Service-Learning and Digital Empowerment: The Potential for the Digital Education Transition in Higher Education

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Posted Date: 13 December 2023

doi: 10.20944/preprints202312.0979.v1

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Article

Service-Learning and Digital Empowerment: The Potential for the Digital Education Transition in Higher Education

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Abstract: In an era driven by technology and connectivity, where the sphere of learning goes beyond conventional classrooms, e-Service-Learning (e-SL) merges the possibilities of technology with the principles of experiential education in a powerful blend [1]. Service-learning (SL) is an educational proposal that has been cited by UNESCO [2] as an innovative educational tool through which to address the complex challenges of our society. The Sustainable Development Goals [3] provide a framework around which to structure the SL projects and thus develop the skills needed to act on the full range of goals. Embedding digital means open a debate on the intricate relationship between technology, education, and societal impact [4]. By analyzing two focus groups involving faculty, students and community partners, this contribution aims to explore the potential of combining SL and digital empowerment (DE). The focus group participants discussed the opportunities for innovation, the expected impact on them and the society at large, their needs and the pre-conditions needed to make SL and DE successful, and limitations. The results are presented according to the six principles of sustainability education in the university environment, highlighting the transformative potential of combining these principles within SL and DE.

Keywords: service-learning; e-service-learning; digital empowerment; sustainability education; Sustainable Development Goals

1. Introduction

Service-learning (SL) in higher education is an experiential educational method in which students engage in community service, reflect critically on this experience, and learn from it personally, socially and academically. The activities address human, social and environmental needs from the perspective of social justice and sustainable development, and are focused on enriching learning in higher education, fostering civic responsibility and strengthening community engagement. SL is recognized within the European Credit Transfer and Accumulation System – ECTS [5].

This methodology can be used in all undergraduate and postgraduate degrees. Its integration in the curriculum can take different formats: integrated in the teaching syllabus, external internships, and final bachelor and master thesis programs. All teachers previously trained in this methodology can supervise a SL project, which must be linked to the content of the subjects they teach and to social organizations (associations, NGOs, foundations, public institutions, etc.). Key elements of SL include: integration in the curriculum, student voice, partnership with the community, reciprocity, reflection, and moral values [6].

SL actions are aimed at the environment and at people and groups living in scenarios of social disadvantage, focusing their actions on situations of social, educational and environmental injustices. Students reflect in a structured way, thinking, debating and writing about these realities, their origin,

 doi:10.20944/preprints202312.0979.v1

how to prevent and deal with them, and about the impact of the service on improving the environment and the communities, and on social change [7,8].

As an example, students of Optics and Optometry provide glasses for free or at a very low cost to patients without resources derived from social services and community organizations. They carry out dissemination and collection campaigns for disused glasses, which they then repair. Through this service, students acquire knowledge of ophthalmic optics, optical surfaces, applied technology, economics and management, equipment maintenance and operation, human relations, communication skills, and knowledge of the social environment.

1.1. Digital empowerment and service-learning: benefits and new challenges

The concept of digital empowerment (DE) is interpreted in different ways, depending on the group involved. It is important to understand the various nuances when delving into this topic. It can refer to the ability to use digital resources and tools, but it also requires knowing when and how to use them safely. Indeed, it seems evident that the development of digital skills should go hand in hand with "digital discipline" [9,10]. The objective of DE is to ensure that all individuals, regardless of their social and economic circumstances, have access to technology and to the possibility to exploit its potential [11].

The relationship between DE and SL is very powerful. On the one hand, more and more digital SL projects are being initiated [12]. As a result of the global pandemic of Covid-19, most university courses have been converted to an online format and SL has also been transformed into e-SL, according to different technological interaction types [13,14]. E-SL requires a generalized framework for all kinds of online services; in particular, to understand how projects can develop in terms of virtual design and how, and to what extent, technology can be included in projects [1,15–17]. On the other hand, more and more projects are being designed to address the real needs of vulnerable groups and to empower them (e.g. the one described in Beisser and Shulman [18]). Such is the case of the projects that emerged after the Covid-19 crisis, which started to digitize many of the services. The change in the usual procedures has been maintained over time and certain groups (such as older people, people with disabilities, people without access to the Internet, etc.) find it difficult to carry out procedures that they used to execute in person; these procedures include paying bills, registering for activities, applying for grants, booking accommodation, purchasing certain products, and so forth.

But it is not only these groups that need help: young people, although they use many digital tools, also need training in digital competence. *"Although students now are digital natives, they can still fall for the same perils as other groups, such as fake news and improper data handling, and need faculty who are more skilled than them"* [9] (p. 8). In this sense, promoting students' participation in SL projects gives them the opportunity to solve real problems, using digital tools in a responsible way.

The benefits of the link between DE and SL include the following:

- The use of digital tools helps to overcome barriers and to make it easier for stakeholders to communicate and to use collaborative spaces. Undoubtedly, one of the great advantages is that, thanks to the use of digital resources, the social inclusion of priority groups can be favored. For example, digital tools make it possible to set up SL projects in which university students get involved in rural environments that are normally far from universities, or they facilitate contact with groups with reduced mobility. Individuals learn to develop strong relationships using digital technologies with individuals with whom they would otherwise never interact [19].
- ICT can enhance the personalization of the educational experience in SL because it can *"facilitate the delivery of learning materials to students, assessment, student tracking, collaboration and communication"* [20] (p. 236).
- SL projects have a greater impact when combined with DE [21] and allow for international collaborative partnerships [22,23].
- The integration of SL with digital technologies can broaden, deepen, and integrate civic and humanistic outcomes in learners' developmental pathways, which includes teachers,

 doi:10.20944/preprints202312.0979.v1

institutions of higher education and community members in being full participants in democratic society and promoters of changes that will foster equity and justice [19].

- SL programs that connect students with community partners to solve real problems, even in the virtual dimension, help students develop soft skills. For example, according to Culcasi, Russo and Cinque [13], e-SL provides students with opportunities to practice and improve leadership and self-evaluation skills as well as to recognize the need to develop digital skills for their future career.
- The most successful university SL projects involve students directly with community groups to address specific problems. These projects usually entail large investments in both time and financial resources for the students to travel and collaborate with local residents involved in the service opportunity [24]. The creation of a database would allow students to work on, research, and solve real-world problems while at their home institutions, with no additional financial outlay [22,25].
- It is possible to co-create dynamics and critical reflection in a hybrid pedagogy that may increase access to more people, thereby democratizing participation by more and varied individuals (e.g., home-bound, non-traditional, working, rural, other nationalities) [19].
- Higher education institutions benefit from being able to promote different methodologies that make it possible to combine *"formative versus summative, flexible versus rigid, hybrid versus offline, synchronous versus asynchronous"* [9] (p. 13).
- Autonomous learning is encouraged and the student becomes a researcher who seeks information to achieve his or her learning objectives and creates his or her own strategies [22].
- SL can influence the emerging citizenship of university students and the technological empowerment of seniors in their campus communities [18].

These numerous benefits have led some authors to posit that e-SL transcends being merely a type of SL, representing the future of SL [14]. While the many advantages are undeniable, it is crucial to delve into the concerns inherent in the relationship between DE and SL. One of the concerns when partnerships and associated service activities are virtual, is the risk of less fluid relationships and truncated interactions and learning opportunities. There may be technologically based complications related to the unreliability of the ICT as well as socially-based issues of unequal access to and familiarity with digital technologies [19]. Along the same lines, García-Gutiérrez, Ruiz-Corbella and Manjarrés-Riesco [26] highlight technological problems and the communication challenges that they entail as disadvantages. Issues such as internet problems, poor connection, or equipment malfunction are also identified in other studies, which often associate them with socio-economic problems and a lack of personal resources (e.g., Culcasi, Véliz, Serrano and Russo [22]). Thus, according to [19], it can be said that SL shares many of the concerns regarding current trajectories of higher education that may characterize the incorporation of digital technologies in education: exacerbating existing social divides, conceptualizing teaching as mere transmission of information, constraining pedagogical design that is sensitive to differences among individual students and contexts, and evoking consumer-oriented narratives of education [27].

On the other hand, the results of research conducted by Culcasi, Véliz, Serrano and Russo [22]. highlight the difficulty of working remotely with unfamiliar individuals. They point out challenges in coordinating and managing time based on different schedules and needs, as well as the difficulty of being proactive in the group and motivating each other to make the most of the experience. Thus, it is evident that maintaining direct interaction with the community partner and creating a genuine connection based on a profound understanding of their needs is not easy. The impersonal nature of relationships within the working group is also emphasized. Additionally, the authors highlight the risk of excessive use of digital tools and its consequences on physical and mental health, as well as concentration.

Therefore, according to [28] (p. 92), some of the challenges that need to be addressed when SL is integrated with digital technologies are the following:

1. Tailor assignments to accommodate students' cognitive and intellectual developmental levels;
2. Provide timely, constructive, personalized feedback.

 doi:10.20944/preprints202312.0979.v1

3. Ensure large number of students integrate and transfer what they are gaining from their SL experience.
4. Enable faculty to become confident and competent in using engaging pedagogies that make SL developmentally powerful.

Finally, according to [26,29], it should always be kept in mind that e-SL technology represents mediation and should always foster solidarity and its social function.

Despite research on e-SL, especially from the pandemic onwards, there is still much to be investigated with respect to innovative potentials and risks in relation to DE [30]. Moreover, it is interesting to investigate the needs related to the combination of SL and DE, both in terms of the requirements of the actors involved and in terms of the type of social response. This paper highlights the points of view of the different actors involved in SL and DE with respect to: needs, innovation, potential to transfer best practices, expected impact, and limitations. Results will be presented according to the six principles of sustainability education in the university environment [31,32]:

1. Ethical principle: The university must strive to educate citizens by recognizing the intrinsic value of each person, placing freedom and the protection of life as objectives of public policies and individual behavior. The search for this objective must be carried out in harmony with the environment and conditioned by the need for fairness, for respect for the rights of future generations and for the stimulation of communicative and participatory rationality procedures in decision-making.
   SL recognizes the implicit controversy in the different aspects of the problem that it addresses and encourages analysis and debate on the values involved in each project, so that students recognize the ethical and controversial nature of the problem that is the object of the action [33].
2. Holistic principle: The university, in all its facets, must act from an integral and interdependent conception of the components of the social, economic, and environmental reality. Assume ethical, ecological, social, and economic approaches to address problems related to environmental imbalances, poverty, injustice, inequality, armed conflicts, access to health and consumerism, among many of the social challenges. It implies a relational understanding of processes, regardless of their various manifestations.
   SL projects require faculty to focus on social responsibility and critical issues for the community. They use a holistic approach that facilitates the understanding of issues from different perspectives. It teaches students to critically question society and emphasizes sustainable development and social change [34].
3. 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 their involvement in all situations we can encounter as citizens and professionals.
   SL works with real and complex problems, which facilitates the development of systemic thinking and the understanding of related problems and the connections between social, cultural, economic, political, and environmental systems. This is possible thanks to the fact that, in SL projects, the participants carry out different actions [35]: 1) investigate problematic situations; 2) plan the project; 3) carry out service actions by collaborating with each other and with community partners; 4) reflect in a structured way to analyze, evaluate, improve the project and integrate the experiences; 5) demonstrate and disseminate what they have learned and the service that has been provided; 6) evaluate the phases and results of the project with the participation of the different actors; and 7) celebrate the lessons learned and the achievements of students.
4. Glocalization principle: The adoption of approaches that establish relationships between curricular content and local and global realities.
   SL activities not only offer services to the community; they also enable students to carry out important academic and professional learning while identifying the needs of the local and global community, analyzing problematic situations, making decisions, acting, reflecting and evaluating, and understanding best how to create sustainable community change [36].
5. Transversality principle: Integration of content aimed at educating in competencies for sustainability in the various areas of knowledge, courses, and degrees. These competencies will

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be applied to the different levels of management, research, and knowledge transfer at the university.

SL is applied in courses of different disciplines and across all university degrees. In any subject, knowledge can be transferred to solve problems related to a sustainable future and social justice [37,38]; and through projects aimed at natural and social sustainability, significant learning can be achieved in all areas of knowledge. Indeed, there are multiple published examples of SL projects connected to different areas of knowledge. This methodology can be used in undergraduate and postgraduate degrees, associated with specific subjects, and also in specific SL courses for one or all degrees, or within the framework of external internships.

6. Social responsibility principle: Contribution of the university to the sustainability of the environment and the community. This will be reflected in the internal management and in the collaboration with entities and organizations in research projects and actions that contribute to improving the quality of university education and progress in solving social, economic, and environmental problems.

SL is based on the fact that, in order to make the university's principle of social responsibility a reality, collaboration with other social and educational organizations is necessary. Any SL project, no matter how small, requires the participation of other entities, such as associations, NGOs, foundations, municipalities, or public institutions. But this collaboration must involve reciprocity; that is, that both the student and the agents of the organization benefit from the relationship [39,40]. Moreover, the sustainability of the community capacity-building when the SL project finishes must be considered; if that does not occur and if the community needs persist, it is necessary to reflect on the need to sustain the project [20].

2. Materials and Methods

2.1. Aims and scope

This study aims to explore the perspectives of students, faculty and community partners on the combination of SL and DE under the sustainability education principles. The scope is to take a broader view of this topic by identifying traces of a more open and critical discourse on SL and DE in the current HE framework.

2.2. Participants and procedure

The current study was conducted in [masked for review] between February and March 2022. There were nine participants (90 percent female), aged from 24 to 57 (M = 35.1, SD = 11.83). The majority of participants were born in [masked for review] (95.0%) and have a connection with the University [masked for review]. Specifically, they were: one student of the science of education; four alumni graduated in the science of education (2), science of primary education (1), and psychology (1); one Ph.D. student in psychology acting as trainer in SL as well; one researcher (and trainer in SL) in education; one lecturer in education; one community partner, representative of both a company and a non-profit organization. All participants have participated in at least one SL project as a student, teacher, researcher, or community partner.

The study adopted a qualitative approach. Two focus groups were conducted. Each one involved four/five participants, according to their availability, and lasted an hour and a half. The focus groups were conducted online and recorded, using the Zoom application. Two researchers participated: one moderated the focus groups, while the other took notes of the discussions.

The research followed the guidelines of the European Project SLIDE [4]. Participation was voluntary, and all those gave their written informant consent. The research protocol was in accordance with the Declaration of Helsinki of 1964 and its latest version [41]. Moreover, the main researcher of the study completed the CITI Program course Human Subjects Research (Certification number: masked for review).

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2.3. Focus group

During the focus groups, participants were introduced to the purposes of the European Project SLIDE [42] and the focus group. They were asked to answer nine questions divided as follows:

- one question aimed at having participants describe the relevant features of SL and DE, respectively;
- two questions focused on the needs that SL and DE can address, with a focus on inclusion;
- two questions were about the innovative effects of SL and DE;
- one question on the potential impact of SL and DE;
- two questions on how SL and DE development can be supported.

An example of a question is: "What do you think are the main features or most important aspects of service-learning? And what are the main features or most important aspects of digital empowerment?"

2.4. Data analysis

Data collection tools, such as the interview guidelines and the results template, were developed in English by the SLIDE project result leaders [4]. The native [masked for review]-speaking researcher translated the questions independently and discussed it with a specialist to ensure conceptual equivalence. Real-time conversations between the researcher and participants in the original language were recorded. Interview transcripts in the original language were translated verbatim into the language for publication before data analysis [43]. The back-translation procedure was adopted.

The information gathered was analyzed using the software package Atlas-ti version 23.3.0.

3. Results

The results are presented according to the six Principles of Sustainability Education [32], in order to examine the different perspectives on how SL, enriched with DE, is consistent with these principles. To this end, in order to analyze these macro-categories of principles, the focus was placed on five sub-categories, which are detailed below:

- Needs: this category considers the needs related to SL and DE. These could concern both what actors consider important to be able to implement SL and DE, and what SL and DE can intercept and thus address from a social need perspective.
- Innovation: this category concerns the potential of SL as a pedagogy, of DE as a tool for social participation and the potential of combining these two elements; it also emphasizes what innovation each of these elements can generate.
- Limits: this category takes into account the critical elements concerning SL and DE and the link between them, also considering possible negative effects or undesirable outcomes that can be generated.
- Potential to transfer best practice: this category includes the aspects that participants consider prerequisites for SL and DE or for SL combined with DE to be implemented.
- Expected impact: this category analyzes the benefits that SL and DE, and SL combined with DE may generate both on the actors involved, and on society as a whole.

3.1. Ethical principle

Regarding the ethical principle, the perspectives of students, faculty and the community partner was codified into ten sub-categories: innovation (for students, faculty, and the community partner); limits (for students and faculty); potential to transfer best practices (for students), needs (for students and the community partner); and expected impact (for students and faculty). As shown in the force-directed graph represented in Figure 1, the most recurrent sub-category related to this principle is *innovation (students)*, highlighting the potential of SL and DE to make the ethical principle a concrete practice.

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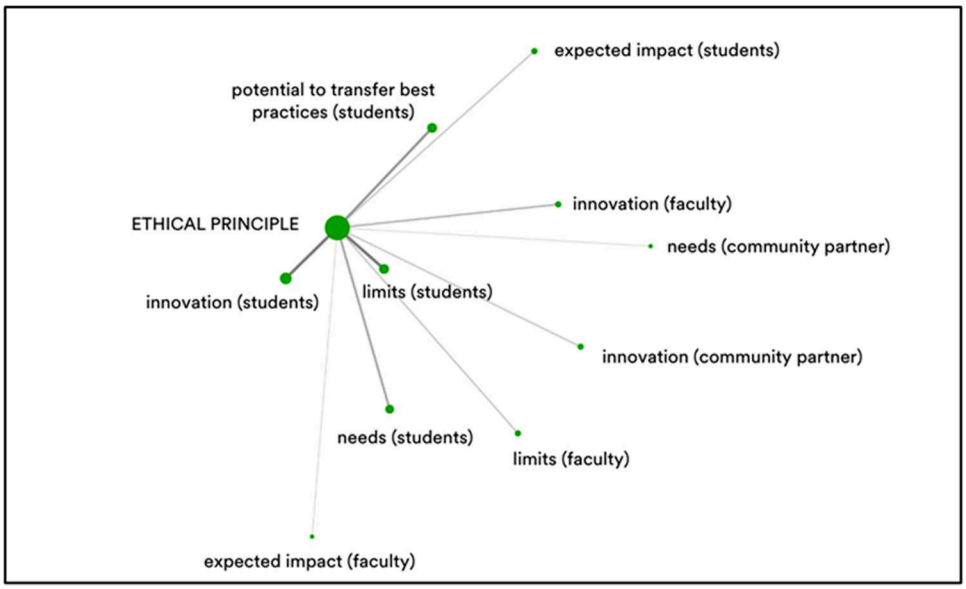

Figure 1. Ethical principle: code co-occurrence analysis force-directed graph. Source: Atlas-ti version 23.3.0.

3.1.1. Innovation

Starting from the students' *innovation* sub-category, several aspects emerge. Among these, an innovative element of SL is making concrete the participative dimension of each individual and recognizing the value of citizenship: *"the person involved is an active part of the process and is not seen as a passive subject because we should all be active citizens"* (S3). Another innovative element of SL consists in conveying the value of respect for each human being and context, so: *"there isn't a social need of series A or series B"* (S5). In terms of the connection between SL and DE, it emerges how the digital aspect is a booster of the inclusive dimension, creating a virtuous circle in terms of awareness; this is what one student states when she replies:

> *"The digital world allows not only the inclusion of the most disadvantaged people in a more general context but, at the same time, allows that more general context –the social– to be more sensitive to certain issues, to have a careful perception towards those issues" (S5).*

In some cases, digital tools can make a difference in inclusion (e.g. speech synthesis for speakers of other languages) or, also in the case of shy people *"the filter of the screen allows even more emotional circulation than could happen in person"* (S5).

Also, according to the teachers, the most innovative aspect of SL and DE is allowing individuals to be active participants in society. In this view, DE *"is a component of great innovation, in the sense that it puts the person in a condition of active subject and not object, and it is a tool for inclusion, making everyone a protagonist"* (E2).

The community partner's vision also emphasizes the idea of democracy that SL brings, that it is able to reach everyone. DE allows people to participate in society *"whether it is a society of adolescents, children, but also of older people, schools, etc. [...]. In Service-Learning, technology helps us to participate"* (C1). Above all, from the perspective of inclusion, SL and DE allow differences to be respected: *"I don't include you because I make you like me and this is a principle that absolutely must be brought into education and social projects"* (C1).

3.1.2. Limits

According to the students, there are several limitations of combining SL and DE: one element is the social inequality that affects participation, especially considering the ever-changing digital environment; indeed, one student states: *"Does a SL project reach everyone? Not always. Does it reach everyone who has the means to participate and where they don't have the means, they are reached if someone*

 doi:10.20944/preprints202312.0979.v1

else funds them to have the connection?" (S1). Furthermore, in terms of inclusion, although there are many digital tools that facilitate the participation of, for example, people with disabilities, "*the limitation is that in the educational contexts it is often not easy to find tools that can actually meet specific needs, either because they are not available or because they are too expensive"* (S4).

Also, according to the faculty, the limit of DE could be exclusion: "digital is a language, a channel. By now, beyond the fact that he/she may not want it, he/she remains excluded if he/she doesn't use this language" (E3). Moreover, in terms of DE, the other side of the inclusion is to confuse it with assimilation; this concept, also taken up by the community partner in terms of innovation, is highlighted here in detail as a risk. A lecturer states: "Encounter is good, but it is also tiring if I don't want to assimilate you, if I don't want to make you like me [...]. Hence, the great risk of SL is considering people with fragility as recipients of help instead of activating pathways to make them protagonists of help" (E3).

3.1.3. Potential to transfer best practices

This sub-category only appears in relation to the student. According to them, in order to maximize the innovative effects of DE and SL, a prerequisite is to consider the socio-economic context of the target group: the access to an appropriate environment and the availability of digital resources. Another aspect that emerges is continuous digital training for all actors involved, including community partners. From an ethical point of view, training allows "*not to lose sight of the human value that service-learning and digital empowerment have"* (S3). What the students think should be learned is how to manage the digital so that it can be a mediator of relationships and encounters *"because it will become the mixed modality of the future"*(S2); it's important to keep citizenship, listening to others, and feeling part of a whole, at the center.

3.1.4. Needs

The students emphasize two specific needs: "*know how to do"* –in terms of DE– and *"know how to be"* (S3), to be in an equilibrium between human and digital, to balance "*these forces"* (S2) without losing track of the project's objective. One student, for example, recounts that during the pandemic she created an Instagram page of social activities for preschool children *"to fill the need to create a scent of play, of normality, and it was only possible with digital tools"* (S2). Another fundamental need brought to attention by the students is the need to communicate and thus the need to find the right mediation channels to express themselves also in the digital environment, while maintaining a level of flexibility to ensure inclusion. In this sense, a student with disabilities states: *"Not having maybe the right tools to express myself many times has limited my participation in educational or social contexts"* (S2). Therefore, in order to be able to respond to the need to communicate, a flexible context, in which everyone can find their own way and time to express themselves, is necessary.

Community partners also emphasize the need for inclusion, which also means making sure that all actors have access to digital tools, especially in socially vulnerable contexts. In this line, SL and DE should go together because they face a lack, a need, or a criticality.

3.1.5. Expected impact

According to the students, SL has an impact on the integral development of the person. In particular, the practice of SL can become an approach to one's own life path. In this regard, one student states: *"I started doing service-learning four-five years ago, and I can say that I still do it now, every day, because it really becomes a way of life, so the impact that service-learning has on people is very strong"* (S1). Another student says: *"beyond the impact on skills, service-learning really forms you on a spiritual level, on a soul level"* (S3). As far as DE is concerned, according to the students, it has an impact on practical skills that make each person able to choose how to participate. For one student, this applies to empowerment in general:

> *"In my case, because of my disability, I need a figure to accompany me in the various life contexts in which I participate and this person is my mediator. If this person were not there, I would be excluded*

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because I do not have certain skills. But I have this help, and it is like a multiplayer game. This is also, in my opinion, digitalization. Empowerment has a strong impact on life in general, on participation" (S2).

According to the faculty, SL generates empowerment:

"We have always said that the idea of service-learning is to make that aspect of protagonism possible. Then, in that perspective, also having the service-learning its own history on digital, it can promote a certain dimension of protagonism and digital empowerment" (E3).

3.2. Holistic principle

Regarding the Holistic principle, it was possible to codify the perspectives of faculty and students into seven sub-categories: needs (for students), innovation (for students and faculty), potential to transfer best practices (for faculty), expected impact (for faculty and students) and limits (for students). As shown in the force-directed graph represented in Figure 2, the most recurrent sub-category related to this principle is "needs (students)" highlighting the presence of multi-dimensional necessities related to this specific principle.

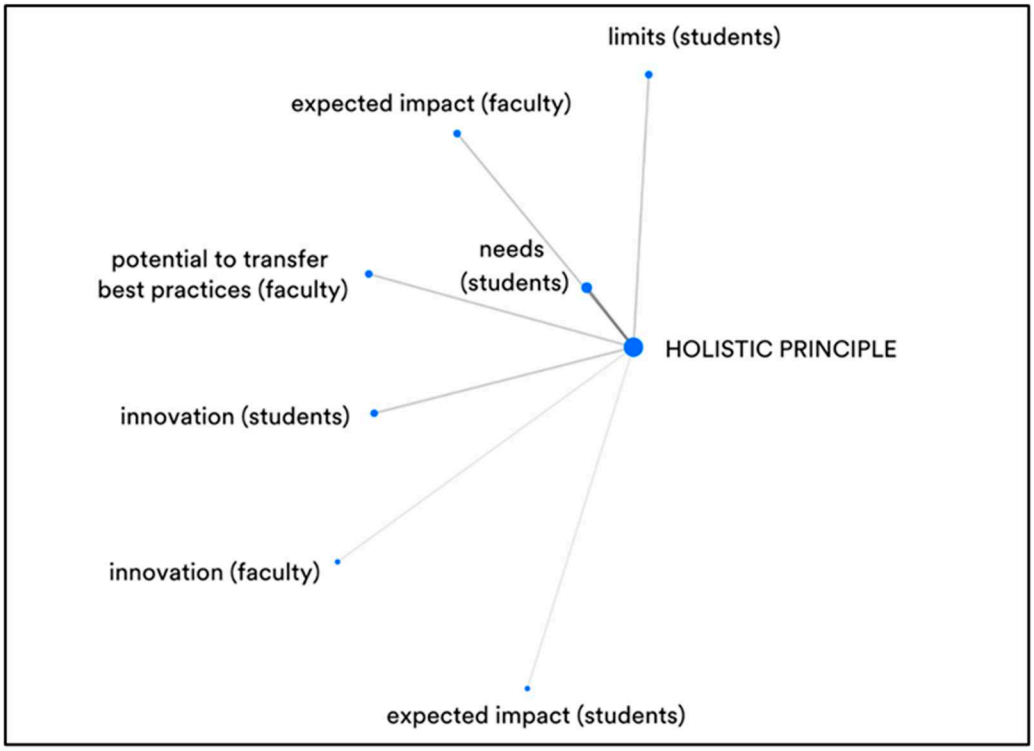

Figure 2. Holistic principle: code co-occurrence analysis force-directed graph. Source: Atlas-ti version 23.3.0.

3.2.1. Needs

On the students' needs side, a first aspect is to be able to intercept the social needs of underprivileged people, acquiring a critical point of view on inequalities and privileges. One student, concerning the needs of priority groups which SL can reach, mentions a project with unaccompanied foreign minors, and states that the needs of the involved beneficiaries were:

"on their day to day life: what do I do? What will happen after this project? Now yes, I come here, we are together, but then in the work and social spheres, am I really included? Am I able to be part of the community? Am I in?" (S3).

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Furthermore, according to the students, in the holistic approach to social problems the digital dimension allows them to experience *"other facilitators and especially in other ways"* to which they slowly become familiar (S2).

3.2.2. Innovation

From an *innovation* point of view, both the students' and the teachers' vision emerges. According to the students, DE in SL allows for an integral approach to reality because it also considers the digital sphere, which nowadays has a specific weight in everyone's life. In some cases, students compare project processes that began before the pandemic and continued in the online dimension, emphasizing *"two totally different paths in terms of digital approach"* (S3), and believe it is enriching to add the digital dimension: *"it was also useful and effective because the minors who were beneficiaries of the service found themselves living connected realities, anyway"* (S3). It is therefore interesting to act on DE because it is a *"mediator of reality"* (S1) and is interconnected with all aspects of society. In holistic terms, and in the sense of relational understanding of the processes, the students also emphasize the innovation of the digital container – *"an immense container"* (S5) – in being able to relate to different target groups and expand their perspective on the issues addressed through SL.

According to the faculty, innovation lies in the *who* and *why* of SL. Regarding the *who*, one faculty member states:

> *"I believe that service-learning is for everyone, for all ages, for all social conditions, for all cultures; and this is a strength. Indeed, it has spread globally and is applied in different areas also in formal and non-formal education. Therefore, it is for everyone" (E2).*

The teacher describes SL as a model capable of catching the complex relationships between even very different phenomena and contexts, precisely because of its pedagogical structure. On the *why* of SL innovation, the teachers refer to the quality and reciprocity of learning and the *"social transformation"* (E2) this entails. An educator states:

> *"With service-learning, you learn more; you learn better. It increases motivation and, in this sense, it is an inclusive pedagogy because everyone learns and everyone can participate, and because it is a tool for citizenship and transformation" (E3).*

Also, with regard to DE, one teacher says: "I think digital is also for everyone; digital has reached citizenship" (E2). Indeed, DE brings innovation to SL because "You cannot leave out the digital dimension. So, I think that those who do not have this empowerment remain excluded" (E2).

3.2.3. Potential to transfer best practices

The sub-category "Potential to transfer best practices" only emerges in relation to teachers. To have successful projects, faculty consider it necessary to link the dimension of social services with technological aspects; one teacher states: *"In my opinion it would be desirable for this to happen because I think that the further we go, the more it is necessary for all teaching, whatever it is, to go hand in hand with technology"* (E1). Moreover, to facilitate the understanding of problems from different perspectives, teachers believe that: *"In order to perform service actions, one must prepare oneself adequately. Reflection is what makes service-learning a reality"* (E2). Thus, reflection is the prerequisite for teaching students to critically question society.

3.2.4. Expected impact

Regarding the 'expected impact' sub-categories, both the teachers' and the students' vision emerges. For faculty members, if one considers SL as a medium to promote DE, inclusion and diversity, some potential impacts are:

> *"student protagonist, meaningful learning and therefore the possibility to empower young people. [...] if I am actually afraid of losing control (this is a fear that teachers often have), and I think that learning is repeating what the teacher explained well in the previous class... then, it is not possible" (E3).*

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Another aspect that emerges is DE to approach problems of any nature more easily: "so, knowing how to use the digital tool as something that is pro-self, as a tool that can help us" (E1).

According to the students, the greatest impact of using digital tools coupled with SL is the more active participation. Indeed, one student states:

> *"I think about the lecture [...]. The teacher gives a traditional "vertical" lesson. [...] Instead, with digital tools, the teacher is on a horizontal level with the students because he/she is using the same tool as the rest of participants; and there can be different exchanges with the lecturer [...] So, it goes to unhinging what is a traditional 'vertical' lesson and it makes students more participatory because the more digital tools that are put into the lecture, the more quality exchanges you can have: we can do group work, we can do a [...] brainstorm, share a collaborative file, etc." (S1).*

3.2.5. Limits

The sub-category limits only appear in relation to students. While it is clear that a holistic approach can only be achieved if technology is also included, the latter can become a limitation if *"we reduce too much on the digital something that is precisely a concrete action"* (S4). Furthermore, the students point out the state of anxiety that *"sometimes a little bit related to the digital aspect"* (S5), and how in some cases they had *to "learn how to moderate these anxious aspects"* (S5).

3.3. Complexity principle

Regarding the complexity principle, the perspectives of faculty, students and community partners were classified into nine sub-categories: needs (for students, faculty and community partners), limits (for students), expected impact (for students, faculty and community partners), and innovation (for students and faculty). As shown in the force-directed graph represented in Figure 3, the two most recurrent sub-categories related to this principle are "needs (students)" and "limits (students)", highlighting the presence of multi-dimensional critical elements related to the complexity principle.

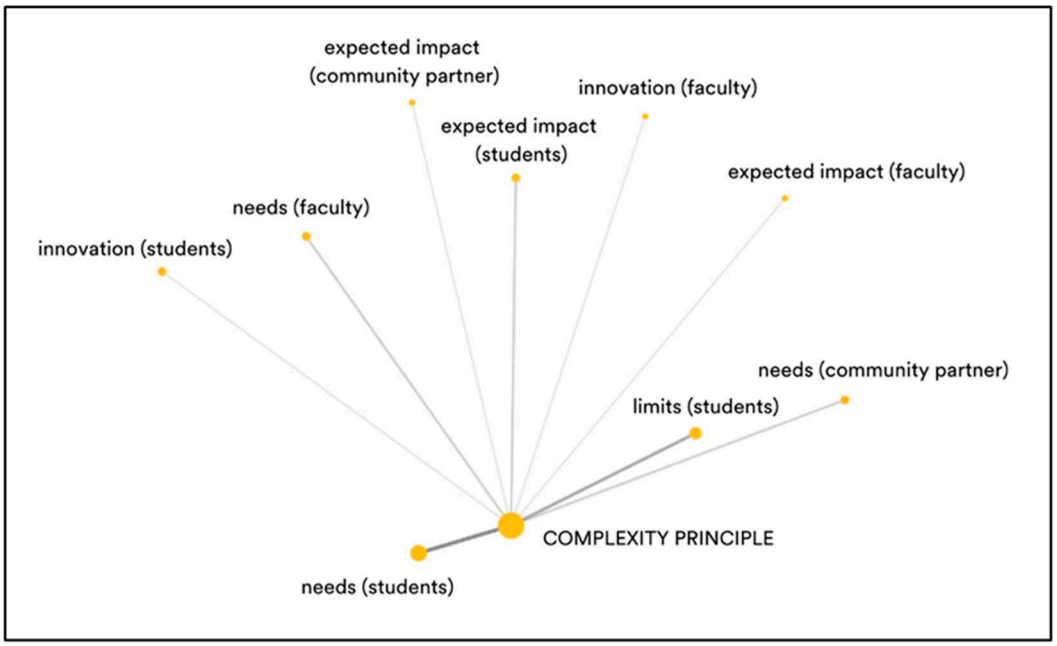

Figure 3. Complexity principle: code co-occurrence analysis force-directed graph. Source: Atlas-ti version 23.3.0.

3.3.1. Needs

Starting from the students' *needs* sub-category, several aspects emerge that highlight the need to go through well-articulated steps to embrace the complexity that reality imposes within the SL model.

A first element is the necessity to *"analyze the need: "What kind of context am I in? and what kind of need is there?"* (S2) across the implementation of a project; one student states that: *"in my opinion, the other very important aspect is the whole process of analysis that accompanies the project"* (S4). This stage of analysis makes it possible to 'simplify' complexity, to make it *"clear, simple, direct"* (S3). For the students, it is also important *"to go straight to the heart of the activity; therefore, to go straight to the point of the service concept, so that a person immediately has a vision, specifically, of what the project really is"* (S3). Thus, in their view, it is crucial to clarify the common goal, *"draw a line of action"* (S2) and only then find the practical tools, digital and non-digital, to address it. Obviously, the need to *"be able to have a very good knowledge of both service-learning and digital empowerment"* (S4) is emphasized. On DE, one student emphasizes that knowing it means: *"making it precisely inclusive and also an object that is sensitive to what the different needs are, different difficulties, frailties, depending on what the context is"* (S5). Specifically, with regard to tools related to DE, students stress the need to take them into account when proposing solutions that the teacher might not be familiar with; one student states that: *"sometimes it's really the teacher who pulls back, who hesitates, because it's always been done the same way"* (S1). Therefore, what emerges is the need to innovate strategies and tools when intervening in complexity, avoiding the idea that *"everything that is done about digital empowerment and digital goes to undermine the authentic relationship"* (S1). In this line, the need to maintain the right balance between digital and presential is also recalled, especially with regard to the acquisition of feedback. One student affirms:

> *"often in digital one gets lost or at least one gets a little bit detached from reality; that is, it might be a little bit distorted compared to what it really is. So, creating moments of confrontation, in presence, focused on feedback, on what you are doing, on how you are progressing, is crucial to adjust the focus where it is needed"* (S4).

In general, according to the students, SL:

> *"responds to wanting to do something versus just studying theory. Studying is fundamental; theory, notions. Without that, you go nowhere. However, what is missing in university is putting it into practice [...] of all the content learned [...]. For me to be able to participate in the service-learning experience was also an additional way to have both professional and personal enrichment that also answered a need of mine: for growth and putting into practice the content I had learned during my studies"* (S1).

On the faculty side, SL responds to the need for a didactic tool that fits well with the complexity of adolescence and young adulthood:

> *"That phase of life in which they have so much desire to do, to rebel against certain situations; they have so much energy and it is often an energy that remains confined to the peer group because adults almost never ask them what they want to do, what they need, what they think is important"* (E1).

Furthermore, it is emphasized that SL is an excellent tool precisely because "in adolescence, we feel some social problems intensely, much more intensely than how we feel them as adults, because we tend to delegitimize and because we learn to use disengagement mechanisms" (E1). Finally, like the students, the faculty stress the complexity of the SL processes; they therefore agree that it is necessary to work on a pathway made up of "different phases and steps ranging from motivation to diagnosis, planning, reflection and communication, in other words, an itinerary that they have to undertake" (E2).

As far as the community partners' view is concerned, SL is effective for "intercepting vulnerable territorial situations and for solving specific critical issues and often technology is part of the problem solving" (C2). Indeed, "digital is part of this because in situations of distress [...] we do not take for granted that even simple hardware is so easily accessible. So, the two aspects should go together because they solve a lack, a need, or a critical issue" (C1). However, before any type of intervention, the delicate and complex step of creating a bond of trust with the project's target group is emphasized: "for example, in our family home attended by this type of guest, it is very difficult to bring innovation because they tend never to trust the people they come into contact with, never!" (C2).

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3.3.2. Limits

The *limits* (of students) is the second sub-category in the code co-occurrence analysis force-directed graph (Figure 3). There are no specific references to limits from either teachers or community partners. Among the limitations, the complexity due to the pandemic of 2020 emerges, as it involved the complete transferral of SL projects into online delivery and, in some cases, this generated *"a lot of resistance from some university students [...] because it would not have brought the same result"* (S1). Indeed, according to them, while *"we shouldn't be afraid to use the tools we have"* (S1), on the other hand "*Digital without humans is worthless"* (S1). Furthermore, regarding this shift to digital, the students report that *"many times it is also difficult to use digital tools, because at the level of attention [...] it has less resonance than a physical presence, so it is a tool that both facilitates and reduces opportunities"* (S2). The complexity is greater when no specific training is offered; indeed, as one student reported: "*the context must also help the person to use these tools [...] in the best possible way"*(S2). Another limitation that makes it more complex to act in the digital dimension is the *"alienation"* (S5) that is generated by "*maybe concentrating too much on the digital aspect [...] so, the risk is to lose the focus a little bit"* (S4). Finally, it is interesting to note how the students highlight that the digital dimension is a reduction of complexity, also understood as richness, within a project; in particular, one student states:

> *"If I think about my service-learning experience, I repeat myself, because that's how I experienced it: I do the journey, the beauty of the journey, I go around [the city], I go to places, I meet new people. While with digital empowerment all these aspects are not there, because I'm sitting comfortably at home and I click and come back with the connection"* (S1).

3.3.3. Expected impact

In terms of the *expected impact*, the visions of faculty, students and community partners emerge. According to the students, SL can generate an impact in terms of developing systemic thinking, precisely because one works with real and complex problems, which facilitates the development of an understanding of the issues and the relationships between them. If SL is combined with DE, one also generates critical thinking in digital terms: *"taking the positive aspects and understanding what can be taken forward, what instead can become a limitation or something that maybe abusing it could then create the opposite effect, so it could become a negative boomerang"* (S4). Furthermore, a great expected impact is related to professional growth:

> *"I think that proposing service-learning is also an opportunity to say 'yes, ok, social is difficult but I can do something to feel useful' and maybe this can also become an opportunity not only for learning but also for work [...].So, I think the transformative value that is inherent in this is one of the positive impacts"* (S5).

According to faculty, the expected impact of the combination of SL and DE lies mainly in digital communication and therefore in systematization and reflection related to social problems; specifically, one lecturer affirms: *"the more you increase your digital skills the more you increase your ability to communicate and therefore to evaluate and reflect better"* (E2).

According to the community partners, the positive impact lies in acting in complex contexts by bringing digital innovation that can become a working skill and a bridge to society: *"in general, digital competence can be brought anywhere, especially in cases like these of people who are looking for work, looking for contact with society"* (C2).

3.3.4. Innovation

Finally, regarding the *innovation* sub-category, the visions of students and teachers can be analyzed. According to the students, the innovation of the SL lies in *"combining practical with academic life"* (S3), in other words in *"starting with something real, concrete, that can serve the community and then the whole process of reflection from the beginning to the end"* (S4). In general, "*combining service-learning with digital empowerment is a challenging venture because it involves innovation"* (S3).

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The teachers also state that the main innovation of service-learning is that "you can go beyond the classroom, to do a concrete service that responds to complex needs in the community and train for active citizenship" (E2).

3.4. Glocalization principle

Regarding the *glocalization principle*, the perspectives of faculty and students were classified into six sub-categories: innovation (for students and faculty), expected impact (for faculty), needs (for students), limits (for students), and potential to transfer best practices (for faculty). As shown in the force-directed graph in Figure 4, the two most recurrent sub-categories *are innovation (students)* and *innovation (faculty)*, highlighting the potential of the SL and DE to make the principle of glocalization a concrete practice.

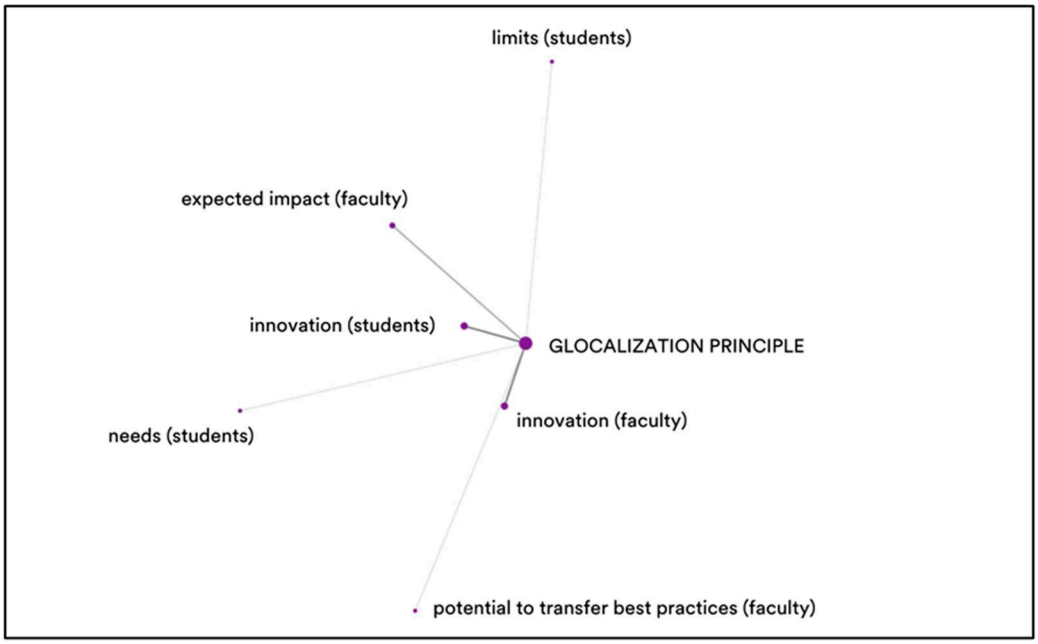

Figure 4. Glocalization principle: code co-occurrence analysis force-directed graph. Source: Atlas-ti version 23.3.0.

3.4.1. Innovation

Starting from the *innovation* sub-category, according to students, an innovative aspect of SL and DE is *"to reach people and places that otherwise probably would not be easy to reach"* (S1). In addition, dissemination is emphasized, understood both as the possibility of disseminating a project to people in other parts of the world who, thanks to technology, can participate, and in the sense of greater diffusion of the educational proposal and project results: "*for example the use of social media as a means to spread a certain practice, so maybe also to make a reality or an approach known"* (S4). In this line, the student emphasizes the immediacy that digital offers in SL, allowing both a greater circulation of ideas and a rapidity in receiving feedback: *"it is something immediate that allows you to have feedback really within even a second, [...] and therefore surely there is also much more circulation [...] of content, because [...] everyone can also simultaneously share something"* (S4).

On the faculty side, among the innovative effects of the combination of SL and DE we certainly find: "the possibility of openness to the global environment that technology allows, [...] to face global issues [...] to touch them, to interact with them" (E2). For faculty, too, the possibility of connecting with more people emerges: "our projects are more easily reachable, certainly they will be more easily publicized, [...], more people will be able to learn about service-learning" (E1). One lecturer, in particular, emphasizes the possibility of doing intra-university projects, combining SL and DE: "Just think how nice it would be to have a service-learning course with students studying journalism in

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Argentina, United States and [masked for review] to set up an ethical news site by having editorial staff on two different continents" (E3). In general, digital is seen as a tool to empower SL projects, as well as a language. It can also be the objective of projects: "It is no coincidence that, in our last service-learning workshop, all the projects were about creating blogs, Instagram pages, etc., because the pandemic emergency produced this" (E3).

3.4.2. Expected impact

Expected impact (faculty) is the second sub-category in the code co-occurrence analysis force-directed graph (Figure 4). According to lecturers, SL combined with DE enables the development of intercultural skills. In this regard, one teacher reports: *"I had the experience in an intercultural pedagogy class, for example, going to an indigenous community and doing art-work together for interreligious dialogue by doing a class with [masked for review] and Palestinian students"* (E2). Another aspect that is mentioned in terms of the impact generated by combining SL and DE is *"that different experiences can be networked"* (E2).

3.4.3. Needs and limits

Needs and limits are the two sub-categories that emerge only in relation to students. In terms of *needs*, the students highlighted how, having experienced the forced combination of SL and DE during the extraordinary moments of the pandemic, allowed them to realize how useful they can be even while staying at home, thanks to technology, and how they can address problems common to different parts of the world.

In terms of *limits*, students mention the risk related to the digital dissemination of SL projects, in other words, to export projects already done without taking the context into account. In this regard, one student says:

> *"the risk is that I read something, I discover a reality, I say ok yes it could be done, I do it as it is, without maybe making sure that it actually responds to my need, to the need of my reality; or maybe it actually responds to the need of my reality but because the people in front of me are different, the modality is not correct" (S4).*

3.4.4. Potential to transfer best practices

Finally, another sub-category is the *potential to transfer best practices* (faculty). According to faculty, the combination of SL and DE makes it possible to articulate a model of participation based on protagonism and reciprocity, in which digital requires showing another level of citizenship. In order to carry out quality projects, it is important to have a better understanding of the impact of digital skills in terms of global digital citizenship. In this regard, one teacher says: "*openness to the global seems to me to really require digital skills while in other cases it can be a support as technology can assist for example an autistic child and the computer can be a channel for him to interact"* (E2).

3.5. Transversality principle

Regarding the *transversality* principle, the perspectives of stakeholders were classified into ten sub-categories: needs (for students and faculty), innovation (for students and faculty), expected impact (for students and faculty), potential to transfer best practices (for students and faculty), and limits (for students and faculty). As shown in the force-directed graph in Figure 5, the two most recurrent sub-categories are *innovation (faculty)* and *innovation (students)*, highlighting the potential of the SL and of the combination of SL and DE to make the principle of transversality a concrete practice.

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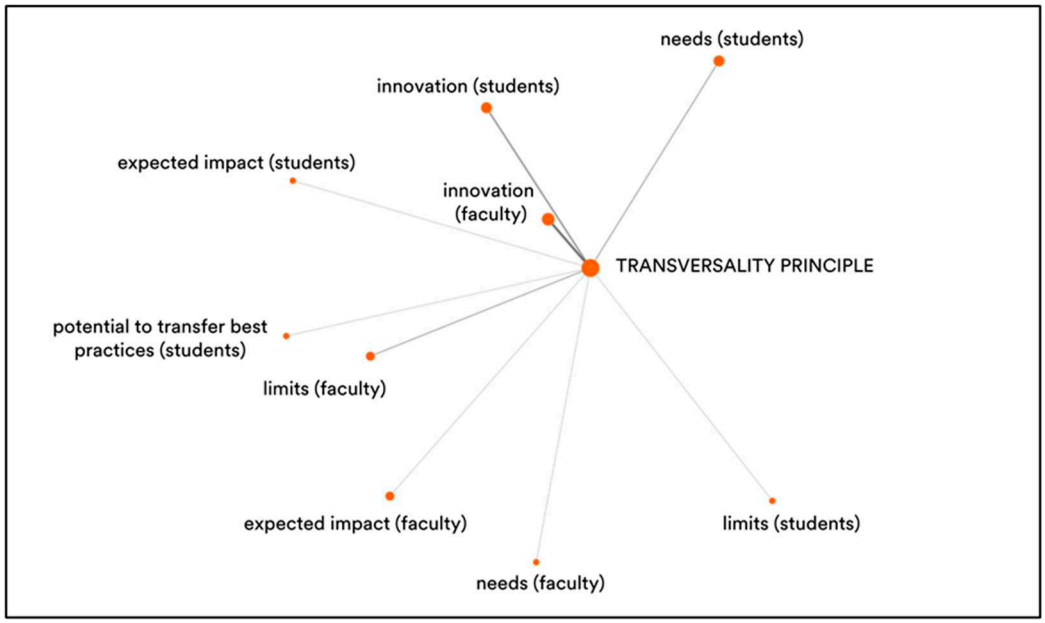

Figure 5. Transversality principle: code co-occurrence analysis force-directed graph. Source: Atlas-ti version 23.3.0.

3.5.1. Innovation

Starting from the *innovation* sub-category, on the faculty side, it emerges that the innovation of SL is in linking service activities with the curriculum, taking students as protagonists and introducing them to reflective practice to promote meaningful learning. In this regard, one lecturer says:

> *"Often in universities there is the large deficit of working in a sectoral way, when in reality in the labor market it doesn't work that way, you are in teams and everyone makes their skills available to the other. With service-learning this happens. So, service-learning allows an interdisciplinary perspective"* (E1).

In addition, according to another teacher, the combination of SL and DE further enriches the transversality component, as it allows the introduction of digital literacy into the teaching-learning journey, independently of the area of study: *"In the process that we do a service-learning project using technology, we are definitely learning what we learn in school/university plus everything about the cross-curricular aspect that we hardly touch on but that is very important"*(E1) . Finally, it emerges that SL breaks the pattern of the 'fortress' university, closed in on itself, and opens up to the idea of a 'torrent' university where knowledge is transferred to solve social problems while ensuring meaningful learning. This is why they *"strongly believe that service-learning is a practice, a pedagogical proposal to improve teaching"* (E3).

On the student side, two elements of innovation emerge about combining SL and DE. The first element relates to being more involved as learners because, thanks to technology, students have to use the content in different ways and with different languages. Indeed, this generates *"the opportunity to find the most suitable method, the most suitable strategy and to study in the most congenial way"* (S4). Another element that emerges from the combination of SL and DE is the motivation to experiment with technology and to learn, so as to provide a service to the community. For this reason, according to one student: *"the combination of service-learning and digital empowerment is useful in any field"* (S5).

3.5.2. Needs

Needs (students) is the third sub-category in the code co-occurrence analysis force-directed graph (Figure 5). According to students, SL responds to the need to be able to learn starting "*from a personal need, obviously related to one's own learning, thus the possibility to learn something according to one's own interest, which then also has a social impact"* (S5). Furthermore, the possibility of responding to so many

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different social needs of any target group and age is emphasized. In this line, by combining SL and DE, one obtains greater flexibility and accessibility *"because certainly one creates content or situations that can be more flexible than what we are perhaps used to and also in terms of accessibility, thus providing multiple means to do, to create, but also to express oneself"* (S4). However, in terms of needs, it is also mentioned that it is crucial that first of all, teachers are digitally empowered *"because if they have an overview of all the tools that can be used, they can provide a 360 degree experience in any field. If their vision is narrow, the experience suffers as well"* (S1).

Regarding the sub-category *need (faculty)*, this appears to be weaker. However, it is in line with what the students mentioned in terms of training. Prior to the digital aspect, *"the need to train the ability to get more and more into the game"* (E1) is mentioned. There is, therefore, a need to *"break free from the rigid formalities that one has to maintain because one is in an academic setting, and to try to be a little more flexible"* (E1) in teaching through SL.

3.5.3. Limits

If students express themselves more in terms of *needs*, faculty emphasizes *limits*. Indeed, *limits (faculty)* is the fourth sub-category in terms of strength. There emerges the significant limit of the lack of digital awareness, directly linked with the actual circumstance that teachers still *"consider digital only as plan B [...]. So, we first need to acquire that digital consciousness in order to be able to say 'no digital can do so much'" (E3).* Another limitation has to do with how, in the digital environment, there is no possibility of

> "*improvisation, to what is not planned. Digital conditions you a lot because you have everything under control, i.e. you have the meeting in zoom at this moment; instead in presence [...] different ideas can arise [...] and in the service-learning that has to do with a vital construction, with transformation, you cannot do everything digitally"* (E2).

According to the student, a limitation related to SL and DE is the so-called *netiquette*:

> *"people are convinced that since everything is digitized they can say, write, do whatever they want without taking into account the context they are in. Or attend a university lecture lying in bed [...] because the lecture starts early: this is not serious. In this case you are not making proper use of the digital empowerment that is being offered. So, there is some digital education that is missing and should be done"* (S1).

3.5.4. Expected impact

On the expected impacts, the teachers state that SL and DE can generate "an impact on digital skills [...] because there is such an active engagement with digital tools that a positive increase in these skills can be expected" (E1). Moreover, as an essential element of SL, reflection is mentioned as an element that can create an impact in terms of opening up a "horizon of meaning both with respect to what is being studied and to the life project" (E2).

On the student side, it is only mentioned that SL can become habitual because "this kind of service, this kind of learning you do towards yourself and others, in any field, you can really do it every day" (S5).

3.5.5. Potential to transfer best practices

Regarding the *potential to transfer best practices,* only the students' perspective emerges. They mention the desired modus operandi to

> *"make a match between in-presence meetings and distance meetings [because] a service-learning project that really works is able to put the personal relationship in presence as a prerequisite to then get the project going so that it can also be done online, and that can maintain a set cadence of in-presence meetings*" (S1).

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3.6. Social responsibility principle

Regarding the *social responsibility principle,* the perspectives of the stakeholders were classified into ten sub-categories: potential to transfer best practices (for students and community partner); innovation (faculty and students); needs (for students); expected impact (for students, faculty and community partner); and limits (for community partner). As shown in the force-directed graph represented in Figure 6, the most recurrent sub-category is *potential to transfer best practices (students)*, highlighting the importance of ensuring certain prerequisites for implementing SL and DE.

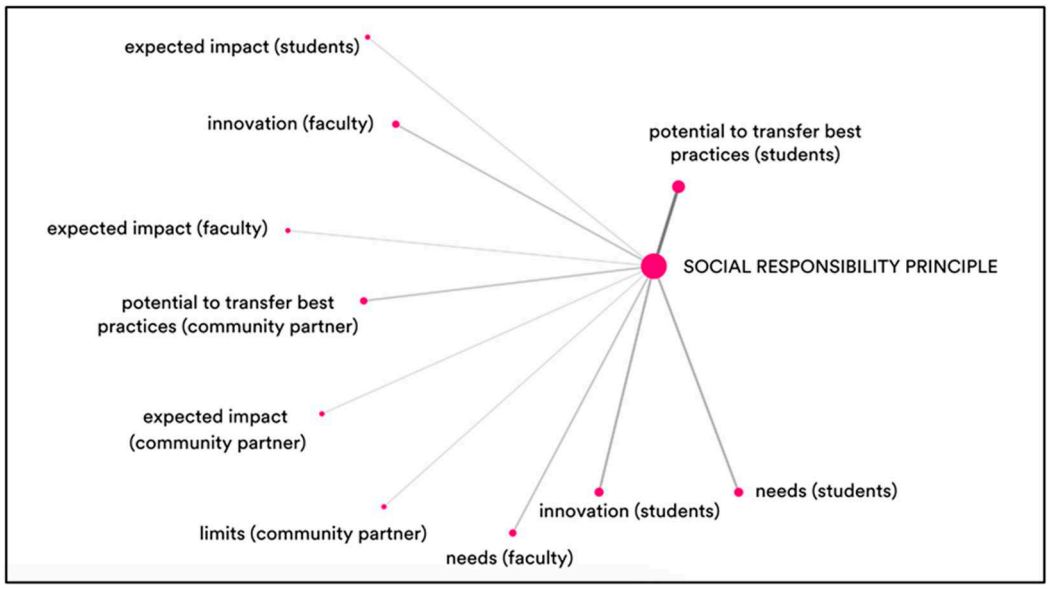

Figure 6. Social responsibility principle: code co-occurrence analysis force-directed graph. Source: Atlas-ti version 23.3.0.

3.6.1. Potential to transfer best practices

On the student side, the prerequisites that make a university capable of contributing to progress in addressing social, economic and environmental issues in SL are: to organize meetings to promote SL, publicizing that *"there is also this reality within the university"* (S3), sharing experiences that show how SL enriched the students and the community, *"so maybe with a small example, with a small seed we can generate other plants"* (S2); to confront challenges at SL, such as the difficulty of finding realities ready to support projects and create social impact; to create opportunities for students to experience it; to agree on common goals, and to engage and involve students.

On the teacher's side, the prerequisites are: the predisposition to have a prosocial behavior, a sense of gratuitousness for the service activities and understanding that *"education is also a tool for transformation"* (E2). Moreover, motivation and digital skills are prerequisites; specifically for teachers, it is crucial to give students the power and that the teachers mentor the activities.

Finally, for community partners it is important that learners understand well the purpose of SL, and above all the context in which they are going to operate; otherwise, it is difficult to act effectively on communities. In particular, it is important that students understand the vision of an institution that decides to participate in SL, for example the social development of the community in which it is located; it is essential to build and share a common vision, need, and goals with the partners institutions. It is also important to listen to the communities because *"communities often ask us for help in solving problems of socially complex features"* (C1) and the role of a company is to understand which networks to activate (including universities) to create innovative processes.

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3.6.2. Innovation

According to students, in terms of *innovation*, the greatest improvement concerns the digital skills of the university population as a whole, because in SL related to DE *"you are pushed to understand which platforms, which tools can be more functional and you build up a background that can be transferred to other contexts"* (S4). Furthermore, *"digital empowerment allows for greater dissemination of good practices, making what you are doing more widespread"* (S4). Another element of innovation that concerns the university dimension is the possibility of *"sharing a common goal with other people that I have hardly experienced, even in a university or school context"* (S5)..

According to lecturers, the greatest innovation is manifested in didactics because the university's choice to adopt SL or e-SL enables it to meet a real challenge: to enable learning by all and for all. Actually, one lecturer states:

> *"it is easy for teachers to reach the good students, there is nothing challenging in reaching the smart and proactive learners; the real challenge is to engage those who do not seem engaged and service-learning can be a winning proposal from this point of view, both in the non-digital and digital guises because it is the same thing"* (E1).

However, at the university institutional level, the DE can introduce a major innovation: the possibility of proposing nationally based SL projects by setting up, if possible, periodic face-to-face meetings in each of the locations involved.

3.6.3. Needs

This sub-category only appears in relation to students who identify the need to create a clear digital-related institutional training direction *"to become capable of responding to any kind of need"* (S4). In this sense, they believe that *"learning must go hand in hand with the acquisition of digital skills"* (S1). Furthermore, another SL-related need is to engage institutionally in the promotion of SL activities, to create a culture around SL. Finally, students identify the need to give attention to building the group dimension with multiple people who have to operate with, especially when the SL is online; *"you must have the tools to create the relationship because the online and in-presence types of relationship are equally valid but need to be managed differently"* (S1).

3.6.4. Expected impact

From a macro-organizational university perspective, according to students, the greatest impact of DE connected to SL is on cost and time savings. According to lecturers, the greatest impact of DE linked to SL is on inclusion: SL allows us to change the perspective in which vulnerable people are recipients of services by becoming agents and protagonists of common projects. *"Technology can give extra tools to this empowerment"* (S4). Finally, according to the community partner, SL and DE allow for the development of digital skills that *"bring benefits everywhere, especially in the case of people looking for a job or contact with society"* (C2).

3.6.5. Limits

This sub-category only appears in relation to the community partner, who highlights the criticality of bringing innovation through SL when operating in highly socially vulnerable contexts where it can become difficult to even gain the minimum trust of priority groups and thus be able to start any kind of intervention. The challenge is to overcome this critical point, to involve them and *"bring for example digital innovation that would be a great employment resource for many"* (C2).

As can be seen in the Sankey diagrams represented in Figures 7–9, for each type of actor involved in the focus group, the distribution of responses varied widely. The students (Figure 7) focused on all the principles of sustainability education in the university environment. Particular attention was paid to the ethical aspects, both in terms of risk and potential innovation. The lecturers (figure 8) also focused on all principles. In this case, the main focus was on the principle of transversality, especially in an innovative sense. Finally, the community partners (Figure 9) touched upon only three principles, in this order: ethics, complexity and social responsibility, emphasizing in the first case the

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innovative aspects, in the second case the expected impact, and in the third case the prerequisites necessary to be able to realize good practices.

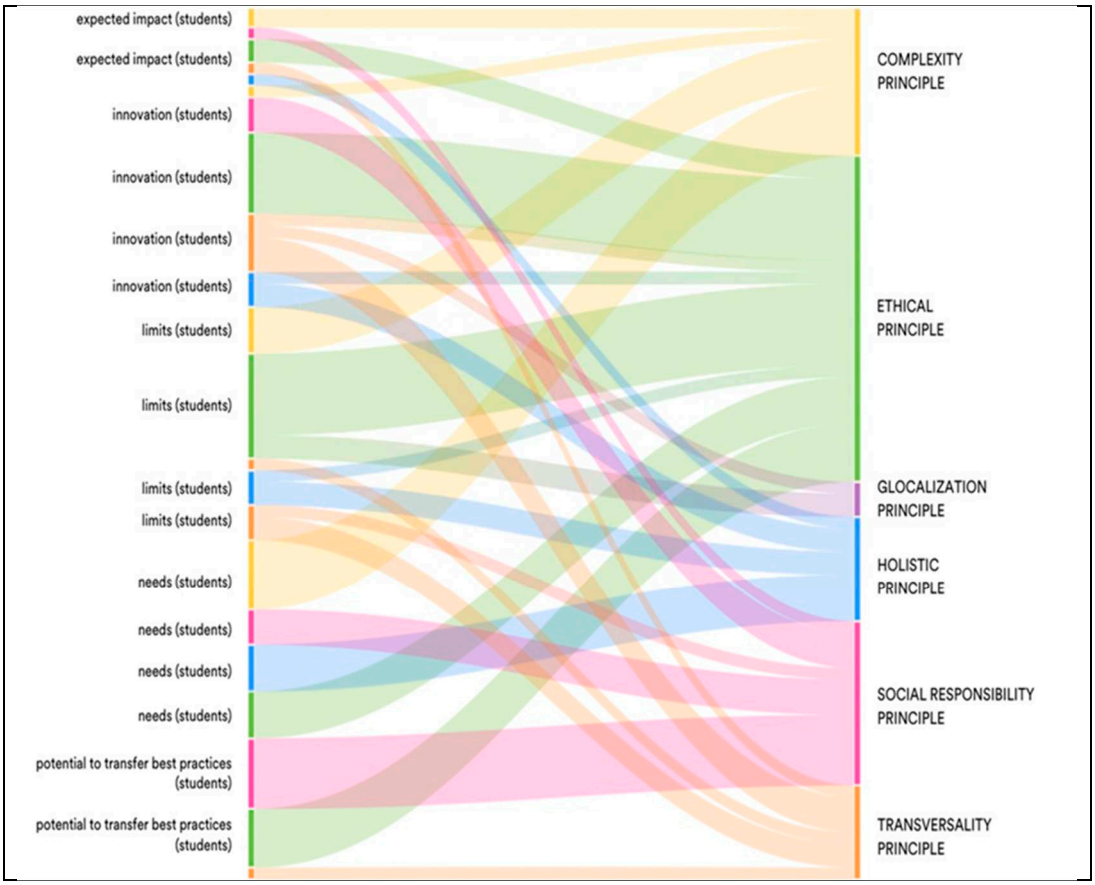

Figure 7. Students' Sankey diagram. Source: Atlas-ti version 23.3.0.

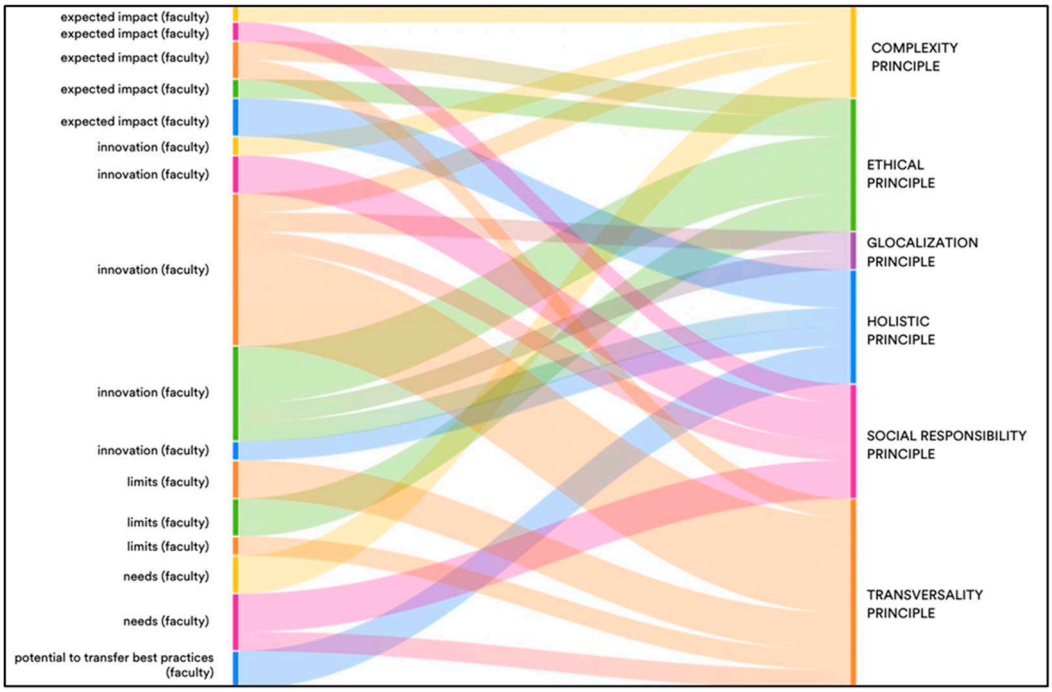

Figure 8. Faculty' Sankey diagram. Source: Atlas-ti version 23.3.0.

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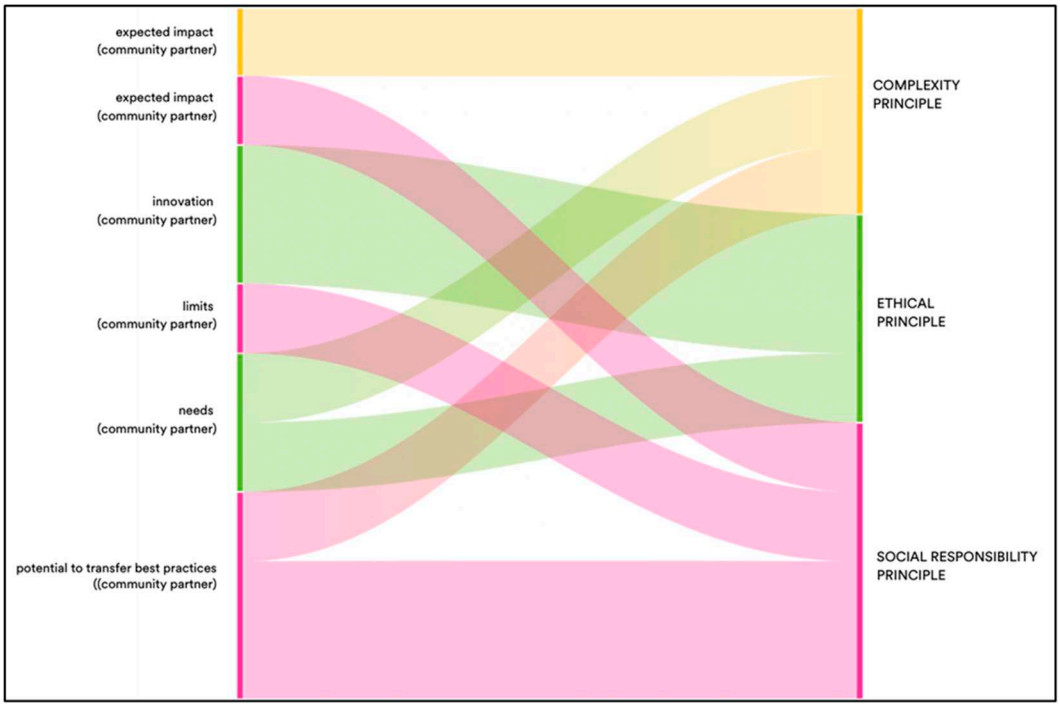

Figure 9. Community partners' Sankey diagram. Source: Atlas-ti version 23.3.0.

4. Discussion

In an era driven by technology and interconnectedness, where the boundaries of learning extend beyond traditional classrooms, education faces new challenges and opportunities. This article explores SL and DE in higher education related to the principles of sustainability education [31]. The aim is to explore the perspectives of students, faculty and community partners on the combination of SL and DE under the principles of sustainability education, considering the latter as essential for the future of education. Indeed, sustainability, understood as social, economic, and environmental, is the inspiration to promote meaningful education, both to develop the skills to face the challenges of complexity and to give those skills a civic orientation. The results of the focus groups particularly reflected the perspectives of faculty and students; although to a lesser extent, the views of the community partner also enhanced the results, especially for ethical, complexity, and social responsibility principles.

In relation to the *ethical* principle, ten sub-categories from the viewpoints of students, faculty, and community partners emerged, with a significant emphasis on *innovation*. Seen through the eyes of students, innovation encompasses various aspects. It highlights the active participation of individuals, recognizing the value of citizenship and respect for each person's unique context. The digital dimension is revealed as a powerful catalyst for inclusivity and awareness, allowing for more participation. Digital tools are noted for their capacity to facilitate inclusion, making it a facilitation for people with disabilities and also for individuals who are more comfortable communicating from the screen of their device. Faculty members echo the theme of innovation, emphasizing that SL and DE empower individuals to become active agents in society. Community partners emphasize the democratic nature of SL, as it engages diverse groups and promotes respect for differences. Inclusion in SL and DE is not about homogenizing; it is about valuing diversity. The code also delves into the limitations of combining SL and DE, as perceived by students: social inequality poses a challenge, particularly in an ever-evolving digital landscape, where access and resources can be unevenly distributed. Faculty members express concern about potential exclusion when digital literacy is lacking. The *transfer of best practices* sub-category, mainly associated with students, highlights the importance of considering the socio-economic context when implementing SL and DE. It emphasizes the need for access to suitable environments and digital resources. Regarding the needs identified by

students, they revolve around achieving a balance between DE and human aspects, emphasizing the importance of effective communication, especially for individuals with disabilities. Creating flexible contexts is vital to ensure inclusion. These results are confirmed in the literature. SL enables co-creative dynamics and critical reflection, democratizing participation by a more diverse range of individuals [19]. For example, thanks to the use of digital resources, the inclusion of priority groups can be promoted. Additionally, e-SL helps students develop soft skills, providing opportunities to practice and enhance leadership and self-evaluation skills [13].

Regarding the *holistic* principle, an interesting aspect emphasized by students is the need to acquire a critical viewpoint on inequalities and privileges. In this line, DE allows for an integral approach to reality because it also considers the digital sphere, which plays a significant part in everyone's life. In terms of relational understanding of social needs, the students also highlight the chance to relate with different target groups and expand their perspective thanks to digital. In the teachers' opinion, SL is an educational model that accompanies students to comprehend the complex relationships, even between different phenomena and contexts. Furthermore, they state that the digital dimension cannot be ignored when working in SL. Indeed, they consider it an important element in order to realize quality projects. This link between the community service and the digital aspects has potential impacts: according to students, it leads to more active participation, to greater horizontality between the teacher and students, and to the possibility of implementing more collaborative activities; according to the lecturers, it contributes to students' empowerment. However, according to learners, if the right balance is not achieved with digital, there is a lack of focus and feelings of anxiety. According to these results, some authors [34] state that SL promotes critical analysis and fosters sustainable development and social change.

In relation to the *complexity* principle, the most relevant aspects are related to the need of learners and teachers to intervene in communities in structured phases. These phases start with needs analysis, moving on to diagnosis, reflection, and so forth. This approach promotes understanding of the problems and of the relationship between them. It therefore makes complexity more accessible. In general, SL responds to the need to test the skills learned in practice, to synchronize education with real life, starting from concrete needs and developing civic competences. In this process, DE becomes an innovative element of practice, as it can become the goal of the project itself. These findings are in line with the existing literature that emphasizes the different roles that technology can play within projects: going from an instrumental channel where technology is merely the mediator of the service, to being an integrated objective where the service includes the creation of new digital tools [13]. The alienation that results from being in the digital environment is mentioned in the limits. In the same line, some authors [22] highlight the difficulties in working remotely with unfamiliar people, as well as challenges in coordinating and managing time and maintaining focus. They also point out team malfunction as one of the issues, often associated with socio-economic problems and a lack of personal resources. On the other hand, some emphasize the risk of less fluid relationships and truncated interactions [19], which may limit learning opportunities. Another interesting aspect is that DE in some cases is perceived by students as an impoverishment of the experience such as traveling to community meetings and all that goes with this experience. These limitations are directly related to the limits of being able to have an immersive experience in the online dimension and the difficulty of using certain tools precisely because of the lack of adequate training. This is in line with other authors who argument that even though students may be digital natives, they still need training to be able to avoid dangers, such as fake news and improper data handling [9]. On the other hand, students, teachers, and the community believe there can be strong impacts in dealing with the complexity of vulnerable territories. This enables them to develop systemic thinking, personal and professional growth, and critical digital thinking.

Regarding the *glocalization* principle, many innovative aspects emerge: students and teachers agree on the possibility of reaching more people and places thanks to the combination of SL and DE, as well as being able to disseminate project results more widely and make the educational proposal known. In particular, students mention the increased circulation of ideas, while faculty members mention the possibility of being able to network experiences globally. In general, digital is seen as a

 doi:10.20944/preprints202312.0979.v1

tool to enhance SL projects. In terms of impact, intercultural competences are mentioned, which can be developed precisely through the implementation of global projects that connect students with different realities, cultures, and religions. Moreover, while teachers reflect on the importance of digital skills to develop a global digital citizenship, students highlight the potential limitation of exporting project models without considering the needs of the context and of the actors involved. These results are confirmed in the literature. Several studies assert that when combining SL and DE, SL projects have a greater impact [21] and enable the establishment of international collaboration links [22,23]. In the same line, other authors [19] state that digital technologies allow for building relationships with individuals with whom it would never have been possible to connect.

Regarding the *transversality* principle, it is interesting to note how well the innovative elements of the SL connected to DE are emphasized. In particular, the students coincide with faculty concerning how technology becomes a transversal element of learning in every field, and becomes an ingredient of learning motivation. This naturally generates an improvement in digital skills. More generally, it is interesting how it is stressed that SL can instill in students a *habitus*, as it can become a way of acting in life: doing something for others and for yourself at the same time. However, a balance between digital and presential must be maintained, precisely in order to continue to put the relationship at the center, as a pivotal element in any project. This is why the need to overcome the lack of digital awareness, especially in teachers, is emphasized. On the one hand, according to faculty members, there should be training so that digital is no longer considered only as a Plan B. On the other hand, according to the students, if teachers do not have digital awareness, they cannot offer an all-round experience, and therefore do not allow potential innovative elements, such as flexibility in learning and accessibility, to be realized in SL and DE. According to other studies, when combining SL and DE, universities can promote different methodologies that allow for the integration of formative versus summative, flexible versus rigid, hybrid versus offline, synchronous versus asynchronous approaches [9].

The principle of *social responsibility*, examined in the context of SL and DE, reveals a complex set of perspectives among the actors involved, outlined in ten sub-categories. Notably, prerequisites for effective practices emerge, emphasizing the importance of establishing robust partnerships and adequately training students; this training ensures their comprehension of the purpose of SL and familiarity with the operational context before engaging in practical activities. Regarding innovation, students emphasise the enhancement of digital skills across the entire university community. Lecturers highlight the potential for improving teaching quality, particularly through proposing nationally scaled projects when combining SL with DE. Anticipated impacts include students foreseeing time and cost savings, while lecturers envision enhanced inclusion by empowering vulnerable individuals as active contributors to collective projects. Community partners anticipate positive outcomes in employment opportunities for priority individuals when digital skills are transferred. Conversely, community partners emphasize the challenge of operating in socially vulnerable contexts, expressing concern that establishing basic trust may be difficult. According to students, these innovative effects can be realized with the establishment of a clear institutional direction, encompassing aspects like digital education. According to other studies, technology in e-SL represents mediation and should always foster solidarity and its social function [26,29]. In the same line of thought, other authors [19] consider that the integration of SL with digital technologies can broaden, deepen, and integrate civic and humanitarian outcomes in learners, fostering equity and justice. The most successful university SL projects involve students directly with businesses or community groups to address specific problems [24].

5. Limits and Conclusion

While focus groups are a valuable research tool for gathering qualitative data and exploring participants' perspectives on SL and DE, it is important to acknowledge several limitations in their use. In the context of this study, we identified a number of constraints and challenges associated with our use of focus groups. It is crucial to consider these constraints and challenges when interpreting the findings and drawing conclusions. The sample is limited, as only two focus groups have been

used. This small sample size may not have adequately captured the full range of experiences, opinions, and insights on the topic. Conducting more focus groups might improve the findings. Also, it would be advisable to include participants from a wider range of academic degrees, and a larger number of teachers and representatives from social entities. Moreover, conducting additional research using other data collection methods, such as online surveys, to complement the findings from the focus groups would be appropriate. New studies could analyze informants' views on artificial intelligence and SL. This topic was hardly touched upon in the focus groups as they were conducted in 2022, close to the pandemic, when it was barely known.

This paper has explored the potential of combining SL and DE from the perspective of teachers, students, and community partners. Results of the study suggest that SL, enriched with DE, is consistent with the principles of sustainability education in the university context. The combination of SL and DE offers numerous possibilities for innovation, inclusion, and participation; however, training is needed to increase knowledge that will facilitate having a significant experience and to avoid negative attitudes.

DE can significantly enrich SL by providing new opportunities for engagement, learning, and impact. By taking the sustainability perspective on board, students of higher education can acquire the knowledge and develop competencies that prepare them to be effective agents of change. However, it's important to recognize that while DE offers numerous benefits to sustainability education and SL initiatives in higher education, it also comes with its own set of challenges and considerations. To address these challenges, institutions should prioritize DE and offer students the opportunity to participate in SL projects using digital tools in collaboration with the community. Higher education should ensure a holistic approach to sustainability education that combines both digital and real-world experiences, focusing on improving learning, and also on the natural environment, and on the well-being of those who need it most.

Author Contributions: Conceptualization, P.A., I.C. and R.C.; methodology, P.A., I.C. and R.C.; software, P.A., I.C. and R.C.; validation, P.A., I.C. and R.C.; formal analysis, I.C., P.A. and R.C.; investigation, P.A., I.C. and R.C.; resources, P.A., I.C. and R.C.; data curation, I.C., P.A. and R.C.; writing—original draft preparation, P.A., I.C. and R.C.; writing—review and editing, P.A., I.C. and R.C.; visualization, P.A., I.C. and R.C.; supervision, P.A., I.C. and R.C. All authors have read and agreed to the published version of the manuscript. .

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Quality Assurance Committee of the ERASMUS+ SLIDE - Service-Learning as a pedagogy to promote Inclusion, Diversity, and Digital Empowerment Project (Ref. number 2021-1-BE02-KA220-HED-000032235).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data is unavailable due to privacy restrictions.

Conflicts of Interest: The authors declare no conflict of interest.

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