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SERVICE LEARNING FOR SUSTAINABILITY IN THE PRACTICUM PHASE OF INITIAL TEACHER TRAINING

Aprendizaje servicio para la sostenibilidad en la formación inicial del profesorado

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Abstract:

Service Learning is an educational practice that promotes learning processes of eclectic and thorough contents, competences and values through a community service and its critical review with the help of reflective tools. Its implementation is necessary, particularly in teacher training, in order to foster change in the education system and to progress towards sustainability. In this paper, we describe and analyse three projects involving the use of Service Learning related to sustainability in the practicum phase of initial teacher training. In order to evaluate the suitability of Service Learning in this stage, we have analysed outputs generated by the teacher trainees under the Rubric for the Self-Assessment and Improvement of Service Learning (RSAISL) projects (Rubio-Serrano, Puig-Rovira, Martín-García and Palos-Rodríguez, 2015). The results show that the trainees are capable of leading and executing successful Service Learning projects at schools, despite the limiting factors, such as time constraints or the lack of consolidation of some of these projects.

Key Words: educational practices; practicums; service learning; student teachers; sustainability

Resumen:

El aprendizaje servicio es una práctica educativa en que la realización de un servicio comunitario y la revisión crítica del proceso mediante herramientas de reflexión vehicula aprendizajes eclécticos y matizados en cuanto a contenidos, competencias y valores. Su implementación es necesaria, particularmente en los estudios de grado de Maestro/a en Educación Infantil y Educación Primaria, para avanzar hacia la sostenibilidad. En este artículo describimos y analizamos tres proyectos que mediante el aprendizaje servicio introducen la sostenibilidad en el prácticum del último curso de la formación inicial del profesorado. Para evaluar la idoneidad del aprendizaje servicio en este estadio de formación, se han analizado los materiales generados por los estudiantes aplicando la rúbrica para la autoevaluación y mejora de experiencias de aprendizaje servicio (Rubio-Serrano, Puig-Rovira, Martín-García y Palos-Rodríguez, 2015). Los resultados muestran que los estudiantes son capaces de liderar y ejecutar proyectos de aprendizaje servicio exitosos en las escuelas, aunque existan algunos factores limitadores, como la duración del prácticum o la poca consolidación que consiguen estos proyectos.

Palabras clave: aprendizaje servicio; educación para la sostenibilidad; formación inicial; método de enseñanza; período de prácticas.

1. Introduction

Many voices in different areas of society are calling for far-reaching changes in our lifestyles and in how we relate to our environment. We are living in a time of rapid and constant change; uncertain and liquid times, according to Bauman (2007). These societal changes inevitably involve transformation in education paradigms, already signalled by Garcés (2017: 62) and Robinson (2010), among other authors, from positivist perspectives to post-positivist and critical approaches. It is often stated that students are training for professions that do not yet exist or that they need to acquire competences to live in a future world that will be quite different from the one we inhabit today.

Swept along by the current of constant change, education professionals also face this uncertainty. According to the IBE-UNESCO document (Marope, Griffin and Gallagher, 2017), teacher training on an international level is undergoing a process of adaptation in response to the economic, social, cultural and political challenges facing the world today. Likewise, these educational challenges in a diverse, interconnected

and increasingly complex world demand a transformation of the educational landscape (UNESCO, 2015).

As stated by DiGiuseppe et al. (2019):

Faculties of education have always been in the powerful position of fostering change in the education system, given their dual role of educating new teachers and conducting educational research. In particular, they can introduce preservice teachers (PTs) to novel, evidence-based approaches and sow expectations that challenge and disrupt traditional practices. From this perspective, PTs can be seen as potential 'Trojan horses', smuggling new ideas and alternative frameworks into established school systems (p. 132).

According to Hofman-Bergholm (2018), "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" (pp. 24-25). One of the main obstacles for implementing sustainability in initial teacher training is the fact that it is an intricate topic that needs an interdisciplinary approach (ibid.).

The purpose of this paper is to introduce Service Learning (henceforth in the text, SL) as an innovative educational practice that is consistent with the principles of sustainability and can be implemented at different levels of formal education, such as primary education and initial teacher training in higher education. Through SL, it is possible to work on curricular contents while undertaking actions to change the environment with the goal of improving it. As such, we describe and analyse the contributions of three teacher trainees in their final year of initial training who are completing the practicum phase of their training in schools. Specifically, the three projects involve, respectively, a campaign for the collection of used mobile phones, a blood donation campaign and a school playground transformation. This paper, thus, is a contribution to fill a gap in education for sustainability in pre-service teacher curricula, related to transforming learning and training environments and building capacities to educators (UNESCO 2014). As some authors have documented (Álvarez-García, Sureda-Negre and Comas-Forgas, 2015; Hofman-Bergholm, 2018), student teachers are not prepared enough about sustainability issues.

2. Theoretical framework

2.1. Education for sustainability in higher education

Since the publication of the Brundtland Report (WCED, 1987), in which sustainable development is defined as the capacity to meet the needs of the present without compromising the ability of future generations to meet their own needs, this concept has been widely accepted, and sustainability in higher education has been incorporated in the form of numerous declarations, agreements and networks (Christie, Miller, Cooke and White, 2013; Escrigas, Granados, Hall and Tandon, 2014).

Over the years, the United Nations has coordinated various international summits and conferences on sustainable development (for example: Rio 1992, Rio+10, Rio+20), leading to the publication of several reports and declarations. The 2030 Agenda for Sustainable Development was adopted at the United Nations Sustainable Development Summit in September 2015. The Agenda contains 17 global goals which since 1 January 2016 have leaded the efforts of countries to achieve a sustainable world by 2030. The implementation of these goals and the success in achieving them depends on the sustainable development policies, plans and programmes of individual countries and governments (United Nations, 2015), but also on education.

Thus, as some authors state (Aramburuzabala, Cerrillo and Tello, 2015; Cotton and Winter, 2010; Sterling, 2004; Jickling and Wals, 2008), the integration of sustainability in higher education involves a change in the educational paradigm, from a positivist perspective (which is dominated by transmissive learning with teacher-centred approaches, individual learning, learning by theory, and accumulating knowledge with only cognitive objectives) to post-positivist approaches (which encourage learner-centred pedagogies, learning through discovery, collaborative learning, praxis-oriented learning linking theory and experience, learning with and from real issues, learning with staff but also with and from external partners or stakeholders, self-regulative learning, and not only cognitive, but also affective and skill-related learning).

According to other authors (Lozano, 2006 citing Roorda, 2001; Wals, 2014), the university system should change from the current highly specialised approach to the integration of new forms of learning with multidisciplinary, interdisciplinary or transdisciplinary approaches. In the transdisciplinary approach, not only is there cooperation between specialists from various disciplines, but also other people are directly involved, namely users, problem owners, clients or other stakeholders.

There are different university contexts in which sustainability can be incorporated, ranging from environmental management (university greening and reducing its ecological footprint) to more recent practices in teaching and learning, community outreach and partnerships (Müller-Christ et al. 2014; Wals and Bewitt 2010). While universities have strategies in place to raise awareness about the importance of sustainability, more far-reaching changes are needed. These changes are decisive in initial teacher training, since education professionals end up having great influence on the basic education of the citizenship and on the management of education centres. Therefore, education for sustainability needs transformative proposals. Sauvé (2019), for instance, advocates for a specific professional competency to be integrated in initial teacher education curricula. As she puts it:

> Teachers should be able to relate pedagogical situations and students' learnings to the socio-ecological realities of life (in the community, neighbourhood, city, and region and on larger scales), so as to enhance the development of an ecological identity, to foster the construction of a critical vision of the actual and upcoming world, and to increase the capabilities of children and youth in regard to ecocitizen action (p. 57).

2.2. Service Learning and transformative learning

According to the definition of the Centre for the Promotion of Service Learning an association committed to promote the study, dissemination, training and development of SL experiences by collecting and publishing the different initiatives and facilitating the creation of territorial networks, this is "an educational proposal that brings together learning and community service processes in a well-structured single project whose participants receive training while addressing the real needs of their environment with the goal of improving it." As such, SL is a pedagogical approach with a social purpose, which channels learning processes through community service on the basis of a structured project in which participants focus on the real needs of the environment with the aim of influencing and transforming it. It is also a proposal in which a pedagogical purpose is combined with a societal purpose, by which we mean the following: in the case of the pedagogical purpose, consisting of a real project, carried out on the ground, the goal is to bring into play various competences and achieve the sort of learning that could not be achieved with the same intensity in other ways. Meanwhile, the societal purpose consists of ensuring that the project is useful for people –its environment, an organisation or a marginalised community–, and that it meets a real need.

SL constitutes an excellent methodological option in order to undertake the challenges facing society today, since it offers a different type of experiential learning that engages students and places them in the centre of an active, relevant and collaborative learning process. It focuses both on the service provided and on the learning itself, being them balanced (Barth, Adomßent, Fischer, Richter and Rieckmann, 2014; Bringle and Hatcher, 2000), as well as enabling change in real contexts (Aramburuzabala, Cerrillo and Tello, 2015; Wall, 2017). However, to ensure adequate service and nuanced learning, both processes need to be reviewed with a critical perspective through reflective strategies.

The definition of SL is broad enough to encompass a wide variety of projects and methodologies (project-based learning, cooperative learning, problem-based learning, transformative entrepreneurship, etc.), which can be driven both by teaching staff and by students. SL offers an opportunity to acquire learning from a critical and multi-faceted perspective, since it is concerned with giving learning a social function while at the same time combining theory with practice and aiming the student to take a stance, to play a key role in the processes of human development, deploying new strategies to build a fairer and more participative society (Aramburuzabala and Opazo, 2015).

2.3. Service Learning in initial teacher education to advance towards sustainability

As stated by Anderson (2000), "SL preparation gives preservice teachers a powerful tool to use with their future students. Experience demonstrates that it is difficult for teachers to use SL effectively unless they have experienced it as a teaching method" (p. 2).

There is an extensive literature on SL practices related to sustainability in initial teacher training worldwide. Baldwin, Buchanan and Rudisill (2007), for example, present a study on diversity, multiculturalism and the challenges they may present for future teachers. With regard to social justice, Coffey and Lavery (2015) describe a SL-based module for primary and secondary education teachers that includes a practicum phase in various social organisations. Likewise, Michael et al. (2018) associate SL with movement integration in primary classrooms with the goal of maintaining physically active and healthy communities. Maynes, Hatt and Wideman (2013) integrate SL in the practicum phase with the distinguishing feature that the SL projects are not carried out directly in schools but rather in organisations serving school-age children in non-school settings.

Although there are various initiatives and ways of integrating SL in initial teacher training, all the studies affirm that SL is a successful practice that enables teacher trainees to learn about themselves, personally and professionally, in real contexts and situations. Both authors also state that SL involves reciprocal learning that benefits all participants by obtaining real results, and that it is necessary for teachers to be incorporated in their range of professional practices in order to foster social transformation.

3. Methodology

The objective of this study was to analyse three SL projects related to sustainability and to the practicum phase, for the purpose of identifying the potential and limitations, the strengths and weaknesses, of these projects for initial teacher training.

Our contribution is based on evaluative research (Pérez Juste, 2015; Tejedor, 2000), a methodology of the social sciences, which is framed in the pragmatic paradigm, and hybridizes experiential and hermeneutic data (Escudero, 2006, p. 180). This methodology allows researchers to analyze in a systematic and instrumentalized way educational programs and projects for their improvement and to promote social transformation.

3.1. Context and participants

The three projects presented below formed part of the Practicum 2 module of the fourth year of the Degree in Primary Education Teaching and the Degree in Early Years Education of the University of Girona, Catalonia, Spain. Practicum 2 is a compulsory module with a workload of 24 ECTS credits (European Credit Transfer and Accumulation System). It comprises a 12-week intensive period in a school, from the months of February to the end of May, completed in the last year of the teaching degrees of the University of Girona. Among other tasks, students are required to design an educational innovation project framed within the context of the centre where they are carrying out the practicum phase.

The three projects were carried out in state schools in towns located in the province of Girona (Catalonia, Spain) and involved the use of SL related to sustainability. Each project, individually, was led by a female teacher trainee and counted on the participation of 57 school pupils, altogether.

3.2. Description of the projects

We analysed the three following projects:

3.2.1. Design and promotion of a campaign to recycle mobile phones

The initiative was inspired by previous campaigns led by Jane Goodall, such as "The Forest is Calling. International Mobile Phone Recycling Day" (The Jane Goodall Institute, 2017) and was incorporated into the Knowledge of the Environment subject. The idea came from the trainee's observation that all the twenty pupils in the 6th grade (11-12 years old) in which she was carrying out the practicum phase of her studies, had mobile phones. She wondered what uses they made of their phones and what knowledge they had of the phone manufacturing process and of the social and environmental problems associated with the mining of coltan, the ore from which one of the minerals (tantalum) used in the manufacturing process is extracted. She then planned an educational unit, involving the pupils in its design. After finding out about the manufacture of mobile phones, the pupils decided to carry out a campaign to collect used mobile phones for their subsequent recycling.

3.2.2. Collaboration in the municipal blood donation campaign

The school took part in a blood donation campaign, involving seventeen 5th grade primary education pupils (10-11 years old) in their promotion and in carrying out support tasks. It has been proven that "Through the blood donation and education for citizenship projects, there is an increase in the number of donations and in the level of social awareness of the need to donate blood." (Graell, 2015, p. 78). The donation campaign was led by the Blood and Tissue Bank, a public organisation with the mission of managing and administrating the donation, transfusion and analysis of blood and blood plasma. Due to the fact that the raw material is obtained through anonymous voluntary donations, the entity seeks the cooperation of local councils and other organisations of the municipalities where the campaigns are conducted. On a curricular level, the school made the most of the opportunity to work on the blood circulatory system in the Knowledge of the Environment subject on an experiential and transdisciplinary basis. In addition to studying the blood circulatory system, the learners wrote invitation letters, designed and distributed information posters, and created token gifts to give to participants on donation days.

3.2.3. Design and dynamization of the project for improving the school playground

The reasoning behind this project was the need to enrich school playgrounds with natural stimuli and turn them into healthier and more social spaces. There has been a growing trend in recent years to improve the outdoor spaces of schools and to see them as sources of learning opportunities and welfare (Cols, 2007; Ethier, 2017).

The project arose through the preschool's needs and the enthusiasm of the teacher trainee in order to carry it out. On her own initiative, the trainee diagnosed the needs of the space after a multi-faceted information-gathering phase (direct observation, audio-visual recordings, and questionnaires for the twenty pupils in the classroom, their families and all the professionals related to the school). The results she obtained enabled her to analyse and interpret the required elements to transform the school playground. Then, with the collaboration of the pupils' families, she carried out the transformation of the space. This initiative was inspired by similar projects in other schools that used co-creation processes and that obtained highly satisfactory results in Catalonia, Spain (Sabadell-Artiga, 2012).

3.3. Data sources and data-analysis instrument

The data sources were the written materials generated by the three trainees during their respective practicum. These materials, according to the Practicum Guide (Faculty of Education and Psychology, 2016) were: (1) the reflective field diary, (2) the educational intervention description, (3) the self-reflective report on the implementation of the educational intervention and (4) the self-assessment rubric (p. 28-29). Trainees gave verbal consent to the authors of this article for their pieces of work to be analysed and published. Anonymity has been respected in all cases, both for the trainees, the trainees' mentors, the schools and the pupils that took part in the trainees' initiatives.

The three projects for this research were analysed under the Rubric for the Self-Assessment and Improvement of SL (RSAISL) projects, drawn up by the Research Group on Moral Education of the University of Barcelona (Rubio-Serrano, Puig-Rovira, Martín-García and Palos-Rodríguez, 2015). The RSAISL describes twelve dimensions of SL grouped into three sections: basic (needs, service, significance of the service, learning); pedagogical (participation, group work, reflection, recognition, assessment); and organisational (partnership centre consolidation, organisation consolidation) (Table 1). As the rubric creators explain, it is a tool that enables the identification of the strengths and weaknesses of a SL activity, facilitates pedagogical debate, optimises activities, shows diverse possibilities and encourages the implementation of new activities on the basis of those already carried out.

Table 1
Dimensions of the RSAISL (adapted from Rubio-Serrano et al., 2015)

SL dimensions		
Basic	Needs	Shortcomings or difficulties presented by the reality of a particular situation that, once detected, require actions aimed at improving it.
	Service	Set of tasks which are carried out altruistically and which produce a good that contributes towards alleviating certain needs.
	Significance of the service	Refers to the impact of the activity carried out, with respect to either the social benefit it produces or the civic awareness demonstrated by those performing it.

	Learning	Knowledge, competences, behaviours and values acquired spontaneously or through the educators.
Pedagogical	Participation	Intervention carried out by participants in an activity with the intention of contributing, together with other stakeholders, to its design, application and assessment.
	Group work	Process of peer assistance aimed at the preparation and development of an activity undertaken by all participants.
	Reflection	Mechanism for the optimisation of learning based on consideration of the experience, in order to make sense of it and acquire new knowledge.
	Recognition	Set of actions intended to let participants in the activity know that they have carried it out correctly.
	Assessment	Process by which information is obtained to discover participants' performance in an activity and thus enable feedback to be offered which can help them improve.
Organisational	Partnership	Collaboration between two or more independent social institutions aimed at the joint performance of an activity.
	Centre consolidation	Process by which a formal or non-formal education centre discovers, pilots, integrates and supports SL initiatives.
	Organisation consolidation	Process by which a social organisation discovers, pilots, integrates and supports any SL project.

In this study, we considered convenient to omit the final dimension (Organisation consolidation), since it refers to the process through which a social organisation discovers, tests, integrates and supports a SL project. The reason for omitting this dimension was that the SL initiatives involved schools and do not included external social organisations where other actions were carried out. It was therefore not relevant to any of the three projects presented here.

Thus, to obtain data, the RSAISL guided the content analysis of the written documents generated by the students during their practicum through an interpretative process. The researcher who carried out the analysis tutored the three trainees; therefore, she visited the schools during the course of the SL projects and had good knowledge of the context and of the activities that were carried out.

4. Results

The results of the application of the RSAISL are presented for each project analysed and according to the eleven dimensions that comprise the three sections of the rubric (Table 1). They are also represented in the form of a spider graph, as suggested by the RSAISL authors, in order to clearly display the strengths and weaknesses of the three projects analysed (Figure 1). Different colour corresponds to: blue for "Design and promotion of a campaign to recycle mobile phones"; red for "Collaboration in the municipal blood donation campaign"; and green for "Design and dynamization of the project for improving the school playground". The results are also complemented with excerpts from the reflective field diaries of the teacher trainees.
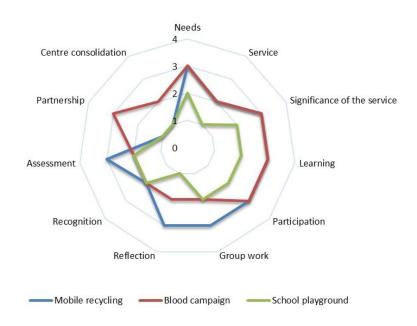
Figure 1. Results obtained for each project once applied the RSAISL.

4.1. Design and promotion of a campaign to recycle mobile phones

Following the application of the RSAISL, the results are displayed in table 2. The shaded boxes represent the values assigned to each dimension.

Table 2
Results of project 1. Design and promotion of a campaign to recycle mobile phones.

Dimension/Levels	I	II	III	IV
Needs	Unknown	Presented	Decided	Discovered
Service	Simple	Continued	Complex	Creative
Significance of the service	Incidental	Necessary	Civic	Transformative
Learning	Spontaneous	Planned	Useful	Innovative
Participation	Closed	Defined	Shared	Spearheaded
Group work	Undetermined	Collaborative	Cooperative	Expansive
Reflection	Vague	Occasional	Continuous	Productive
Recognition	Casual	Intended	Reciprocal	Public
Assessment	Informal	Intuitive	Competence-based	Joint
Partnership	Unilateral	Directed	Agreed	Built
Consolidation	Incipient	Accepted	Integrated	Identity-defining

The "Needs" value is justified because the participants, together with the educators, decide the needs they wish to address through the analysis of different

problem issues and the selection of one of them; in this case the organisation of the campaign to collect obsolete mobile phones for their subsequent recycling.

Meanwhile, the "Service" dimension has a prolonged duration (the entire practicum phase of the teacher trainee) and the tasks entail a moderate level of demands and engagement on the part of the participants. They are involved in searching for information, designing the campaign, producing leaflets and planning strategies for the collection of mobile phones.

The "Significance of the service", "Learning", "Participation", "Group work" and "Reflection" dimensions are given a value of 3. This means that the service responds to a need of the community and the participants are aware of its social dimension; that the learning processes are closely related to the service; that the participation in the design and implementation of the activity is shared; that the group work is approached on a cooperative basis and that the reflection process is progressive, taking place throughout the activity. Specifically, participants work on the life cycle of mobile phones and reflect on the social impacts during the aforementioned cycle, as well as personally reflecting on their own proper, responsible use of mobile phones.

In the "Recognition" dimension, the participants' work is positively reinforced and an assessment is made of what is achieved by the end of the service. To cite the trainee's reflective field diary: "The results have surprised both the students and me. We didn't think that we'd end of collecting so many mobile phones."

The "Assessment" dimension is assigned a value of 3, since it improves the students' competence development. In the trainee's educational intervention, there is evidence from various questionnaires and assessment tests completed by the students that confirm the value given in this dimension.

Finally, the "Partnership" and "Consolidation" dimensions are assigned the lower value of 1, since there is only one organisation involved in the project, namely the primary school, and the project is promoted by the trainee. There was no prior knowledge of SL in the school and no similar activities had been carried out. As such, consolidation in the centre is considered incipient.

It is important to note that the project stems from a need detected by the trainee, who knows how to motivate and engage the students in the project due to the fact that it addresses a theme with which they are familiar and constitutes a real issue. The final assessments made by the 6th grade pupils taking part in the initiative are very positive. Highlights include: "It's been really fun and different from what we usually do"; "I'd like to do it more often"; "The teacher trainee has changed our routine and the way of doing classes"; "It's a shame that we do so little of this sort of thing, it's better than doing exercises from books and we learn more quickly"; "It could be done every year with 6th grade pupils, even if there was no trainee" (extracts from the practicum final report, not published).

4.2. Collaboration in the municipal blood donation campaign

The values assigned in this project (Table 3) do not vary greatly from those assigned in the previous one (Table 2).

Table 3
Results of project 2. Collaboration in the municipal blood donation campaign.

Dimension/Levels	I	II	III	IV
Needs	Unknown	Presented	Decided	Discovered
Service	Simple	Continued	Complex	Creative
Significance of the service	Incidental	Necessary	Civic	Transformative
Learning	Spontaneous	Planned	Useful	Innovative
Participation	Closed	Defined	Shared	Spearheaded
Group work	Undetermined	Collaborative	Cooperative	Expansive
Reflection	Vague	Occasional	Continuous	Productive
Recognition	Casual	Intended	Reciprocal	Public
Assessment	Informal	Intuitive	Competence-based	Joint
Partnership	Unilateral	Directed	Agreed	Built
Consolidation	Incipient	Accepted	Integrated	Identity-defining

The "Needs" are also decided together with the pupils, based on the approach of the project. The "Service" has a similar duration to that of the previous project, since it is also led by the trainee for the duration of the practicum phase. The "Significance of the service" responds to a civic need of society which is already well known but for which it is always necessary to carry out campaigns and raise awareness about the importance of blood donation. The "Learning" is considered extremely useful, since the training activities are closely related to the service. The curricular content related to the blood circulatory system is perfectly integrated in this project and is useful for the participating pupils, giving the service greater significance.

The "Participation" dimension involves all the participants, since pupils share responsibility with their educators in the design and implementation of the entire activity, and the "Group work" dimension is collaborative, since the participants contribute to a collective project that requires joining together autonomous and independent tasks. In this case, the "Reflection" dimension is not present throughout the project, but rather it is "Occasional", occurring in the final phase. Unlike the previous project, the "Assessment" dimension is intuitive, without criteria or defined indicators, although it is stated that the set goals were achieved.

As far as the "Partnership" dimension is concerned, agreements are reached with the two organisations (one educational and one social) responsible for the blood donation campaigns. They jointly agree the conditions of application of the SL project, which is designed exclusively by the social organisation. The "Consolidation" of centres

and organisations is accepted. Specifically, this SL project has the recognition of the management team of the centre and the backing of part of the teaching staff, since it is an activity that has been carried out for a few years.

4.3. Design and dynamization of the project for improving the school playground

Generally speaking, the values of RSAISL in this project (Table 4) are slightly lower than in the other two (Tables 2 and 3). The project is carried out on the basis of a need already presented or explained by the management of the school. The adaptation of the outdoor space is a shortcoming presented to the trainee as a possible practicum project.

Table 4
Results of project 3. Design and dynamization of the project for improving the school playground.

Dimension/Levels	I	II	III	IV
Needs	Unknown	Presented	Decided	Discovered
Service	Simple	Continued	Complex	Creative
Significance of the service	Incidental	Necessary	Civic	Transformative
Learning	Spontaneous	Planned	Useful	Innovative
Participation	Closed	Defined	Shared	Spearheaded
Group work	Undetermined	Collaborative	Cooperative	Expansive
Reflection	Vague	Occasional	Continuous	Productive
Recognition	Casual	Intended	Reciprocal	Public
Assessment	Informal	Intuitive	Competence-based	Joint
Partnership	Unilateral	Directed	Agreed	Built
Consolidation	Incipient	Accepted	Integrated	Identity-defining

The "Service" is straightforward, with a short duration, composed of simple tasks whose execution entails limited demands and engagement. Although a significant amount of preparation work is involved, the service itself takes place in a single morning, during which the trainee, the pupils, the centre educators and the families participate in the improvement of the playground.

The "Significance of the service" is evaluated as necessary: it responds to a need of the community, in this case a need of the school, although the participants do not always manage to perceive its social dimension.

As regards the "Learning" dimension, the trainee and pupils acquire learning that is not necessarily related to the service carried out.

In the "Participation" and "Group work" dimensions, the pupils provide occasional contributions required by the teacher trainee at various points of the process but at no time become promoters or leaders of the project. Neither are they involved in deciding on important aspects of the project's various phases, as occurs in other cases of school playground improvements, in which pupils from the early years education upwards lead these processes (Sabadell-Artiga, 2012). In this project, the pupils contribute on a collaborative basis in this collective project by carrying out together autonomous and independent tasks. The participation of the families cannot be incorporated in this group work since it is carried out on a very occasional and sporadic basis, although their opinions and occasional collaboration were welcomed.

The "Reflection" dimension is diffuse since the reflective activity is not planned and no tasks are proposed to encourage it, although the experience itself might come up naturally as the subject of discussions. Indeed, although the trainee has a reflective instrument (the field diary), the other participants do not. In this case the "Assessment" dimension is also intuitive, with no defined criteria or indicators.

As in the other two projects, the "Recognition" dimension focuses on the educational centre itself but does not acquire a public dimension. Citizens are not informed of the action and no initiatives are carried out to thank families for their contribution or to celebrate the successful results achieved.

In this case, on an organisation level, it is worth highlighting that, as in project 1, both the "Partnership" and "Consolidation" dimensions of the SL initiative in the educational centre are on level one of the RSAISL. This means that a single organisation takes part in the project and that the project is implemented by the trainee, who involves the families in the SL experience.

In her field diary, the trainee states that the experience has been largely positive and that it has strengthened competences related to the teaching profession. However, she also acknowledges that she has experienced some stressful situations, such as time constraints, since all initiatives had to be planned to be carried out during the practicum stage: contacting families to request their opinion and collaboration, obtaining the material and executing the planned actions.

5. Discussion

SL experiences presented here were viewed very positively by all the people involved all along its implementation, and the RSAISL allowed us to quantify and systematize these good impressions in such a way as to encourage reflection, as its authors point out (Rubio-Serrano et al., 2015).

Among the positive aspects of the projects presented here, we highlight the fact that the teacher trainees have carried out SL projects on the basis of real needs related to and focusing on their respective schools and fostering sustainability; that is, they have implemented school-based initiatives. The three projects attend a need of

the community and the service is transformative, especially in project 1 and 3. Through these initiatives, the future teachers ensure that pupils contribute as active members of the community, with activities and tasks that hold meaning for them (improving the environment on the basis of real problems) and have greater awareness of problems. According to Wall (2017), they adopt the role of change agents and begin to cultivate "a sense of personal agency as a future teacher" (p. 188). In addition, the pupils showed greater motivation in the SL projects than in the standard tasks of the school. It should also be pointed out that not only is the acquired learning related to the competences of the future teachers and sustainability but they also carry out learning related to the official curriculum.

Generally speaking, the trainees' field diaries show that these SL experiences have enabled them to reflect on current and local social aspects and explore them more deeply; for example, the importance of recycling the materials of mobile phones. They see SL as a very suitable methodology to be applied in schools and have a very positive view of the response shown by pupils, highlighting a high level of motivation and empowerment. As regards project 3, the involvement of families in obtaining the results is viewed very positively since without their collaboration, the school playground transformation would not have become a reality.

The obstacles or aspects to be improved include the fact that needs are not always discovered on the basis of a research project, since the time constraints of the practicum phase must be taken into account. Therefore, it can be argued that the time factor is a limitation that conditions the trainees' proposals. Furthermore, there were no plans in place to thank participants and assess the tasks carried out. For example, once the transformation of the playground was completed, it could have been celebrated with a tea party open to the whole community.

Of the three projects presented here, the only one that is consolidated is the collaboration in the blood donation campaign, since the school where it was held decided to participate in these campaigns on a regular basis. Given that SL is not compulsory during the practicum phase, the other two projects have been one-off experiences carried out on the initiative of the trainees themselves. Therefore, it is unlikely that they will achieve consolidation, although they will have served as an example and it will depend on the school in question to decide whether to carry out more initiatives of this kind in the future or not.

To finish with and in accordance to Hofman-Bergholm (2018), the projects exposed above can be seen as a kick-start to the change that initial teacher training needs in order to progress towards sustainability in the field of education. They are a small pilot project that involves a small number of students in their practicum phase that, due to the positive results obtained, it can be expanded over time (Anderson, 2000). Adequate training of pre-service teachers is needed so that those can achieve the professional competencies and infuse these practises to environmentally educate future citizens through real environmental facts, concerns and challenges (Álvarez-García, Sureda-Negre, & Comas-Forgas, 2015).

Regarding the limitation of this study, we can spot that the sample may seem restrictive, but there are not many student teachers that choose to do a SL project related to sustainability during their practicum phase at our university. Another limitation of the study is that one person (the researcher who tutored the three trainees of the projects discussed above) has carried out the analysis of the documents in order to obtain the results presented here. According to Rubio-Serrano et al. (2015), the results would have been richer if the trainees themselves and the school teachers involved in implementing the SL experiences had applied the RSAISL.

6. Conclusion

In this paper, we have focused on SL practices related to sustainability, led by teacher trainees and carried out in early years and primary schools (from 3 to 12 years old). The three initiatives presented here have had a positive impact on the teacher trainees and the respective schools, and although they can be improved upon, they constitute a good starting point for rolling out SL at the different levels of formal education. Through SL, in addition to 'providing a service to learn' (which entails practical learning), participants also 'learn how to provide a service' (Bringle et al., 2016). The trainees have shown that not only they have immersed themselves in the reality of their respective schools and of professional practice but also that they have transformed this reality. It has also given them strategies to help pupils connect school learning and social challenges and conflicts.

As such, the practicum phase is a highly suitable setting for rolling out this methodology, since it makes training periods in schools more active and critical, not only as an opportunity to absorb knowledge but also as a way of actively participating in the transformation and innovation processes of our educational system. It also constitutes a contribution to incorporating sustainability in teacher training (Hofman-Bergholm, 2018), since SL involves transdisciplinary work on the basis of identified real problems, students play the leading role in their learning experience, the changes achieved tend to be local but with a global perspective and impact, and powerful reflective tools are used throughout the process. SL enables students to develop the necessary skills to act in a changing society and to contribute to its improvement.

As stated in the discussion, learners not always have a participative role in the choice of the problem addressed, neither in the design of the service learning projects, due to time constraints but also due to their lack of experience in such processes. Until teachers are not able to observe reality with critical perspective and design projects based on its social and environmental problems, they will not be able to foster learners' critical perspective and sustainability. Practicum stages are appropriate to encourage these concerns.

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