

Perceived efficacy and student profiles in the university Service-Learning

Eficacia percibida y perfiles estudiantiles en el Aprendizaje-Servicio universitario

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Abstract

The Service-Learning methodology at the university offers professional training related to the development of formative, academic and civic competencies linked to university studies. Its implementation makes it possible to bring the university closer to society by providing a service to the community. However, it is necessary to establish strategies in its application, to enhance the contributions that this methodology can offer to the educational field. In this context, the aim of this paper is to assess the effectiveness of the Service-Learning methodology from the perception of university students, analysing the existing differences between the sociodemographic variables: studies, gender, age, course and ownership of the centre, identifying, in turn, student profiles that show the level of applicability of University Service-Learning. Through a non-experimental exploratory study, information was collected from a total of 304 students from public and private universities in Spain. Within the Service-Learning methodology, three dimensions of the applied instrument (Formative, Learning and Service) are analysed. The results obtained suggest a greater approach to service in entailment with the learning obtained at the university.

The differential studies show the lack of recognition in the students of the bachelor's degree in social education, as well as the scarce response of the experience to their formative and academic expectations. Women show greater reflection and social sensitivity than men. Regarding the ownership of the centre, students from private universities show a greater sense of service development. In addition, three student profiles are obtained with a variety of characteristics regarding the way in which the methodology is applied. The study concludes with the detection of the need to generate strategies to improve the Service-Learning methodology, with emphasis on favouring a more conscious learning about the competencies acquired in university degrees.

Keywords: service learning, high education, training, learning, community services, civics, education methodologies.

Resumen

La metodología Aprendizaje-Servicio en la universidad ofrece una formación profesional ligada al desarrollo de competencias formativas, académicas y cívicas vinculadas a los estudios universitarios. Su implementación permite acercar la universidad a la sociedad mediante la prestación de un servicio a la comunidad. Sin embargo, es preciso establecer estrategias en su aplicación, con la finalidad de potenciar las aportaciones que esta metodología puede ofrecer al ámbito educativo. En este contexto, el objetivo del presente trabajo es valorar la eficacia de la metodología Aprendizaje-Servicio desde la percepción del estudiantado universitario, analizando las diferencias existentes entre las variables sociodemográficas: estudios, género, edad, curso y titularidad del centro, identificando, a su vez, perfiles de estudiantes que muestren el nivel de aplicabilidad del Aprendizaje-Servicio Universitario. A través de un estudio no experimental de carácter exploratorio, se recoge información de un total de 304 estudiantes de universidades públicas y privadas del territorio español. Dentro de la metodología Aprendizaje-Servicio se analizan tres dimensiones que recoge el instrumento aplicado (Formativa, Aprendizaje y Servicio). Los resultados obtenidos sugieren un mayor acercamiento al servicio en vinculación con el aprendizaje obtenido en la universidad. Los estudios diferenciales muestran la falta de reconocimiento en los estudiantes del Grado en Educación Social, así como la escasa respuesta de la experiencia a sus expectativas formativas y académicas. Las mujeres presentan mayor reflexión y sensibilidad social que los hombres. Y respecto a la titularidad del centro, los estudiantes de universidades privadas manifiestan un mayor sentido del desarrollo del servicio. Además, se obtienen tres perfiles de estudiantes con variedad de características en torno a la forma de aplicación de la metodología. El estudio concluye con la detección de la necesidad de generar estrategias que mejoren la metodología Aprendizaje-Servicio,

poniendo énfasis en favorecer un aprendizaje más consciente sobre las competencias que se adquieren en los grados universitarios.

Palabras clave: aprendizaje-servicio, educación superior, formación, aprendizaje, servicios a la comunidad, educación cívica, metodologías educativas.

Introduction

Service-Learning (SL) is an educational methodology based on learning through action, cooperation with the community and reflection on the process itself (Dafonte-Gómez, 2023). These elements are merged into a single project with the purpose of addressing and improving the needs of the environment. SL projects emerge in response to real needs, seeking to effect significant improvements. This approach leads to the acquisition of both transversal and basic competencies by the participating students, generating an increase in their social commitment. Likewise, these projects provide a professional training pathway by connecting students with the reality of the workplace and encouraging them to resolve situations in the professional sphere (Belando-Montoro et al., 2022). From this perspective, the SL methodology has been used in the university environment to achieve learning that goes beyond those associated with strictly academic competencies, such as achieving civic competencies by providing a service to the community. At the same time, Service-Learning at the University [SL(U)] involves learning practices related to the students' professional future (Gómezescobar & Simón-Medina, 2022; Ruiz-Montero et al., 2022). These qualities have motivated processes of institutionalisation of SL(U) which, in European universities, have developed unevenly (Meijs et al., 2019). This global concern led Lough and Toms (2018) to conduct a study to assess the strategic trajectories needed for growth in the field. The researchers identified several priorities, including sharing best practices and building a 'knowledge community', as well as greater engagement and preparedness of both students and host communities.

On the other hand, other authors (Belando-Montoro et al., 2022; Blanch et al., 2020; Duque, 2018; Gil-Gómez et al., 2016; Ibarrola & Artuch, 2016; López-Fernández & Benítez-Porres, 2018; Ruiz-Corbella & García-Gutiérrez, 2020; Pérez-Pérez et al., 2019; Ruiz-Montero et al., 2022; Soneira, 2019) highlight that SL(U) favours the development of fundamental competencies and qualities in professional practice, as

well as other benefits directed towards the person him/herself and his/her commitment to social justice. León-Carrascosa et al. (2020) present the contributions of SL(U), collected by the aforementioned authors, classifying them into three dimensions: *Formative*, *Learning* and *Service*, placing within each one the elements that would correspond to it, bearing in mind the interrelation that could exist between them due to the multidimensionality of the methodology itself.

The *Formative* dimension would include the consolidation of academic knowledge, the acquisition of professional competencies and practical knowledge, the development of self-training and the capacity to learn in new contexts. In the *Learning* dimension, the acquisition of greater social responsibility and personal growth, communicative competence, the practice of professional tools and the development of links with the profession, as well as the promotion of educational and civic commitment to the construction of the common good would be highlighted. In the *Service* dimension, it is worth highlighting the reinforcement of the capacity for initiative in decision-making and the increase in commitment to the services with which the students are linked, as well as the strengthening of their critical thinking, the improvement of their capacity for organisation and planning, together with the increase in participation in evaluation processes.

At the same time, the scientific literature has addressed different perspectives of SL(U), thus contributing to a better understanding of its conceptual aspects as well as its evaluation and impact. Thus, for example, the application of SL(U) has been the subject of research that has emphasised its contribution to linking theory and practice (Resch & Schrittmesser, 2023). In the case of Spain, there is a predominance of work involving students from educational degrees; Early Childhood Education Teacher (Blanch et al., 2020), Primary Education Teacher whose service is carried out in Primary Education centres (Mayor & Rodríguez, 2015), at university (Suárez-Lantarón, 2023), and in different collectives of minors (Chiva-Bartoll et al., 2020; Gómezescobar & Simón-Medina, 2022; Soneira, 2019), Bachelor's Degree in Social Education (Rodríguez-Izquierdo, 2020; Ruiz-Corbella & García-Gutiérrez, 2020), Bachelor's Degree in Pedagogy (Sotelino et al., 2019), Degree in Early Childhood Education, Degree in Primary Education and Degree in Pedagogy (Carrica-Ochoa, 2017), Degree in Early Childhood and Primary Education and Official Master's Degree in Special Education (Gómez-Hurtado et al., 2019) and Degree

in Primary Education and Degree in Physical Activity and Sport Sciences (García-Rico et al., 2023).

In these studies, the results following experiences in SL(U) activities, mostly linked to one of the subjects, are somewhat disparate in terms of competencies developed and evaluations made by the participants. Thus, in the case of the study by Chiva-Bartoll et al. (2020), it was shown that the systematic reflection provided by ApS(U) produces meaningful and applicable learning in real contexts. This linking of theory and practice was also revealed in the studies by Mayor and Rodríguez (2015) and Suárez-Lantarón (2023).

Other studies compare the results of students who participate in these experiences with those who choose to carry out other types of work within the same subject. This is the case of the study by Sotelino et al. (2019), linked to a subject of the bachelor's degree in Pedagogy. In the analysis carried out to compare the acquisition of civic-social competencies in both groups, it was found that the students who had taken part in this experience obtained slightly higher averages. This type of competence has also been assessed in other experiences. Blanch et al. (2020) found that participants showed a significant improvement in competencies related to cooperation, participation, social responsibility, perseverance and effort. García-Rico et al. (2023) also reveal that students highlight greater social awareness and consciousness, as well as ethical demands towards the recipients of the service. Participants in Soneira's (2019) study highlighted the development of critical citizenship, learning to diagnose problems and proposing knowledge-based solutions. In Ruiz-Corbella and García-Gutiérrez's (2020) project, the most valued objective was civic engagement and intercultural dialogue. However, similar results have been found in experiences that have been carried out in other degrees. One of them is the one carried out in the Faculty of Psychology at the Autonomous University of Barcelona with Romani communities and public schools. Among the contributions highlighted by the students is the acquisition of competencies related to the ethical and social dimension, such as the need for socio-educational intervention or awareness of diversity (Lalueza et al., 2016).

Rodríguez-Izquierdo (2020) and Hervás-Torres et al. (2022) found that the SL(U) methodology influences students' academic engagement. In this sense, Martínez Lozano et al. (2018) highlight the importance of influencing competencies such as the capacity for initiative and procedural evaluation for this engagement to be effective.

On the other hand, there are studies on the implementation of SL(U), such as those described below, which establish significant differences depending on some of the variables already mentioned, such as the *studies* taken by participants in projects based on this methodology or others such as *gender*, *age*, *year* and even the university in which they are enrolled.

With regard to the *gender* and *age* variables, studies such as that of Ruiz-Montero et al. (2022), which aims to examine the perception of professional competence of students studying Physical Activity and Sport (PAS) and participating in SL(U) projects, show the existing relationships between both factors, as well as with the typology of the recipient groups. Women participants in this study show a greater relationship with groups with functional and social diversity, while men show a greater capacity to relate to groups with cultural and/or religious diversity. Regarding the predominant age of the participants, it is in the range between 21 and 24 years, followed by a second range of <20 years. Other studies such as that of Solomon and Tan (2021) also highlight the determinant role of age and gender in the development of experiential learning in SL(U), especially in first- and second-year undergraduate students, as well as in those who have had no previous experience in this methodology. Studies such as that of Lacalle and Pujol (2019) highlight the participation and involvement of women in the SL(U) project carried out, as well as a greater willingness to express their impressions of the experience, even considering a specific approach to this issue from the perspective of gender studies in future SL(U) experiences.

Focusing on the *course* variable, works such as those by Deeley (2015) argue that the application of SL(U) in more advanced courses provides greater preparation for their professional future. On the other hand, works such as that of McIlrath (2012) show how the implementation of the SL(U) methodology in the first year of the degree, despite the fact that this condition requires greater teaching and institutional support, allows contextualising and situating the learning from the beginning of the studies, thus achieving more significant and, therefore, deeper learning for the following years. In the work of Mella (2019), students in the first two years of undergraduate studies show greater satisfaction with their training and general self-efficacy, together with lower levels of uncertainty about the future. On the other hand, Bringle et al. (2010) consider that the implementation of this methodology in the first year increases students' motivation to enrol in subsequent years.

With regard to the *ownership of* the institution, we find universities and private centres in Spain belonging to the Church, such as those of the Society of Jesus, in which SL(U) is already part of their institutional identity. In these centres, the project “Strengthening Service-Learning at Jesuit Universities in Spain” was launched in 2020 with the aim of institutionalising this methodology in their network¹, through the joint implementation of activities, training and the development of tools for measuring the impact of the methodology. In addition, these institutions already incorporate compulsory subjects based on SL such as “Analysis and Social Action” or the SL subject “Interpersonal Communication”, both taught at the Institut Químic de Sarrià (IQS) of the Universitat Ramon Llull, or the completion, also compulsory, of an SL final project, as is the case at the Faculty of Economics and Business Studies of the Universidad Pontificia de Comillas.

On the other hand, in public universities in Spain, we find a growing implementation of SL(U) as a methodology in a wide range of subjects and with notable efficiency in terms of the acquisition of competencies, although, at present, it is not compulsory to take subjects based on this methodology in the syllabus. A good example of the growing development of SL(U) is the data that the Universitat Rovira i Virgili (2023) shows on its website, where in the last 10 years, the number of subjects that use SL(U) has increased from 13 to 42 and the number of participating students has risen from 181 to 518.

Based on the above, this study aims to assess the effectiveness of the SL(U) methodology from the students’ perception, analysing the differences according to the different socio-demographic variables referred to (studies, gender, age, year and title), identifying, in turn, student profiles that show the level of applicability of this methodology, which gives it an added value over other studies aimed at a single centre and/or a single degree.

Method

The present study falls within the quantitative methodologies, specifically, it follows a non-experimental design (ex-post-facto) of an exploratory and descriptive nature.

¹ The network of centres is made up of the Universidad Pontificia Comillas, Universidad de Deusto, Esade, Universidad Loyola Andalucía, Institut Químic de Sarrià (IQS, and within it its Faculty of Tourism and Hotel Management), Centro Universitario Sagrada Familia (SAFA) and Instituto Nevares de Empresarios Agrarios (INEA).

Sample

The study population is made up of undergraduate university students in Spain who have participated in innovation projects based on the SL(U) methodology. The type of sampling used was incidental, with a sample of 304 students. 66.8% belonged to public centres and 33.2% to private centres. Most of the participants belonged to the area of knowledge of Social Sciences (80.3%), with 57.9% in first grade, 13.5% in second grade, 18.1% in third grade and 10.5% in fourth grade. The socio-demographic data are made up of 82.6% women and 17.4% men, of whom 59.9% are aged 20 years or younger and 44.1% are aged 21 years or older.

Instrument

The measurement instrument that evaluates the Service-Learning methodology designed by León-Carrascosa et al. (2020) was used. This questionnaire consists of 29 items, with Likert scale responses, with 1 being not at all, almost not at all, and 5 totally, very much. The use of this instrument enriches the analysis and research on the evaluation of educational programmes based on the SL methodology. It focuses on three key areas of intervention (Formative, Learning and Service) experienced by the students, thus addressing a gap in the direct measurement of these aspects by the protagonists, as indicated by the authors themselves. In addition, the quality of the instrument is highlighted, supported by construct validation and verification of the dimensional structure (Table I provides details of the dimensions and their respective items).

After obtaining the sample data, reliability was studied to verify the consistency and stability of the measurements over time and in various situations. The results were excellent, reaching a Cronbach's Alpha of 0.943, above 0.9, as suggested by George and Mallery (2003). The high internal consistency between items indicates that the measures are reliable and that the instrument is appropriate for measuring the study variable in the sample analysed.

TABLE I. Descriptive analysis of dimensions and items with means and standard deviations

Dimensions	Items	Mean	Typ. dev.
Formative	1. The service is related to the curricular contents of my future profession.	4,14	,924
	2. The service is linked to learning at university.	4,02	,844
	3. The learning I have achieved is useful for my training as a professional.	4,43	,806
	4. The learning I have achieved is useful for my personal development.	4,48	,792
	5. I have gained practical knowledge through experience.	4,32	,904
	6. I have developed the ability to learn in new contexts.	4,22	,899
Learning	7. I consider that I have acquired greater responsibility for my professional performance.	4,23	,871
	8. I have grown personally during the service.	4,18	,886
	9. I have developed the ability to organise and plan my time.	3,81	1,024
	10. The Service-Learning methodology has helped me to obtain tools for my professional future.	4,17	,907
	11. The experience has provided me with more social reflection linked to my future professional practice.	4,30	,889
	12. I have shared reflections with different people on the practice of service-learning.	3,93	1,125
	13. Teamwork has made it easier for me to create knowledge networks.	3,81	,990
	14. My communication skills have improved.	3,99	,919
	15. I understand the meaning of service performed as a help to others.	4,39	,745
	16. I have been aware of the need to link the reality of society with the university.	4,35	,739
	17. The experience has increased my social sensitivity.	4,31	,830
Service	18. When necessary, I have made decisions for the smooth running of the service.	3,93	,891
	19. I have taken the initiative to put forward different points of view to organise the sessions.	3,78	1,077
	20. Overall, the service (project, programme) has met my expectations.	4,25	,907
	21. My service has responded to the needs of the institution/entity where the service is performed.	4,17	,918

(Continued)

TABLE I. Descriptive analysis of dimensions and items with means and standard deviations
(Continued)

Dimensions	Items	Mean	Typ. dev.
Service	22. I have felt committed to the project.	4,41	,843
	23. I have carried out activities according to the needs of the project participants.	4,18	,957
	24. The distribution of tasks has been adequate.	3,99	,946
	25. The project has been evaluated throughout its process.	3,88	1,010
	26. My participation has been recognised.	4,14	1,049
	27. I have participated in the organisation and development of the project.	4,16	,971
	28. I have participated in the coordination of activities during the service.	3,88	1,173
	29. My participation has responded satisfactorily to the needs of the institution/entity where the service is performed.	4,33	,839

Source: compiled by the authors.

Procedure

For the collection of information, contact was made by e-mail with different heads of innovation projects located in directories of SL(U) knowledge networks, as well as offices created for their promotion in university centres. In this e-mail, the objective of the study was explained, in addition to guaranteeing the anonymity and confidentiality of the data. Access to the questionnaire was provided through the Google Forms application and the invitation to be disseminated to students participating in projects with SL(U) methodology.

Results

Descriptive analyses

The presentation of the results will be organised according to the dimensions and items of the instrument used to assess the applicability

of the SL(U) methodology, which corresponds to the three key areas of intervention defined in dimensions (*Formative, Learning and Service*). In this sense, the descriptive studies of the items, taking the students, make it possible to assess the strengths and weaknesses in the development of educational experiences through the SL(U) methodology. Thus, the students present averages above 4 in all the dimensions evaluated, but slightly lower in the characteristics of the Service dimension shown below.

In the *formative* dimension, high and homogeneous evaluations were found in the learning obtained in relation to professional and personal training (items 3 and 4, respectively). However, the results drop to around 4 in item 1, which focuses on relating the part of the service to the curricular content of their future profession and its link with learning at university (item 2).

With regard to the *Learning* dimension, there is an increase in social sensitivity (item 17) and greater social reflection linked to professional practice (item 11). Thus, students understand the meaning of service as part of helping others (item 15) and are more aware of the need to link social reality with learning at university (item 16). On the other hand, lower ratings are obtained in students' perception of their ability to organise and plan time (item 9), the creation of knowledge networks (item 13) and the possibility of sharing reflections on the practice of Service-Learning with others (item 12).

Concerning the development of the *Service* dimension, it is perceived that the students felt committed to carrying out the project (item 22), as well as to responding satisfactorily to the needs of the entity where they carried out the service (item 29). However, in those aspects that are more competency-based after the implementation of the service, more dispersed evaluations were obtained and below the overall average, highlighting the development of the initiative in the organisation of the sessions (item 19), the evaluation of the project throughout its process (item 25) and in the participation in the coordination of activities during the service (item 28).

Differential analysis

To carry out the differential studies, we continued taking the items of the instrument, based on the dimensions that make it up, to analyse

the existence of significant differences according to *studies*, *gender*, *age*, *year of study* and university *status*. To this end, the following tests are used: Student's t-test and one-factor ANOVA (both for independent groups). A 95% confidence interval is used, leaving a 5% margin of error, i.e. an alpha of 0.05 ($p < 0.05$). Similarly, the effect size is calculated to determine the significance of the inferential results. For this, Cohen's *d*-test (Cohen, 1992) was used for differences with two categories (0.2: small effect; 0.5: moderate effect; 0.8: large effect) and the ETA Squared (η^2) test (Pardo and Ruiz, 2005) for differences with more than two categories (0.01: small effect; 0.06: medium effect; 0.14: large effect).

Depending on the *studies*, significant results are obtained in the *Formative* dimension among students of the bachelor's degree in early childhood education, bachelor's Degree in Primary Education and Other studies on the link between service and learning at university, with students of the bachelor's degree in early childhood education perceiving it with lower scores (0.018; $p < 0.05$, with a medium effect size, $\eta^2 = 0.07$). Students of the bachelor's Degree in Social Education present lower results in relation to students of the Bachelor's Degree in Primary Education on the usefulness of learning for their personal training (0.001; $p < 0.05$, with a small effect size, $\eta^2 = 0.058$) and the improvement of the ability to learn in different contexts (0.003; $p < 0.05$, with a small effect size, $\eta^2 = 0.05$), with the latter having lower means compared to the group of students of other degrees. Finally, significant differences are observed in the acquisition of practical knowledge (0.000; $p < 0.05$, with a medium effect size, $\eta^2 = 0.10$) of the students of the Degree in Social Education with respect to the rest of the categories of the variable *studies*, the results being lower.

Along the same lines, the *Learning* dimension reveals lower scores in the bachelor's degree in social education studies with respect to the others in the acquisition of responsibility for professional performance (0.008; $p < .05$, with a small effect size, $\eta^2 = 0.045$) and in personal growth after the experience (0.005; $p < .05$, with a small effect size, $\eta^2 = 0.049$).

Thus, the results show that students of the bachelor's degree in social education perceive the *Service* performed at a significantly lower level ($p < 0.05$) than students of the bachelor's degrees in early childhood education, Primary Education, Pedagogy and other studies, with effect sizes ranging from small to medium (table II).

TABLE II. Differential analysis of items Service according to studies

	p<0.05	Social Ed.	Children's Education	Primary education	Pedagogy	Other	η ²
Item 18	0.002	3.58	3.95	3.94	4.03	4.22	0.05
Item 19	0.005	3.43	3.64	3.80	4.15	4	0.04
Item 20	0.002	3.87	4.46	4.31	4.44	4.32	0.05
Item 21	0.000	3.78	4.36	4.39	4.15	4.13	0.06
Item 22	0.002	4.04	4.49	4.55	4.59	4.42	0.05
Item 23	0.000	3.81	4.03	4.44	4.38	4.15	0.06
Item 25	0.005	3.51	4.10	4.06	3.79	3.88	0.04
Item 26	0.007	3.75	4.15	4.35	4.15	4.23	0.04
Item 29	0.000	3.85	4.59	4.53	4.28	4.40	0.10

Source: compiled by the authors.

Similarly, the results reveal significant differences in the *gender* variable in relation to the *Learning* dimension, on the social reflection acquired after the experience and its link with future professional practice (0.004; $p < 0.05$) and the increase in greater social sensitivity (0.038; $p < 0.05$), with women having higher scores in both actions (with a small effect size, $d = 0.3$ and $d = 0.2$, respectively).

In terms of school *ownership*, private university students show significantly higher levels of *Service* development than public university students (with small to moderate effect sizes) (Table III).

TABLE III. Differential analysis of items Service according to ownership

	p<0.05	Public university	Private university	Cohen's d
Item 19	0.000	3.56	4.24	0.6
Item 22	0.001	4.30	4.63	0.3
Item 23	0.000	4.04	4.47	0.4
Item 26	0.000	3.99	4.47	0.4
Item 27	0.000	3.98	4.53	0.5
Item 28	0.000	3.65	4.36	0.7
Item 29	0.001	4.22	4.55	0.3

Source: compiled by the authors.

It should be noted that no significant differences were found in any of the dimensions and items of the instrument according to *age* and *grade*.

Cluster analysis

This type of analysis will allow us to identify the different student profiles in relation to the application of the SL(U) methodology. This test starts from an initially unclassified data set, in which the distance between elements is analysed through an iterative process, until each element is assigned to a group. Likewise, within the cluster analysis, the K-means method was used, taking into account the number of clusters set, since if the number is too high, we may encounter interpretation problems, and if it is too low, it may be the result of an inadequate representation of the study sample in the clusters.

For this purpose, the categories established for each variable from 1 to 5 (1, Not at all, and 5, Very much) were used as criteria for analysis in order to establish the clusters of the study.

For this purpose, the first cluster analysis, set to 5 clusters, showed the following results: it was observed that there were hardly any differences between clusters 2 and 4, and clusters 3 and 5. Given these results, the number of clusters was changed to 3 (however, a cluster analysis set to 4 clusters was carried out to see how the variables behaved, and we found two clusters with hardly any differences).

In this way, the analysis yielded adequate results that were easy and meaningful to interpret. Table IV shows the results of the final cluster centres where we are going to study the possible profiles identified that refer to the functioning of the SL(U) methodology from the students' experience.

The results with three clusters were satisfactory and each cluster could be defined more precisely: cluster 1 [*High applicability of SL(U)*], cluster 3 [*Medium applicability of SL(U)*] and cluster 2 [*Low applicability of SL(U)*].

To proceed with the description of the profiles, we will follow the guidelines of Hair et al. (2014) that point out the convenience of assigning a label to each cluster that specifies its nature, and the analysis of the means obtained by the elements of the clusters (either through discriminant analysis or analysis of variance). In our case, the analysis

TABLE IV. Final cluster centres. K-means method. Solution 3 clusters

DIM.	Items	Conglomerate		
		1	2	3
Formative	Item 1	4.40	3.41	3.95
	item 2	4.24	3.03	3.96
	Item 3	4.78	3.16	4.26
	Item 4	4.86	3.47	4.17
	Item 5	4.73	2.84	4.09
	Item 6	4.64	2.84	3.96
Learning	Item 7	4.62	2.81	4.03
	Item 8	4.59	2.88	3.92
	Item 9	4.20	2.47	3.57
	Item 10	4.58	2.88	3.90
	Item 11	4.73	3.09	3.95
	Item 12	4.38	3.03	3.48
	Item 13	4.14	2.78	3.59
	Item 14	4.36	2.75	3.78
	Item 15	4.70	3.50	4.15
	Item 16	4.56	3.72	4.21
Service	Item 17	4.64	3.66	3.97
	Item 18	4.35	2.78	3.59
	Item 19	4.20	2.47	3.50
	Item 20	4.69	2.94	3.94
	Item 21	4.60	3.06	3.82
	Item 22	4.86	2.91	4.14
	Item 23	4.66	2.75	3.85
	Item 24	4.44	2.78	3.63
	Item 25	4.26	2.63	3.63
	Item 26	4.62	2.56	3.85
	Item 27	4.61	2.81	3.85
	Item 28	4.47	2.06	3.50
	Item 29	4.70	3.13	4.10

Source: compiled by the authors.

of variance was chosen. First, a preliminary study was carried out to determine whether or not the homogeneity of variances was fulfilled through Levene's test, in order to apply the subsequent contrasts through the Game-Howell statistic (in the case of non-homogeneity) and the Scheffé statistic (for the other cases).

When analysing the subsequent studies, it was observed that all the dimensions showed significant differences between all the groups fulfilling the following criteria: cluster 1 showed higher mean differences with respect to cluster 2, and more moderate differences with respect to cluster 3; also, cluster 3 showed higher scores with respect to cluster 2. Therefore, when presenting the results, we will limit ourselves to highlighting the significant differences in the variables that we observed to be most relevant for each cluster in the dimensions and sub-dimensions of the scale.

Cluster 1 [*High applicability of SL(U)*] is made up of 55% of the student sample. It is characterised by a high level in all the characteristics that measure the development of the SL(U) methodology, as well as the competencies acquired by the students when participating in this type of experience. However, lower scores can be observed in linking the service with learning at university (item 2), planning and organising time (item 9), teamwork for the creation of knowledge networks (item 13), development of initiative (item 19) and student involvement in evaluation processes (item 25).

34% of the student sample belongs to cluster 3 [*Medium applicability of SL(U)*]. It is characterised by students who maintain high levels in the *Formative* dimension and medium levels in the *Learning* and *Service* dimensions. Likewise, we observe a series of variables with high scores that correspond to the *Learning* dimension, such as the improvement of communication skills (item 15) and the understanding of the service performed (item 16). Similarly, in the *Service* dimension, we have high scores in the commitment acquired through participation in the project (item 22) and in the response to the needs of the organisation after student participation (item 29). On the other hand, there are different variables with lower scores, notably the development of reflective competence (item 12), taking initiative (item 19) and coordinating activities (item 28).

Finally, cluster 2 [*Low applicability of SL(U)*] is made up of 11% of the student sample. It is characterised by a low level in the *Service* dimension, and medium-low in the *Formative* and *Learning* dimensions.

This group of students highlights low ratings in the *Formative* dimension focusing on the acquisition of practical content (item 5) and the development of the ability to learn in new contexts (item 6). In most of the competencies and skills linked to the *Learning* dimension, the results are low (communication, teamwork, personal growth and organisation); however, the variables centred on social commitment and awareness and the need to link social reality with the university (items 15, 16 and 17) stand out with higher ratings. Finally, in the *Service* dimension, lower scores are observed in the coordination of activities, taking the initiative and project evaluation (items 28, 19 and 25, respectively), with a notable feeling of lack of recognition in the participation of the service provided (item 26).

Discussion and Conclusions

The results obtained have made it possible to achieve the proposed objective and to demonstrate the effectiveness of the Service-Learning methodology at university [SL(U)]. After a more detailed analysis, it can be affirmed that students value the use of this methodology positively. The conclusions are presented below in relation to each of the dimensions evaluated: from a *formative* (as an end), *learning* (as a means) and *service* (as a commitment to the community) perspective (León-Carrascosa et al., 2020).

In the *Formative* dimension, the students show low scores in the connection of the service with the curricular contents of their future profession, as well as with learning at university. These results differ from those obtained in the study by Mayor and Rodríguez (2015) between the University of Almería and a public Primary Education centre, in which positive results were obtained in terms of linking theory with practice in the case of university students (students of the bachelor's degree in Primary Education). On the other hand, and according to Duque (2018), students value the learning obtained for their professional and personal development at a high level.

With regard to the *learning* generated after the service experience, it is suggested that it not only contributes to learning the subject matter, but also provides opportunities for students to develop fundamental time management skills. It also highlights the importance of creating

knowledge networks and reflective spaces to help ensure continuous learning, in line with the findings of Lough & Toms (2018). Students show greater sensitivity and social reflection linked to professional practice and helping others, thus enriching the development of interpersonal skills. Several studies support this aspect, highlighting the transformative role of the experience, which contributes significantly to the comprehensive training of students (Belando-Montoro et al., 2022; Gómezescobar & Simón-Medina, 2022; Ruiz-Montero et al., 2022). Finally, they are aware of the need to link the reality of society with learning at university. This reflects a critical and conscious perspective of students on the relevance of their education in the current social context (Chiva-Bartoll et al., 2020; García-Rico, et al., 2023).

The students value the *service* performed positively, highlighting their commitment to the project and their action in response to the needs of the entity where they carried out the service. However, emphasis should be placed on the competence aspects that the SL(U) methodology provides in practice. In accordance with the observations of Martínez Lozano et al. (2018), it is essential to direct their actions towards the optimisation of strategies for the development of the initiative during the sessions, the approach of procedural evaluations and the establishment of guidelines to promote good practices in the coordination of activities.

Differential studies have shown that there are no significant differences in the *age* and *course* variables in any of the dimensions of the methodology. However, it is crucial to highlight the value of adapting the methodology to different courses, either from an experiential approach in the early years (Solomon and Tan, 2021) or from a more professional and future-readiness perspective in the later years (Deeley, 2015). In addition, age is considered a relevant aspect to understand the demographic profile of students involved in SL(U) projects (Ruiz-Montero et al., 2022), as well as their engagement and level of autonomy in the application of the methodology (Pérez and Ochoa, 2017).

On the other hand, different values were found for other socio-demographic variables. Thus, some of the most relevant conclusions are the following:

- With regard to the *study* variable, students on the bachelor's degree in early childhood education show a lesser link between service and university learning, while students on the bachelor's

degree in social education express a greater disconnection in all dimensions of SL. In this context, in the *Formative* dimension, they highlight the scarce usefulness of learning and its transfer to different contexts. In terms of *Learning*, they perceive less responsibility for professional performance and personal growth. In contrast, in the *Service* dimension, low scores are observed in most of the items except those referring to the organisation, coordination and planning of tasks. However, in this group of students, there is a lower sense of commitment to the service, of recognition of their participation and a low response of the project to their expectations. This situation may be due to the numerous experiences related to teaching and pedagogy degrees, where training in the school environment is more relevant than in the social environment, leading to a mismatch between academic training and future professional practice (Blanch et al., 2020; Gómez-Hurtado et al., 2019).

- As a function of *gender*, women have higher scores in social reflection in the development of the experience and greater social sensitivity (coincident results in Lacalle & Pujol, 2019; Ruiz-Montero et al., 2022).
- In terms of *tenure*, students from private universities show a greater sense of *ownership* of the development of the service. This is reflected in a greater initiative and commitment to the activities, participating in the study of needs, the organisation of the project and coordination with other professionals. Similarly, students at privately owned universities feel that their participation is recognised and are more satisfied with their social work in response to the needs of the institution. These data are relevant due to the lack of studies that show differences between private and public universities, most of them being focused on experiences and research carried out at the same site (case studies, action research) (Blanch et al., 2020; Rodríguez-Izquierdo, 2020; Soneira, 2019; Sotelino et al., 2019).

The results obtained through the cluster analysis allow us to identify three different profiles of applicability of the SL(U) methodology, according to the students' responses. The conclusions derived from these analyses are shown below:

- **High applicability.** These are students with a high level of acquisition of the competencies involved in the SL(U) methodology in all the dimensions measured by the study: *Formative*, *Learning* and *Service*. As expressed by León-Carrascosa et al. (2020), Meijs et al. (2019) and Pérez-Pérez et al. (2019), its functionality is to generate qualities that are associated with academic competencies in connection with the formative development of the person from a learning experience while providing service to the community.
- **Medium applicability.** These are students who are aware of the *formative* value in the development of the SL(U) methodology, but with average results in specific competencies focused on *Service Learning*. This profile highlights the need to establish actions that involve an increase in reflective competence in the learning processes, generating greater initiative and coordination in response to the development of the service (Blanch et al., 2020; Chiva-Bartoll et al., 2020; Ruiz-Corbella & García-Gutiérrez, 2020).
- **Low applicability.** These are students who are concerned with the *formative* and *learning* aspects in the development of the methodology, but who are characterised by a low level in the *service* dimension. This type of student maintains a high level of commitment, sensitivity and awareness of the needs of the institution (Lalueza et al., 2016), however, there are low evaluations of formative (learning functionality), academic (communication, personal growth and evaluation) and social (coordination, teamwork and lack of recognition) competencies. On the other hand, several authors defend the SL(U) methodology as part of university education, as it allows for generating a high academic commitment in students, influencing numerous professional and personal competencies (Hervás-Torres et al., 2022).

In view of the results obtained and the conclusions outlined, it can be affirmed that the study provides valid and relevant information to the scientific community with the aim of continuing to deepen the application of the SL(U) methodology. Likewise, the study makes it possible to establish strategies and tools to improve the students' learning experience in the development of the service, taking into account the characteristics defined in the study and the competencies to be acquired by the participants. However, the study is not without its limitations,

which makes it necessary to raise a number of issues. Firstly, the reliance on a validated instrument with a small sample, even with similarities to our study, could affect the generalisability of the results. We highlight the possible predominance of the self-complacency factor in the data collected, which may influence the high responses to each of the items due to the participants' connection with the social reality, lived experience and possible bonds established during the experience. Similarly, the lack of a greater number of socio-demographic variables to be included in the questionnaire has prevented further differential studies. Nevertheless, the research carried out has the added value of having analysed both private and public institutions, as well as different degree programmes, which has enabled us to gain a broader understanding of the functioning of the SL(U) methodology, as well as to delve deeper into its application and the development of the competencies of those who participate in it. In any case, it is necessary to continue researching the possibilities of improving SL, both in the university environment and in experiences carried out at other educational levels, in order to reinforce and consolidate the methodology throughout the educational community. Likewise, within the framework of higher education, it is proposed to deepen the relationship between SL and the preparation of students for their future employment. This implies a special focus on curricular optimisation, in which strategies are investigated that favour a more effective integration of SL(U) with curricular content. The aim is to deepen transversal competencies and to carry out specific studies in various degrees, adapting SL(U) to different profiles and contexts. This would strengthen the connection with training for future employment, promoting a comprehensive higher education aligned with social demands.

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