

Service-Learning as an Approach to Educating for Sustainable Development

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Abstract: Higher education has an essential role in the promotion of sustainable development. For this to be possible, the use of methodologies in accordance with principles of sustainability must be fostered. This article theoretically analyzes the characteristics that make service-learning an effective tool in education for sustainable development. In order to understand the challenges involved in its implementation in higher education, first of all, the concepts of sustainable development and sustainability are defined. Next, the use of education for sustainable development and curricular sustainability in higher education is contextualized. Finally, the pedagogical proposal of service-learning is addressed and linked to the principles of sustainability in the university environment. To conclude, in relation to prospective applications of service-learning, it is argued that it is an optimal methodology to educate about, for, and from sustainability and that its institutionalization in higher education is highly desirable.

Keywords: service-learning; sustainability curriculum; higher education; sustainable development



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1. Introduction

In 2015, the United Nations General Assembly approved the 2030 Agenda for Sustainable Development [1]. The 17 goals that it outlined, the Sustainable Development Goals (SDGs), call on the commitment of governments. However, these goals are also aimed at all people and organizations. Higher-education institutions have, therefore, joined this effort and developed programs to generate a new form of education for sustainable development that may inspire higher-education policies and curricula [2]. In this way, higher-education institutions aim to help achieve SDG 4 through inclusive, equitable, and quality education, and also contribute to addressing the SDGs holistically through education for sustainable-development initiatives.

In 2021, the United Nations Educational, Scientific and Cultural Organization (UNESCO) published a report entitled *Reimagining our futures together. A new social contract for Education*, in which it is stated that, in order to forge peaceful, just, and sustainable futures, education itself must be transformed [3]. The report arises from three essential questions that need to be asked about education in 2050: What should we continue to do? What should we stop doing? What should be creatively reinvented? According to the report, any new social contract must be governed by two foundational principles: guaranteeing the right to quality education throughout life and reinforcing education as a public common good. These principles would ensure that, towards 2050, education would empower future generations to reimagine their futures.

Among the proposals in the report for renewing education is that programs of study should emphasize ecological, intercultural, and interdisciplinary learning that helps students access and produce knowledge while developing their capacity to critique and apply this knowledge. In addition, to develop a new social contract for education, it is argued that higher-education institutions should be actively engaged, either by supporting research and the advancement of science or by collaborating with other educational institutions

and programs, both in their own communities and around the world. Institutions that are creative, innovative, and committed to the strengthening of education as a common heritage have a key role to play.

The role of higher education is therefore decisive in building a more just and sustainable society and in making students aware of the impact of human actions on the planet and of the effects of these actions on future generations. For this reason, organizations and researchers have worked to define this role of higher education [3–7]. An increasing number of voices state that higher-education institutions, through research and social engagement, can serve as models for sustainable practices and societies. Moreover, the real challenge centers on the ability to educate students differently. Köybaşı [8] notes that “teachers’ views indicate a high disposition to sustainable education in the current status”.

This article defines the concepts of sustainable development and sustainability. It underlines the importance of education in this area and, in particular, the special relevance of curricular sustainability in higher education. Moreover, it presents service-learning as an optimal tool for the development of curricular sustainability. This proposal is not only a tool for social transformation to provide education about sustainability; it is also an intrinsically sustainable experience through which students, educators, and community members participate realistically, actively, and deeply in actions that promote sustainable development and social justice.

2. Sustainable Development and Sustainability

According to the Brundtland Report [9], sustainable development means meeting the needs of present generations without compromising the ability of future generations to meet their own needs.

The concept of sustainable development is characterized by its processual nature, which means that it is a process and methodology capable of mobilizing and enhancing the traditional resources and the innovative capacity of each territory, thereby stimulating social participation, associative formulas, and participatory democracy [10].

Hofman-Bergholm defined sustainable development as follows: “sustainable development or sustainability is not just an environmental issue. It is a multifaceted interdisciplinary concept which affects our future by including cultural, social, economic, political, and ecological aspects in a complex interplay” [11] (pp. 24–25).

While the concept of sustainable development implies a process, that of sustainability relates to the goal pursued by the human race of maintaining human society in harmony with the planet [10].

In 2000, the United Nations included Sustainable Development among its *Millennium Development Goals*. In 2015, its 2030 Agenda sought to achieve greater concreteness and, since then, public debate has focused precisely on the search for concrete measures, avoiding overly aspirational declarations. Organizations at all levels are striving to find ways to ensure that the achievement of the SDGs does not remain merely a declaration of principles; the belief that this is an urgent matter has, moreover, gained momentum.

The Conference of Rectors of Spanish Universities [12] (p. 5) offers a comprehensive definition of sustainability as:

A concept that includes the search for environmental quality, social justice, and an equitable and viable economy in the long term. It defines a set of criteria oriented to ethical behavior with everything that surrounds us (resources, people, spaces, etc.), so as to achieve intra and intergenerational equity, as well as to manage relations with the natural and social environment, maintaining its availability and ecological balance, and promoting a more equitable and fair distribution of resources, benefits, and environmental costs.

Higher-education institutions have developed significantly in recent decades, through the theoretical training of students, as well as through service actions related to the natural and social environment. In fact, multiple reports and papers have gathered many experiences and proposals that highlight the effort to avoid generalizations, to discover

concrete tools that are measurable, and that are also transferable to other contexts and institutions [13–22].

3. Education for Sustainable Development and Curricular Sustainability in Higher Education

The concept of sustainable development is a great challenge and, at the same time, a great opportunity for higher education [23,24]. Education for sustainable development promotes a balance between economic growth, environmental conservation, cultural diversity, and social well-being [7]. Educating for and from sustainable development requires holistic, multidisciplinary, and interdisciplinary approaches to address the systemic problems that characterize the contemporary world [3].

Education understood as sustainable development is transformative; it focuses on the process and quality of learning, the integral development of learners, and transformative learning experiences. In this model, the essential elements are [2,25]:

- Reflection and participation, which make it possible to manage change towards sustainability in institutions, companies, and communities.
- Systemic thinking, which facilitates the understanding of the connections between social, cultural, economic, political, and environmental systems.
- A holistic approach to problem-solving.
- Decision making that takes all effects into account.

The literature on education for sustainable development calls for pedagogical innovations that provide interactive, experiential, transformative, and real-world learning that mobilizes critical and systemic thinking in the context of sustainable development [20,22,26–29]. It is expected that this change in viewpoint will inspire researchers and educators of all disciplines to further the development of pedagogies and teaching resources for sustainable development. The *UNESCO Bonn Declaration* [30] called for turning knowledge into action for sustainable development and for reorienting programs of study to meet this objective. Other UNESCO reports had the same objective [3,31,32].

However, curricular sustainability involves the inclusion of sustainability content in the programs of different subjects, and it has been proven that specific subjects related to sustainability contribute the most to the development of sustainability competencies [29]. Moreover, it also entails global changes in the very conception of the educational process. It implies the integration of the principles, values, and practices of sustainable development with a view to addressing the social, cultural, economic, and environmental problems of the twenty-first century [3,32].

Most higher-education programs do not take the objective of educating for a sustainable society into account. Subjects tend to focus on specific competencies and, as a result, transversal competencies are often forgotten [33]. Therefore, higher-education institutions need to integrate sustainability competencies into their curricula in a way that prepares students for sustainable living, both professionally and personally, and facilitates students' explicit understanding of the interactions and the consequences of actions and decisions. Students should learn and practice holistic thinking and be able to apply this type of thinking to real-world situations. In addition, students must understand how the systems of which they are a part (social, cultural, economic, political, and ecological) function and are integrated [33].

This approach requires significant changes, not only in the curriculum, but also in didactics [5,34]. In this sense, the role of the educator is key. Curricular sustainability in higher education involves a deep transformation process that involves debating ideas and values, and using pedagogical methods in line with the principles of sustainable development.

Some of the teaching strategies that are most in line with sustainability principles are as follows [3,23,34–36]:

- Dialogic strategies (discussion, debate, and dialogue)
- Critical reflection on locally and globally relevant issues.

- Hypothetical and real cases (role-play and case studies).
- Collaboration on projects and tasks (group activities).
- Experiential learning activities such as community action and problem-solving.
- Mentoring (to facilitate understanding and engagement with education for sustainable-development issues).
- Interdisciplinary exploration and problem-solving.
- Action learning (in which trainees develop and implement action plans for sustainable development, reflect on their experiences, and suggest improvements).
- Action-research (a cyclical process of planning, action, observation, and reflection based on research to innovate and improve practice).

Higher education is responding to these challenges in a variety of ways: by prioritizing sustainability practices on campus, supporting research related to more socially engaged sustainability [13], increasing intentional and frequent engagement with sustainability issues by non-academic partners [17], and adapting curricula and pedagogical approaches to integrate sustainability into teaching [5,17,23,26,34]. As universities begin to engage with sustainable development and the needs of local and global communities, the importance of using new approaches, such as service-learning, to guide these endeavors becomes apparent [37–41]. Below, the literature on service-learning with regards to achieving sustainability is reviewed.

4. Service-Learning, an Optimal Tool for Education for Sustainable Development

Service-learning is a powerful experiential educational method, in which participants engage in activities that effectively address social, environmental, and various human needs to promote social justice, as well as integrating service into communities through curricula so that civic responsibility is deeply felt by students and critical reflection is strengthened [42].

This method responds to the ultimate goal of education: to educate competent citizens capable of transforming society. Service-learning is the necessary response to higher-education institutions, which too frequently remain oblivious to social needs. Its implementation and institutionalization make it possible to respond to the real challenges of society, overcoming the elitism of merely theoretical approaches that lack practical applications [41,43]. It allows students to link academic learning with the needs of communities, thereby fostering civic engagement, promoting sustainable development [37,38,44,45], and transcending the walls of the classroom, with benefits for both students and communities [38,46,47]. Furco and Norvell [48] point out that key elements of service-learning are:

- Integration in the curriculum.
- Student voice.
- Partnership with the community.
- Reciprocity.
- Reflection.
- Moral values.

Two main mechanisms that make service-learning an effective educational tool: the process and the results. Firstly, service-learning triggers a mental process that enhances learning. Research shows that complex facts and ideas are better retained when knowledge is linked to experience [49] and the transfer of skills and knowledge to real situations is facilitated [50]. Learning in real contexts is a key element in understanding sustainability [23]. Secondly, service-learning produces results of great interest for higher education. Studies show that service-learning contributes to the development of critical thinking and problem-solving skills [51,52], motivation to learn [53], civic engagement [54], social responsibility and value development [38,46], and self-efficacy and confidence [52]. It increases students' awareness of social justice [55,56], teaches them to question society from a critical perspective, and emphasizes social change rather than charity [46].

Service-learning actions are aimed at the environment and at people living in situations of social disadvantage, exclusion, and/or risk of exclusion. It focuses on situations of

injustice related to the environment, equity, diversity, interculturality, functional diversity, learning difficulties, educational inclusion, and human rights [17,57]. Students reflect in a structured way, thinking, debating, and writing about these realities. They consider their origin and how to prevent and confront such situations. They consider the impact of service on the improvement of the environment, on sustainable development, on the situation of injustice, and on social change [58].

This critical approach to service-learning assumes the political nature of service and promotes sustainable development and social justice over more traditional perspectives of citizenship. In this way, service-learning becomes an instrument of social and political reform.

5. Linking Service-Learning with the Principles of Sustainability in Higher Education

The European Commission's Renewed Agenda for Higher Education [59] encourages higher-education institutions to develop strong civic functions and underlines the importance of working with local communities. Many service-learning experiences have been developed [53,60–65]; however, there is still a lack of a clear regulatory framework that would facilitate its definitive implementation.

The Conference of Rectors of Spanish Universities has defined six Basic Principles of Sustainability in higher education [12]:

- Ethical principle.
- Holistic principle.
- Complexity principle.
- Glocalization principle.
- Transversality principle.
- Social responsibility principle.

To analyze the suitability of service-learning for the development of these six principles, each principle and its relationship with service-learning is described below.

Ethical principle: Higher-education institutions must strive to educate citizens by recognizing the intrinsic value of each person, emphasizing freedom and the protection of life as objectives of public policies and individual behaviors. The pursuit of this objective must be undertaken in harmony with the natural environment, and it must be conditioned by the need for equity, for respect for the rights of future generations, and for the encouragement of rational communicative and participatory procedures in decision-making.

In service-learning, students are not oblivious to ethical issues related to the actions that they undertake in the community. They must reflect on the scope of the action being performed and on whether this action should be considered their ethical duty, as citizens, or the ethical duty of the institutions through which the action is performed.

Thus, in scientific research, it is recognized that the practice of service-learning develops a sense of civic participation, allowing students to better understand the richness of diversity and awakening in them a desire for greater social commitment [44,51,52,66]. Some authors have emphasized that ethical aspects should not only arise implicitly, but should also be made explicit by educators [67].

Furthermore, the educator's role regarding the planning and implementation of service-learning is not exempt from the ethical dimension. The choice of actions, content, methodologies, and evaluation systems entails ethical and value-related decisions.

In the development of service-learning, educators encourage students to express their reasoned opinions about the problems that service-learning addresses, as well as to consider whether they believe that the actions taken contribute to the development of social justice and, if so, why.

Controversial issues are not avoided in service-learning. Educators should stimulate discussion so that students feel that their "voice" is an important part of the process. In this way, students develop their self-esteem, discover political commitment, and understand the importance of accepting differences. When students feel responsible for their own

learning and reflect on controversial ethical issues, the academic outcomes of their own learning improve [68].

Holistic principle: Higher education, in all its facets, must develop out of an integral and interdependent conception of the components of social, economic, and environmental reality. The adoption of ethical, ecological, social, and economic approaches to address issues related to environmental imbalances, poverty, injustice, inequality, war, access to health, consumerism, and so forth, implies a relational understanding of these processes, regardless of their various forms.

The projects selected to perform a service-learning initiative must be related to a critical aspect of community life, such as care for the elderly, for immigrants, for minorities, or for people who for any reason may require special attention. They might focus on supporting educational actions, such as literacy or adult education, or on the encouragement of healthy lifestyles in areas such as the prevention of drug addiction or hospital visits. Service-learning projects may also face environmental issues, such as the regeneration of damaged areas, the analysis of the situation of flora and fauna in specific areas, the analysis of the water cycle, energy consumption, and waste treatment in certain areas, or the planning and implementation of awareness campaigns. In general, any issue of socio-economic, cultural, or environmental relevance can be the subject of a service-learning activity.

Regardless of the chosen field of action, it is essential that the students know how to place the issue in the general social, economic, cultural, and environmental context. This means that they move from the concrete to the general and help to further the construction of a critical point of view on sustainable development, power, privileges, and inequalities, and social change [69].

Complexity principle: The adoption of systemic and transdisciplinary approaches that allow a better understanding of the complexity of social, economic, and environmental problems, as well as the involvement of all civil and professional activities.

Since service-learning activities are directed towards concrete actions in real contexts, they encompass all the complexity inherent in the real world. The acceptance complexity as inherent to social action is a critical learning outcome acquired by those who participate in service-learning activities. Students must necessarily develop systemic thinking; they must relate problems to each other and to their contexts; they must understand and accept the complex connections in social, economic, cultural, political, and environmental systems.

According to the National Youth Leadership Council [70], participants in service-learning activities undertake the following activities:

1. The investigation and analysis of complex situations. Students must identify the needs on which the action is based. In order to identify these needs, the student must conduct visits and discussions, and search for background information and ideas that enable them to understand problems.
2. Planning based on the needs identified. Students link the curriculum to the need that they address and the type of activity they develop.
3. Actions in collaboration with other agents that may have worked on the needs to be addressed for a longer period of time. The type of action may be direct or indirect, temporary or continuous, and, in some cases, it may be intended to become permanent in the long term.
4. Reflection on actions. This reflection is an essential element of service-learning. The student writes down what he/she undertakes and experiences, discusses it in groups, evaluates it continuously, and makes decisions throughout the project to improve the action developed.
5. The demonstration and exhibition of achievement. The student learns and communicates what he or she has learned to peers and other agents of social change. Part of service-learning is learning to synthesize experiences and to transmit them to others in an attractive and convincing way, using media such as various types of presentation, advertisements, web pages, videos, or any other type of campaign.

6. The evaluation of the service-learning experience. To develop this evaluation, the student also surveys the beneficiaries of the service and other agents collaborating in the same field of action. The objective is to ascertain whether the service activity undertaken genuinely contributes to social change in relation to the need that was initially identified.
7. Celebration. Indeed, students who participate in service-learning activities become aware that celebrating their achievements is an effective way to consolidate them and to encourage others to follow the same path.

In short, service-learning projects are not only actions; they involve a strong analytical and critical component. Service-learning could be considered an activity with an intellectual facet. However, at the same time, it is a form of activism that promotes inclusion and tolerance towards multiculturalism based on values, all centered on students [38].

Glocalization principle: The adoption of approaches that establish relationships between curricular content and local and global realities.

Service-learning is an effective way of approaching the global from the local, of approaching general problems from concrete problems. This way of learning has been proven to deliver good results since its first applications [55], perhaps precisely because the curricular content is integrated with concrete and real experiences. When activities are meaningful, they attract students' attention; the key is, therefore, for the activity developed be integrated into the curriculum and, at the same time, be relevant to the community to which it is addressed [71,72].

It is crucial that service-learning projects offer students the possibility of developing in his or her program of study by collaborating effectively with the local community, while reflecting on the scope of his or her action at a global level. Therefore, it is essential that students analyze and understand the complexity of the problems they examine, beyond their apparent simplicity, make decisions, take action, and constantly evaluate in order to understand the dynamics of social change and how local actions can affect the global order [73].

Reflection may be the most distinguishing element of service-learning [71,72,74,75]. Only through reflection do activity take on their full meaning. Students understand social problems, develop the cognitive capacity to allow him/her to face new challenges in the future, as well as identifying them, framing them, and proposing ways to solve complex social problems [46].

Transversality principle: The integration of the content aimed at the development of competencies for sustainability in the various areas of knowledge, subjects, and degrees. This content is applied at different levels of management, research, and knowledge transfer in higher-education institutions.

The activities undertaken within the framework of a service-learning project are cross-curricular. They can affect different areas of knowledge, subjects, and degrees. All areas of knowledge can incorporate service-learning as a methodology. It is an active pedagogy that links community service with curricula without, theoretically, the exclusion of any area of knowledge a priori. The combination of academic learning and service to society can enrich all undergraduate or graduate programs of study, or even specialized courses.

Moreover, to the extent that higher education is designed to contribute to sustainable development, this active methodology offers the opportunity to make a concrete, assessable, and integrated contribution to the curriculum. Opting for this methodology allows educators to link knowledge to the resolution of problems closely related to social justice and the SDGs [35,55,73].

Principle of social responsibility: The contribution of higher education to the sustainability of the community. It is reflected in internal management and collaboration with entities and organizations in research projects and in actions that contribute to improving the quality of higher education and progressing in the solution of social, economic, and environmental problems.

Service-learning is an effective way to achieve the proposal made by the United Nations General Assembly in 2002: that higher-education institutions around the world contribute to sustainable social development by employing methodologies that develop not only professional skills, but also civic competencies and a deep sense of social responsibility among students [4].

Service-learning contributes to the generation of a culture of commitment to the social and economic development of the communities that higher education is designed to serve. The number of higher-education institutions worldwide incorporating service-learning projects continues to grow, albeit slowly [76].

It should also be kept in mind that service-learning, however simple the project in question may be, always involves collaboration with other institutions (other universities, non-governmental organizations, city councils or other public institutions, foundations, companies or other private institutions). This collaboration with other institutions is a way for higher education institutions to participate in the network of agents that promote change in society, oriented towards social justice and the achievement of the SDGs. It is a way to move beyond the boundaries of institutions without losing the academic orientation of the actions undertaken.

In the social action that service-learning involves, both society and students benefit, which is why it is often claimed that it involves reciprocity [72]. Furthermore, educators also benefit, in that they gain the trust and understanding of other institutions and, through the development of service-learning projects, they transfer theoretical knowledge to social reality [71]. Mutual trust and understanding among all the agents involved in service-learning are necessary elements to ensure that the projects developed are not perceived as preconceived solutions far from real needs [73].

Finally, the principle of social responsibility is evident in that service-learning activities are grounded in continuity and are conceived and developed in such a way that communities can maintain them once the students finish the program. When this occurs, it is because there is a process of empowerment and transfer, in which service-learning serves as a vehicle between institutions and society [77,78]. When all this takes place, service-learning is an effective tool for sustainable development [79].

6. Conclusions and Future Directions

Higher education is called on to reflect on the SDGs in its programs [80–83], to develop proposals that integrate sustainability into curricula [84–87], and to take the 2030 Agenda into account [88]. However, it is not sufficient to promote the acquisition of knowledge on sustainability; higher education must also facilitate the use of methodologies as models of sustainable development for students. One of these methodologies is service-learning: a pedagogical strategy that engages students in service, and a means of education about, for, and from sustainability that complies with the principles of sustainable development in higher-education environments. Therefore, it can be concluded that, as well as an educational tool for sustainable development, service-learning is an intrinsically sustainable educational action.

From the perspective of sustainability, service-learning would be a more powerful tool if it worked with an explicit focus on sustainable development, guiding all its phases, from the first moment in which the social and environmental needs are detected to the final phases of celebration and dissemination. Reflection on projects' contributions to sustainable development are essential. Service-learning projects should explicitly contemplate the development of transversal competencies for sustainability [12].

To genuinely empower the use of this methodology in higher education in order to promote sustainable development, the institutionalization of service-learning must be supported, ensuring that all students have access to this type of project throughout their studies.

The future challenges that must be faced in the institutionalization of service learning with the aim of promoting sustainable development include [41,43,46]:

- Training in the service-learning methodology.
- The contextualization of projects in their environments.
- The recognition of the work of educators, who dedicate significant time to developing projects, and of students, who participate in these projects.
- Financing for the projects and the creation of offices or units that support and facilitate them.
- The design and application of instruments to evaluate the impact of projects on sustainable development, as well as on students, educators, social entities, and institutions themselves.
- The design of quality indicators to improve practice and research on service-learning as a tool for promoting sustainable development.
- Longitudinal studies on the effects of this methodology from the perspective of sustainability.
- A systematic review of current research on service-learning as a tool for educating for sustainable development.
- The assessment of the sustainability of projects.
- The valuation of the institutional programs supporting this methodology.

As a perspective paper, this manuscript has some limitations. The main limitation is its subjectivity, as it reflects the authors' personal opinions, beliefs, and biases. It also has a limited scope, in that it focuses on specific arguments for the analysis of service-learning as an approach to education for sustainable development.

In recent years, the use of service-learning in higher education and its institutionalization have become widespread. There is no doubt that service-learning is a powerful tool because it makes it possible to solve real problems by linking curricular learning with practice. But it is necessary to move forward and explicitly link this methodology with education for sustainable development in the higher-education context through a systemic approach [53,73].

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