action plan and go through the successive stages of their plan, having strategic planning and evaluation skills. Planning is the operation that selects and specifies the key activities that must be carried out to achieve certain goals, situating and distributing them within a specific time frame, and organizing the forces available to achieve them [1]. Therefore, a plan spells out what is to be done, when it must be done, and who will carry it out. Only when all these elements are clarified does the entrepreneur take action. Therefore, programming is a decisive element in the operationalization of a dream, project, business, or plan. For this very reason, strategic planning integrates entrepreneurial skills as an instrument that allows motivating and leading to the achievement of results [111].

Furthermore, the development of business plans and models facilitates this achievement, so it is the content of education programs for entrepreneurship [101,103,112,113]. The entrepreneurs' biography shows how they plan everything in detail, anticipating in their mind what will happen next. That is why planning is continuous, complete, and concrete: continuous because the planner projects before, during, and after each of the events or goals; complete because it leaves nothing to chance, working with globality and details, which often make a difference, especially when the "competition" is aggressive; and concrete because it avoids generalizations inappropriate to the specific project in question. In this process, planning also means evaluating, analyzing what is working well and what needs to be improved, what is being beneficial and what is hampering the excellent functioning of the team, the achievement of the expected results. In terms of educational implications, this competence points to the need for training in managing the personal agenda and the balanced distribution of time. Since planning is an essential tool for the management of a company, it needs to be improved to favor productivity, competitiveness, and efficiency.

Entrepreneurs focus on finding the best solution to the problems they face. For this reason, problem-solving and decision-making competence is the content of many intervention programs in this field [43,114,115]. Through mental processes of conscious analysis of the situation, they find, among the various alternatives, the best solution to the problem. In this process of solving the unexpected, they begin by recognizing the existence of a problem and by defining it rigorously. In this sense, according to Sternberg [116], people who take longer to discover what to do than to do it can obtain better good results. Then there is the time to define the best strategy to solve the issue in question, which presupposes the ability to postpone rewards.

Being an entrepreneur presupposes a great capacity to lead teams that are effectively capable of creating original and valuable solutions. Thus, the ability to manage interpersonal relationships, develop specialized knowledge, and the exponential transformation of the organization itself is required. In this sense, the transformational leadership proposed by Burns [117,118] proves to be adequate to the current context since it refers to the process through which leaders foster the commitment of followers and induce them to surpass their interests, namely materials, towards the organization's objectives, thus achieving its best performance. The transformational process takes leaders and followers to higher levels of morality and motivation (e.g., appeal to values such as justice, freedom, humanism, and peace). Followers feel confidence, admiration, loyalty, and respect for the leader and are willing to perform behaviors beyond those defined in their contract. The leader achieves these effects in three main ways: he makes followers more aware of the

importance of goals; induces them to transcend their self-interests in favor of the group or the organization; activates your higher-order needs, such as Self-Realization. There are four components to this kind of leadership: idealized influence - the leader adopts behaviors that activate strong emotions in followers, raising their confidence and identification with themselves, influencing their ideals and their philosophy of life; inspirational leadership - the leader communicates an appealing vision, uses symbols to encourage followers' efforts, acts as a model of behavior and arouses optimism; intellectual stimulation - the leader leads followers to become aware of problems and their thoughts, helps them to recognize their own beliefs and values, encourages innovative and creative thinking; individualized consideration - the leader pays attention to the followers' development needs, supports them, encourages them, trains them, tries to develop their potential, provides them with "feedback" and delegates responsibilities [1].

3. Skills for communicating effectively

Entrepreneurs are also distinguished by their ability to communicate effectively with specific customer segments, namely when presenting their products and services, both through social networks and digital platforms, and the media [119–121]. Aiming to promote entrepreneurship from the beginning of school education, it is crucial to develop the following skills: (a) clear and visual communication, (b) teamwork and networking, (c) digital communication.

Entrepreneurs are characterized by clear and visual communication, resulting from the fact that they pursue clear goals and have trained their communication skills, which are essential for their performance. Thinking and planning strategies allow for attractive and effective communication, distinguished by being exemplary for presenting brief, clear, and emotional contents. Usually, communicators with impact tell a story that allows a clear guiding thread to be followed that shows the successive steps of interconnecting ideas. In the training of future entrepreneurs, it is vital to train public speaking, promoting the following stimuli: having clear objectives; be concise; be neither too slow nor too fast, so as not to distort communication; use an audible and clear voice volume; be objective in presenting numbers, facts, quotes, people; making communication enjoyable through the use of original and fun elements; take particular care of the introduction and the conclusion, which must be brief, incisive and precise. Visual communication, in turn, consists of transmitting ideas through images. The messages thus constructed capture the attention, facilitate the acquisition of knowledge and increase the interaction of the audience [109,122,123]. This type of communication has been used in entrepreneurship education, highlighting the walls of meeting rooms covered with large posters, drawings, and notes on post-its, as well as the use of visual thinking tools that help to clarify problems, both in the form of software and schematic drawings drawn on walls, which facilitates the sharing of information and the evolution of ideas. Because it simplifies joint creation, companies also make frequent use of these visual thinking techniques. It is essential to develop skills to use visual aids to communicate intentionally with others in education. For this reason, visual literacy is currently an educational challenge in that everyone needs the ability to read and write the visual language. Moreover, it includes the ability to successfully decode and interpret visual messages and encode and compose meaningful visual communications.

Among the entrepreneurial skills necessary to be successful professionally, teamwork and networking also stand out [15,154–156]. Teamwork refers to the joint action of people, in which individual interests are subordinate to the efficiency of the group so that teamwork provides more results than individual work. For this, it is necessary to operationalize knowledge, attitudes, and skills to act together, to achieve a common purpose, maximizing the potential of each individual in a durable and balanced way [1]. Entrepreneurs are distinguished by their ability to facilitate these processes, keeping in mind the development of projects through an entire network that makes it possible to be successful, being essential in the organizational culture [10,127]. In turn, networking consists of establishing a network of contacts, favoring the sharing of information and services between

individuals and groups [128,129]. The growing interest in this capacity is because it expands the opportunities for mutual knowledge, thus enabling one of the essential principles of entrepreneurship, according to which everyone wins. This is achieved through exchanges between partners. In addition, it provides support to face the competition, since, as in teamwork, many more results are achieved together than individually.

Finally, the ability of digital communication is highlighted as a way to disseminate new ideas, projects, businesses, and brands [76,130]. This type of communication allows you to create and maintain relationships with specific target audiences and expand this network of customers or potential customers. Given the current digital disruption, digital marketing has become essential for many organizations, enabling systematic interactivity with consumers and listening to assessments and suggestions. For this reason, digital entrepreneurship, defined as the search for opportunities through communication technologies, has aroused global interest, since part or all of the entrepreneurial project occurs digitally, unlike the more traditional business formats [131]. Examples of digital businesses are online health services, software development, e-commerce, online accounting, digital platforms for systematizing information, online consultations, e-learning, and all businesses that sell digitized products or make services available online. The number of digital entrepreneurs has increased in recent years and will continue to increase given the advantages for carrying out the main business activities, such as marketing, stock management, sales, quality control, and distribution. Also, emerging digital technologies, such as artificial intelligence, will gain more and more space in the development of entrepreneurial projects, making it possible to foresee even more transformations in the execution of the tasks of creating products and providing services.

Conclusions

This study presented evidence that entrepreneurial skills are necessary to be successful professionally in the current job market. The current complexity and unpredictability require this type of capability to make the global and digital transformation happen, create valuable products, and develop, as a team, innovative services. In this sense, the skills that support the behaviors that make it possible to focus and open up to novelty, create value and communicate effectively.

Given the problems emerging in the current context, markedly international and technological, and the analysis of the knowledge, attitudes, and skills necessary to be successful, a frame of reference conducive to professional excellence was elaborated according to the profile of the entrepreneurs. The nine competencies that make up this model - creativity and innovation, initiative, self-efficacy and resilience, strategic planning and evaluation, problem-solving, transformational leadership, clear and visual communication, teamwork and networking, and digital communication - need to be investigated and developed so that they integrate the study curricula of the younger generations, and the entrepreneurial pedagogy is improved. In this way, with the spread of entrepreneurial attitudes, the majority of citizens will be able to apply their knowledge, materialize disruptive ideas, and contribute to the resolution of serious problems, both local and international, that hinder the smooth functioning of organizations and societies.

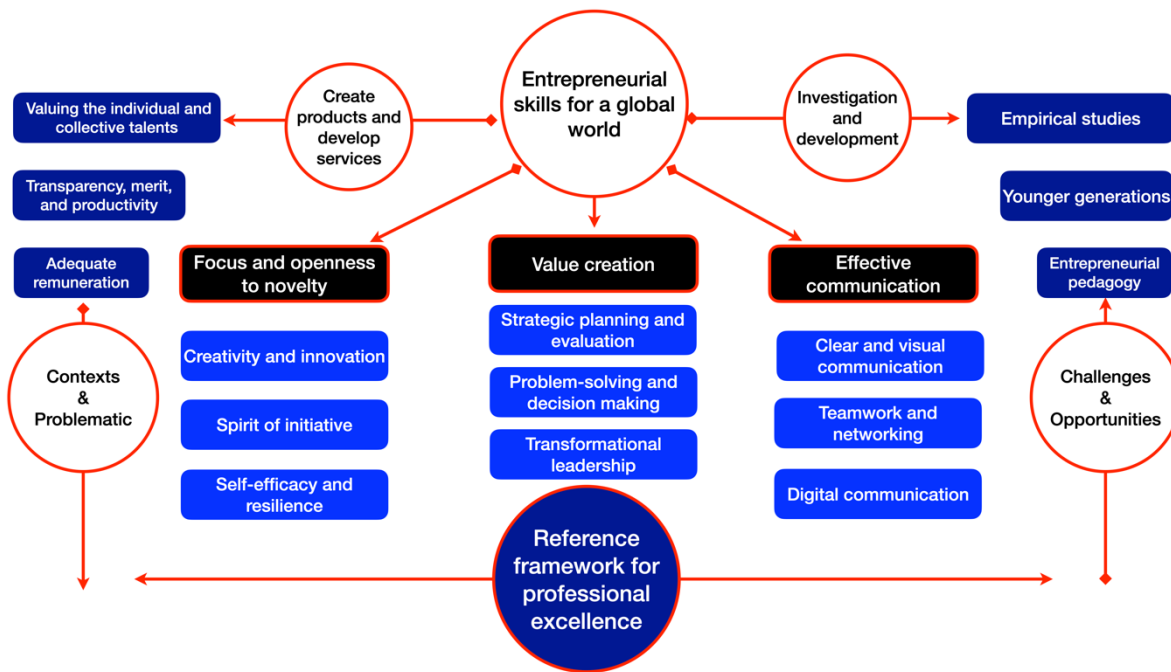


Figure 1. A flowchart that summarizes the main conclusions of this review and guides the development of entrepreneurial pedagogy and the definition of research projects

In the continuation of this study, it is suggested to create instruments for assessing the competencies presented in this model to accurately measure the degree of development of each of these competencies in different types of entrepreneurs. In this way, it will be possible to analyze its relationship with other variables, such as financial success, satisfaction with life, physical and mental health, or family achievement. It is also suggested that studies are carried out to validate the effectiveness of educational strategies that promote these skills so that they are developed through intervention programs designed for this purpose.

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