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Competences for Sustainable Development Goals: The Challenge in Business Administration Education

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Abstract

This research aims to answer the following question: How to advance in the development of competences aimed at the Sustainable Development Goals (SDGs) in business administration education? An exploratory literature review was conducted to discuss human competences for the SDGs and to propose advances for their conception and development in undergraduate courses in Business Management. The discussion was based on the guidelines established by the main body engaged in the cause, UNESCO. Education for sustainable development (ESD) guided the proposal of this study for the operationalization of competences for the SDGs, organized into: i) information used in the development of competences for the SDGs; ii) how competences should be defined; iii) competency based ESD content; iv) expected results from the operationalization of competences and v) who is involved in the process.

Keywords: competences, education for sustainable development, higher education, graduation in business administration, sustainable development goals

Introduction

The unfolding crisis of sustainability has gained increasing societal interest (Furu et al., 2021). It is essential to find ways to sustain the planet's resources while at the same time developing the well-being of a population that is constantly growing presented in the Brundtland report (UN, 1987). To alleviate these problems, the United Nations (UN) has carried out several initiatives over time, the most recent being in 2015 with the establishment of the 2030 agenda and the Sustainable Development Goals (SDGs) (UNESCO, 2015).

Promoting the SDGs has become a global issue and, in this process, education plays a fundamental role (Tetiana & Malolitneva, 2020). However, although the integration of SDGs in universities is becoming a field of study, the role of the university is still being underused, which leads to little progress in achieving the SDGs (Murillo-Vargas et al., 2020).

Competences play a fundamental role in transforming the behavior of individuals (Dobson, 2007), being a possible prerequisite for transition towards SDGs (Stephens &

Graham, 2010). The business administration courses are pointed out as a favorable context for the implementation of competences focused on the SDGs. This is because management practices are generalized and by changing, through competences for the SDGs, the way these students think, and act will lead to significant changes in organizations around the world (Weybrecht, 2017).

Several universities are involved in activities that seek to identify which competences are important for DS in higher education (Rekalde-Rodreuguez et al., 2021), above all the inclusion of competences in curricula (Brundiers et al., 2021; Trencher et al., 2018; Wiek et al., 2011). In this context, Education for Sustainable Development based on critical reflection, oriented towards action, allows for the development of competences (Van Dam-Mieras et al., 2008), and will be considered in this study as conducive to develop competences for the SDGs.

The present study is based on the proposal “Education Goals for Sustainable Development: Learning Goals” presented by UNESCO (2017), which structured eight competences and the specific learning goals for each SDG. Although based on previous recognized studies (Haan, 2006; Rieckmann, 2012; Wiek et al., 2011) and already used in later research (Eizaguirre et al., 2019; Sánchez-Carracedo et al., 2021), the document drawn up by UNESCO (2017) does not advance in the operationalization, development or evaluation of specific competences or goals.

Despite the large number of research on the subject, there is still little evidence on how these competences are developed in students (Konrad et al., 2020) and how they can contribute to the fulfillment of the 2030 Agenda, i.e., how they are linked to the SDGs (Salovaara et al., 2020). Most proposals remain generic and, with few exceptions, seek to identify the levels of competences for undergraduate and graduate programs (Roorda, 2010). The simple identification and description of competences for sustainable development has already been criticized and pointed out as a limitation for advances in the field (Wiek et al., 2016).

This study aims to respond to the following research problem: How to advance in the development of competences aimed at SDGs in the education of business administration? To this end, this study is based on an exploratory literature review and divided into the fulfillment of two objectives: (i) to discuss human competences for SDGs and (ii) to propose advances for its conception and development in undergraduate courses in Business Administration.

The present research adds theoretical contributions by indicating ways to fulfill the 2030 Agenda, based on administration courses, given the existing confrontation between Education for Sustainable Development (ESD) and the orthodox theory existing in Business Administration courses.

Competences for Sustainable Development – Approaches to the 2030 Agenda

Considering that people represent the main asset responsible for making decisions in the organizational environment (Malta & Calloni, 2018) so that SD-related issues leave the discourse and are duly integrated into the routine of companies, individual competences aligned with sustainable values are fundamental (Jerónimo et al., 2020). These competences are attributed to the terminology competences for sustainable development.

A competence for SD can be understood as the combination of knowledge, skills, behaviors, and attitudes capable of guiding the individual to create solutions and make decisions, considering environmental, social, and economic aspects as a central element of the process (Perez Salgado et al., 2018). It is known that this is a topic of interest both in the field of knowledge in administration and in education (Galleli & Hourneaux Junior, 2019).

According to Aragón-Correa and Sharma (2003), the Resource-Based View (RBV) represents the dominant perspective applied in studies on competences. In the area of management, the focus on competences for SD is preponderantly directed to exploring how the relationship between the development of organizational competences and sustainable development within organizations is established (Kuzma et al., 2017), mainly from an instrumental perspective.

In education, in turn, the focus is on understanding how educational institutions, at different levels, can contribute to the formation of individuals who have in sustainable development a high value to be observed and treated from a critical perspective, proactive and engaged in different scenarios (Rohrich & Takahashi, 2019). There is, therefore, an emphasis on individual worth.

In the research conducted by different educational institutions, the authors often seek to understand the characteristics of the main competences addressed in the curricula (Perez Salgado et al., 2018), how they are taught and how the learning process occurs for students (Lozano et al., 2019). The results, in addition to revealing distinct competences (Hann, 2006; Wiek et al., 2011; Rieckmann, 2012), allow positioning an ESD approach as a central tool for the application of strategies aimed at working in the SD at all levels of formal and informal education (Shulla et al., 2020).

In the present study, although the focus of investigation is the educational context, both views will be taken as complementary. This is because, by requiring the engagement of different actors, the complexity of the SD requires holistic approaches, capable of integrating actors inserted in different dimensions in a harmonious and complementary way. The idea is to emphasize that the development of competences for SD should not have an exclusive focus on the curriculum or on companies but rather consider the individual's performance in both scenarios.

Possible answers to questions about what they are and how competences for Sustainable Development can be inserted in different student curricula proliferate in the agendas of different actors. This statement is supported by the variety of studies focused on the issue, in which different results were achieved. Among the competences found, the following are mentioned: anticipatory thinking skills (Hann, 2006; Wiek et al., 2011; Rieckmann, 2012); interdisciplinary work, cooperation, empathy, solidarity (Rieckmann, 2012), systemic thinking (Sterling & Thomas, 2006; Wiek et al., 2011), valuing diversity, the environment, justice, knowledge of the principles of sustainable development and sustainability problems (Sterling & Thomas, 2006), responsibility, emotional intelligence and personal involvement (Roorda, 2010).

The potential for practical applicability of these competences has guided UNESCO (2017) to use the research results by Haan (2006), Rieckmann (2012) and Wiek et al. (2011), a situation in which a set of eight key competences allow progressing towards SD to occur (see Table 1).

Table 1

Skills for the SDGs

Competence	Constitutive Definition
Systemic Thinking Competence	Ability to recognize and understand relationships; analyze complex systems; think about how systems are incorporated within different domains and different scales; and deal with uncertainty.
Anticipatory Competence	Ability to understand and evaluate various futures – possible, probable, and desirable; create your own visions for the future; apply the precautionary principle; assess the consequences of actions; and deal with risks and changes.
Normative Competence	Ability to understand and reflect on the norms and values that underlie actions of people; and negotiate sustainability values, principles, objectives, and goals, in a context of conflicts of interest and concessions, uncertain knowledge and contradictions.
Strategic Competence	Ability to collectively develop and implement innovative actions that promote sustainability at the local level and in broader contexts.
Collaboration Competence	Ability to learn from others; understand and respect other people's needs, perspectives and actions (empathy); understand, relate and be sensitive to others (empathic leadership); dealing with conflicts in a group; and facilitate collaboration and participation in problem solving.
Critical Thinking Competence	Ability to question norms, practices, and opinions; reflect on one's own values, perceptions and actions; and take a stand in the discourse of sustainability.
Self-knowledge Competence	Ability to reflect on one's own role in the local community and in (global) society; continuously evaluate and further motivate one's own actions; and deal with one's own feelings and desires.
Integrated Problem-Solving Competence	Ability to apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive, and equitable solution options that promote sustainable development by integrating competences mentioned above.

Source: UNESCO (2017)

In the view of UNESCO (2017), the above-mentioned competences are relevant to assist individuals in addressing current socio-environmental challenges, as well as to allow them a broader notion of the 2030 Agenda for Sustainable Development.

There is less than a decade to the deadline for achieving the 2030 Agenda targets, challenges, difficulties and limitations for the insertion, development and evaluation of these competences are noted. As an example, there is a lack of assessment instruments on the effects that initiatives of this nature have on the education of individuals (Waltner et al., 2019), resistance from many educational institutions with regard to the development of emphatic strategies for sustainable development (Filho et al., 2019) and clear information on which and how different pedagogical approaches can be used in favor of the *articulation* of competences for sustainable development (Lozano et al., 2019). In view of the above, the relevance of competences for sustainable development in the transition to a future that is better in line with environmental, social and economic ideals is remarkable (Salgado et al., 2018). However, the limitations are latent and substantial advances are necessary so that the education of future managers based on competences for sustainable development is a reality in educational institutions.

Education for Sustainable Development in Business Administration Courses

Education for Sustainable Development as a concept has a long history in the SD movement (Kohl & Hopkins, 2020). It came back to Agenda 21 and recently to the United Nations Decade of Education for Sustainable Development (DESD), promulgated by UNESCO (2005). It highlights the Principles for Responsible Executive Education (PRME) created in 2007 to aim specifically at management courses (PRME, 2021).

In this study, ESD is understood from the concept presented by Wals (2009, p. 26): “a learning process (or approach to teaching) based on the ideals and principles that underlie sustainability and is concerned with all levels and types of education”. Its purpose is to develop the student so that they are able to balance their life in a socially, culturally and economically responsible way (Seema & Gupta, 2019).

Murillo-Vargas et al. (2020, p. 10) mention that education is the key strategy to change the course of our unsustainable dynamics through the 17 Sustainable Development Goals. In higher education, it is considered not only the degree of maturity that a student must study complex problems, but also the fact that, at this stage, SD may have a greater impact on the student’s education than at other educational levels. It is evident by the possibility of putting into practice the concepts presented in the short term, or even to the future positions that students may occupy (Escrig-Olmedo et al., 2017).

The integration between education and sustainable development has been strongly supported in undergraduate Business Administration courses, since ESD has a transformative potential to influence and improve responsible business practices (Cooper et al., 2014).

The confrontation that ESD makes against the Orthodox management theory, which is present in current Business Administration courses, is identified as one of the greatest challenges for the real implementation of the teaching focused on SD (Cooper, Parkes & Blewitt, 2014). The idea that the Business Administration courses are intended only to generate greater profits is no longer sufficient, it has been raised in discussion forums for some time (Mustața et al., 2013).

Incorporating basic concepts in the curricular basis of the Business Administration course is one of the ways to seek the development of competences for SD. However, Friman et al. (2018) warn that changes in the curriculum are the most discrete changes in understanding the need for experience in SD, i.e., the challenge is to consider more deeply the vision of competence in the education for SD of future teachers (Cebrián & Junyent, 2015).

UNESCO (2017) points out that only a change in the focus of teaching, learning and transformative pedagogy can overcome the challenges of training these professionals. In line with this perspective, it is believed that the identification, development, and application of specific competences for sustainable development should be prioritized in ESD in Business Administration courses, as well as the search for joint construction with universities and other partners (Galleli et al., 2019). From the perspective of transformative pedagogy, the next sections investigate how ESD can contribute to the development of competences for the SDGs.

Competences for the SDGs: A Proposal From the ESD

ESD is an education reform that requires the integration between motivation, learning skills and resources of educational institutions (Meesuk et al., 2021). ESD requires an adaptation of context, content and pedagogies leading to a reorientation of curricula (Kohl & Hopkins, 2020). The main function of this reorientation is to address the worldviews inherent to the SD in order to make it relevant and culturally appropriate (UNESCO, 2017), enabling the development of competences for the SD.

The literature points to competences as critical references for the development of curricula and courses (Wiek et al., 2011); however, these competences are rarely operationalized with the specific learning objectives (Balasopoulou et al., 2017). This delay in operationalization provides an explanation of why the incorporation of such competences into curricula has been slow (Thomas & Day, 2014).

In order to advance in this topic, it is important to realize that the operationalization of competences and specific learning objectives for each SDG, as described in the UNESCO document (2017), should be the first step for the development of curricula and course designs, such as new teaching-learning methodologies, deliverables and evaluations that are relevant to achieving all SDGs (Wiggins & McTighe 2005).

Table 2

Overview of the Operationalization of Competences and Learning Objectives for the SDGs

Steps	1 – Information used in the development of competences for the SDGs	2 – How competences should be defined	3 – Competence- based ESD content	4 – Results expected by the operation- alization of competences	5 – Who is involved in the process?
Elements	UNESCO List of Competences (2017); Specific learning goals of each of the SDGs	Adaptation of a definition for operationalization of specific learning competences and goals in relation to the proposal of the course	Competences for the SDGs, included in the proposal of Business Management course, forms of development and evaluation	Redefinition of curricula, teaching-learning methodologies, course designs and evaluations.	Definition of responsibilities
Observations	The prior definition of competences is necessary, so that the competences and specific learning objectives of each SDG can be operationalized.	If there are no competences based ESD reference, the suggestion to implement it gradually through its introduction in a pilot discipline, followed by interdisciplinary projects with increased complexity.	The operational structure of competences and specific learning goals should be reflected in the course proposal and, consequently, in the educational system of the HEI.	By relating competences to each specific learning objective, educators will be able to know which competences their activities are contributing to develop in students.	The process should involve course coordination, teachers and students. Thus, it is essential to identify training and development demands of educational managers and teachers.

Source: Made by the authors (2021)

Table 2 presents a model for such operationalization to be coherently organized. The table seeks to define the adequacy of the competence operationalization model, how it will be developed, formatted, and used. The proposed model will clarify the following items: the information used in the development of competences for the SDGs; the definition of competence; competence-based ESD content; the expected results from the operationalization of competences and the stakeholders.

Information Used in the Development of Competences for the SDGs

For the SDG competences to be developed by the students, they must be properly constituted and operationalized. Competences must be previously defined according to the conceptual definition and then operationalized with the specific learning goals of each SDG. From then on, it will be defined which competences the student will develop and the best teaching-learning strategies to enable and evaluate this development.

How Competence Should be Defined

The relationship between competences for the SDGs and the specific learning goals for each SDG has a potential catalyst for the fulfillment of the 2030 Agenda. At this point, it is worth mentioning that both the conceptual definitions of competences and the specific learning goals, as presented in the UNESCO (2017) document, are limited as to the possibility of operationalization, requiring adaptations of operational settings.

In this sense, Table 1 brings the conceptual definitions of competences, while Table 3 demonstrates the adaptations made to transform them into operational definitions. The justification for such adaptation is the impossibility of operationalizing the concepts as presented in the above-mentioned document, considering the complexity and quantity of constructs of each item.

Table 3

Operational Definitions of Competences for the SDGs

Competence	Operational Definition
Systemic Thinking Competence	Competence in analyzing complex systems and their inter-relationships.
Anticipatory Competence	Competence in evaluating future scenarios and their implications.
Normative Competence	Competence in applying norms and values related to SD.
Strategic Competence	Competence in implementing actions that promote SD.
Collaboration Competence	Competence in collaborating in heterogeneous groups.
Critical Thinking Competence	Competence in defining positions related to SD.
Self-Awareness Competence	Competence in defining your contribution to SD.
Integrated-Problem Solving Competence	Competence in solving complex SD problems.

Source: Made by the authors (2021)

Competence-based ESD Content

The ESD included in the Business Administration courses, within the scope of this proposal, is a fundamental element for the SDG competences and their respective learning objectives to be operationalized. With its overall objective of developing competences for SD in students, ESD provides fundamental support to all committed efforts to achieve the SDGs, thus enabling students to collaborate with sustainable development by promoting social, economic and political change, as well as by transforming their own behavior (UNESCO, 2017).

Expected Results for the Operationalization of Competences

The operationalization of competences is the first step towards reorientation of curricula and course designs, deliverables and evaluations (Wiggins & McTighe, 2005). It is expected that such operationalization will address the appropriate pedagogies to transmit the competences to the SDGs. It is also expected to address the measurement/evaluation of competence development. In addition, operational competences can be applied to both undergraduate and graduate programs in sustainable development programs in higher education institutions (Wiek et al., 2016).

Stakeholders

From the operationalization between the competences and specific learning goals, the next step is to involve educators, students, and course coordinators so that they can support the renewal of curricula, adoption of new approaches and implementation of teaching and research methods that favor the adoption of practices that promote the development of competences related to SDGs. By completing the process, educators will be able to know exactly which competences their activities are contributing to develop in students and thus will have input to, along with the traditional evaluation model, also assess through competences and thus measure the development of such competences in their students (UNESCO, 2017), thereby favoring critical thinking and participatory decision-making, facilitating learning so that students understand the world based on their own observations (Pauw et al., 2015).

The definitions of competences and learning goals, as well as their connections, constitute the first step towards the operationalization of their development within the scope of the ESD. The proposal must undergo adaptations, according to the reality of the Business Administration course and the educational system of the HEI. The way in which they will be developed are means to turn it tangible and at the same time already materialize the results expected by the operationalization of competences – competent students with regard to the SDGs. As a complex process, responsibilities for the elaboration and practice of the proposal permeate managers, teachers and students in a process of co-participation.

The presented proposal can contribute to establishing and strengthening the development of competences focused on the SDGs in undergraduate courses, in addition to legitimizing the potential and relevance of education for sustainable development in Business Administration courses. Despite being presented in a linear and logical way, the proposal can and should be reviewed at any time when adjustments prove necessary.

Final Considerations

In response to the research question, this study intends to advance in the development of competences aimed at the SDGs in Business Administration education, as it discusses the main elements already presented by a legitimate body and suggests plausible paths for its application in courses of this nature. The role of future managers in organizational decision-making, has tied the participation of organizations in the conception of a substantial share of pressing socio-environmental crises, turning the discussion about which training elements can contribute to a change in individual posture, consequently affecting the business setup.

As theoretical contributions, this study aims to contribute to the maturation of the field, as it goes beyond providing generic lists of competences and shows ways to advance through its operationalization in a specific scenario, in this case, undergraduate courses in Business Administration. Furthermore, investigating the operationalization of competence development for the SDGs can expand its applicability and the implementation of competence education (Wiek et al., 2016), which is a fundamental condition for enabling them to fulfill their purpose, i.e., to be part of the routine of professionals of the future, who need to play an active role in sustainability actions. In addition, this research adds theoretical contributions by indicating ways to comply with the 2030 Agenda, providing new tools so that the goals stipulated therein can be achieved within the established aspirations.

As for practical implications, first, it is expected to assist educational managers in a possible reformulation of curricula and pedagogical policy projects with emphasis on competences related to the SDGs, because high education implies changes in the environment (Jurgena et al., 2021). Moreover, the intention is to bring together professionals who are already in the labor market so that they are aware of the competences they can expect from candidates at undergraduate courses in Business Administration, in addition to making new proposals and contributing to the HEIs in this aspect, aligning expectations and needs of the corporate environment.

In the social sphere, this study aims to contribute to public policy makers, since they can learn about the competences related to the SDGs that can be developed in higher education and its operationalization and propose educational regulations accordingly. Similarly, indicating the means of operationalization competences aimed at the SDGs, this study aims to contribute to the 2030 Agenda, since goal 4.7 of SDG 4 – Quality Education, proposes that by 2030 all students acquire the knowledge and competences necessary to promote sustainable development.

This is an exploratory research and other contributions and studies on the subject are still needed. First, we suggest the structuring and empirical application of the proposed model, to validate it, seeking confirmations, rebuttals, and evolutions. Not only the university community must participate in this process, but also the corporate community, seeking alignment between the competences proposed for education and those demanded in the labor market. There are also opportunities to expand and develop the model, for other undergraduate and graduate courses.

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