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Music for Hospitalized Children in Service-Learning: Academic and Personal Implications for Teachers in Training

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Abstract

Service-learning methodology seeks to achieve a balance between academic learning and the application of the acquired knowledge for the benefit of the community. Our study aims to assess the academic and personal development of the students who participated in the educational experience and identify the benefits it brought to the attended children. The total of 73 participants involved: a) university students of a faculty of education, b) hospitalized children and their families, c) a healthcare worker, and d) several volunteers. We conducted a case study featuring qualitative analysis (based on discussion groups, interviews, and daily narratives), analysis of co-occurrence, and data triangulation. The categories we obtained were related to learning achieved by university students, their personal growth, and the impact of hospital service on the different agents who participated in the experience. Findings suggest that service-learning, along with the positive emotional impact of experiential music learning, was associated with student progress in teacher training and personal development.

Keywords: service-learning; music education; hospitalized children; case study, higher education

INTRODUCTION

The educational model of Service-learning (S-L) is rapidly becoming a global phenomenon. Its aspect of social engagement is grounded in concrete daily experience, responding to an increasing need for holistic learning methodologies related to current social reality and encouraging students to reflect ethically (Belando-Montoro & Sánchez-Serrano, 2017). As a teaching methodology that can be applied on a variety of educational levels, especially in preservice teachers' education (Camilli et al., 2021) and in many different learning contexts, S-L does not merely focus on the acquisition of knowledge foreseen in the study syllabus but also encourages the development of critical faculties (Chiva-Bartoll & Gil, 2018). S-L enables students to acquire future teacher competencies, such as committing themselves to the needs of their social environment, applying critical reflection while responding to real-life service situations, and reinforcing student's capacity for independent learning. Moreover, in S-L environments, beneficial reciprocity is given between their participants (Clayton et al., 2013).

In this vein, Deeley (2016) and Yorio

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and Ye (2012) outline other effects achieved by S-L projects, such as (1) enhanced sense of citizenship, (2) accelerated intellectual development, and (3) personal development, as each student has the opportunity to deepen into their own beliefs of social and ethical values.

Together with this, students acquire skills that can be transferred to their future professional context (García & Lalueza, 2019); upcoming teachers, meanwhile, achieve an enhanced perception of their teaching work prior to and after the S-L experience (Kovalev et al., 2016), as they are key in its implementation. For all these reasons, an increasing number of authors find that this learning methodology has considerable potential for improving the quality of education (Mella-Núñez et al., 2015); however, it should be pointed out that it is a highly complex process highly complex (Burton & Reynolds, 2009; Chiva-Bartoll & Gil, 2018).

According to Chiva-Bartoll et al. (2019), most benefits stemming from musical S-L activities on the higher educational level are associated with the effectiveness of learning (76.47%), the acquisition of social skills (47.06%), and changes in students' understanding of global society (17.65%). In reference to benefits for the agents who receive the service, the same authors highlight the acquisition of musical learning (29.41%), personal skills (17.65%), and social skills (17.65%). In other words, the learning achieved by all participating agents is a major advantage of S-L. In this respect, Pike (2017) evaluated the positive progress achieved by graduate pedagogy interns which provided the service as well as beneficiaries in a study where social and intellectually disadvantaged students were taught to play musical instruments: the author likewise highlighted the learning achieved by the preservice teacher-candidates who participated.

Moreover, music taught through S-L methodology can improve socio-emotional aspects relevant for future teachers and increase participants' sensitivity to social problems (Riaño et al., 2017). Moreover, the experience of a "real" learning environment can help university students understand music's potential for improving psychological and emotional growth in children (Gillanders et al., 2018).

A study by Sáez and Marín (2016) documents the satisfaction expressed by the families of schoolchildren with an S-L project that featured choral singing and traditional dance activities. The experience promoted a series of values that could serve as a bridge between school and society: effort, self-improvement, teamwork, helping others, and empathy. Similarly, in another project (Parejo et al., 2020), participating teacher candidates in the area of music education developed their social and civic competencies by improving their understanding of socio-cultural diversity and reinforcing their grasp of coeducation.

On the other hand, hospitals can provide an appropriate environment for music-based interventions: positive effects on mental and physical health can be achieved by encouraging patients to participate in interactive activities or simply by letting them enjoy music performed live on the premises (Facchini & Ruini, 2021). The findings of a Singing Medicine project in a children's hospital showed that participation in such an 'arts-in-health' initiative was associated with benefits for children who suffered from long-term conditions, as well as for their families: specifically, a reduction in negative emotions along with the achievement of enhanced well-being through distraction and the sharing of positive experiences (Blackburn, 2020).

In this vein, music is regarded as an adjunct method of pain management, as well as a good means of relieving children's stress and anxiety when they are hospitalized (Jonhson et al., 2021). There is evidence of the empowering effects of hearing and/or performing music, leading to positive effects in children in the short-stay observation unit of an emergency department (Antonelli et al., 2019). Other studies show that music-based activities help children deal with the psycho-emotional effects of chronic diseases (Montero-Ruiz

et al., 2020). As an art form that features emotional and abstract content, music can express and trigger emotional reactions (Orozco, 2013), which is highly important for future teachers. Expressing emotions through musical activities becomes important when pain and anxiety inhibit patients from expressing their emotions verbally. Occasionally, it is even possible to take a further step and boost patients' creativity, thereby providing them with satisfaction and positive feelings (Tanquerel et al., 2018). Ensuring that children who spend prolonged periods of time in the hospital are provided with opportunities to play and express themselves should be a priority for healthcare services (Blackburn, 2020).

Musical intervention can also be seen as a means of improving the well-being of family members, as the hospitalization of their children often tends to be a traumatic and stressful event for them, involving deprivation in the affective and cognitive areas. Findings from recent studies show that musical mediation can reduce the level of post-operative anxiety experienced by family members of children submitted to surgery (De Oliveira et al., 2018). Playful music activities in a pediatric hospital environment also help to distract sick children from the hardships associated with their illness while improving their degree of socialization, engagement, and involvement, their quality of learning, their confidence, as well as their relationship with their families (Issaka & Hopkins, 2017).

This paper's general purpose is to analyze the impact of the implementation of a S-L experience in the Music Education portion of a university Early Childhood Education Teacher's degree course during the 2019/20 academic year. Our specific objectives are: a) to assess the academic and personal development of the students who participated in the educational experience and b) to discover the social implications for the agents involved in relation to the provided service.

METHOD

Design

We used a case study design in which the experience of applying S-L in music education on a university level was taken as a holistic unit of analysis (Yin, 2014). This is an intrinsic case study that deals with 'the case' without claiming that it is representative, on the grounds that it has value and interest in itself (Fusch et al., 2018; Stake, 2005).

Participants

The study sample was comprised of 73 subjects: 43 future educators enrolled in public universities in Madrid, 20 children interned in public hospitals in Madrid, six families, one healthcare worker, and three healthcare volunteers. The 43 students (90.7% female) had an average age of 18.91 (range: 18: 19-23, DT=0.95): 34.6% of them had previously been involved in some form of volunteer work (in associations for the disabled, NGOs, community kitchens, residential care facilities for the elderly, and food banks, as well as in activities related to children and sport); 48.8% of the students had prior knowledge of S-L, mainly acquired at university, although 93% of them had not previously participated in such experiences. Only 25.6% had engaged in previous musical studies through formal or informal learning. Around 20 hospitalized children and six families took part, thereby accounting for ca. 30% of the families of all the hospitalized children in the sample. The informed consent process was applied, and APA ethical standards concerning the treatment of human subjects were fulfilled.

Data Collection and Analysis

Our data collection techniques were personal narratives, discussion groups, and semi-structured interviews, which are frequently used in S-L studies (Camilli et al., 2018). The university students wrote personal narratives on a weekly basis throughout the semester, reflecting on their degree of involvement and implication in their learning of the subject and the

service they performed. We analyzed 80 narratives in total.

We also organized two discussion group rounds: one prior to the service and one thereafter. The five informants in these two discussion sessions were selected according to pre-established criteria to form a heterogeneous group. The script focused on three key themes: 1) the training they received in the course, 2) social and cross-cutting skills related to the subject, and 3) the social impact generated before and after the implementation of the proposal. The discussion group organized after the service focused particularly on the third theme. The semi-structured interviews were conducted with families, hospital staff, and hospital volunteers, who were asked questions regarding 1) the importance and benefits of the experience, 2) the training of future educators for initiatives of this type, and 3) eventual forms of cooperation between universities and hospitals.

In the qualitative phase, we examined the students' personal narratives, discussion groups, and semi-structured interviews by applying an inductive analysis that established links and associations among the data to find identical or similar patterns of meaning (Creswell & Plano, 2017). As this is a case study, we applied categorical aggregation and direct interpretation (Stake, 2005). Emerging categories were subjected to inter-rater evaluation among the four investigators of the study, achieving an 87.5% match. We also obtained a co-occurrence coefficient based on content analysis (Lund et al., 1995), and we quantitatively analyzed the final categories with their respective codes (frequencies and percentages). All qualitative analyses were carried out using the Atlas.ti software.

In the quantitative phase, we applied contingency analysis using Cramer's V measure, which works with nominal variables: this is the same type of analysis carried out in other studies such as Ricoy and Sánchez-Martínez (2020). The V value ranges from 0 to 1, whereby 0 indicates a total lack of association between two variables, and 1 is a perfect match. Values above .80 indicate a very strong association, between .60 and .80 a strong association, between .40 and .60 relatively strong, between .20 and .40 moderate, between .10 and .20 weak, and below .10 negligible (Rea & Parker, 1992). All quantitative analyses were conducted with STATA version 13.1.

Following the indications of Stake (2005) and Yin (2014), we conducted a triangulation of sources (personal narratives, interviews, and focus groups) designed to improve the credibility of results (Fusch et al., 2018) and obtain a more complete understanding of the role of S-L in university musical education. A variety of strategies ensure that this study complies with the quality criteria for educational research proposed by Lincoln and Guba (2000), such as credibility, transferability, dependability, and confirmability.

Procedure

During four months of the 2019/20 academic year, we applied the S-L methodology in the course entitled "Development of Musical Expression" featured in the third year of the studies toward a university degree in Early Childhood Education at a public university in Madrid, as part of an innovation project. We scheduled a service in a children's hospital (Madrid) with the collaboration of the NGO "Música en Vena" ("Music in the Vein"). The project's main goal was to develop civic skills and a spirit of initiative among university students while improving the quality of learning by increasing their motivation. The teacher acted as a guide, and the students participated actively in the entire process, including identifying the sick children's needs, resolving problems using a multi-perspective approach, and a continual, guided critical reflection on the experience as it progressed. Our methodology was experiential and skill-based, while the academic contents were related to the reality of the hospital, supported by ongoing reflective practice. With the goal of preparing the students for their professional lives as part of society, our process

aimed to achieve a significant cooperative learning experience through S-L.

Throughout the course, small groups of six students were formed to work on creating musical stories as well as composing songs and rap numbers for children, all related to the Spanish musical heritage, in particular, to Spanish composer Manuel de Falla. For example, the musician's biography was sung as a story, and rhythms and harmonies from Fallas' works and themes and characters from his theater works were used. Once the activities had been prepared and rehearsed, each small group performed them in the hospital by interacting with the children. As supporting elements for their performance, the course students created appropriate choreographies, dramatizations, stage designs with pictures of Falla, and costumes inspired in his theater works. They also built instruments and crafted pictograms and cards to be handed out as gifts to the children. Hospitalized children interacted to the best of their ability, following the rhythm with movements, playing the instruments, and singing.

In this way, each student had the opportunity to meet their individual goals while participating in common goals, to have the experience of proving themselves responsible by making a fair contribution to the overall group endeavor, to make an effort to maintain positive interpersonal relations, and to analyze the results *a posteriori*. Students wrote down their analyses and reflections in their class notebooks (personal narratives).

RESULT AND DISCUSSION

Qualitative Analysis: Emergent Categories

Qualitative analysis yielded a total of nine categories confirmed by 88 codes and 1,584 quotes (Table 1). Most codes were associated with the following categories: impact on the area of emotions (23.86%), impact on musical knowledge (20.45%), and impact on S-L methodology (19.32%).

Textual quotes are identified accor-

ding to the technique we used and the actors involved for ease of reading. Specifically: PSN = personal student narrative; SDG=student discussion group; FI = semi-structured family interview; HSI= semi-structured health staff interview and VI= semi-structured volunteer interview.

The categories are presented below.

S-L Methodology. S-L is much more than an activity or a volunteer program: in S-L, the education of participating students is actually the main goal. In our case, the service we provided was associated with a course in the subject of music ("*This activity has been very important for our future as teachers, since at some moment or other we will need to feature a song with a dance in order to teach it to the youngest ones*" [PSN]). The service we provided required a considerable amount of preparation and an active methodology ("*Moreover, the class is less monotonous; it becomes creative and much more fun*" [PSN]). It featured a strong connection between theory (curricular content) and practice ("*During this session we have dealt with some of the most important concepts in the school subject of music*" [PSN]).

S-L is a methodology unknown to some ("*The teacher has explained that we're going to have a service-learning project during the course. I didn't know what that is, but she has explained that it is a methodology through which we not only develop curricular content, but also social competencies and values*" [PSN]). Although it has its own set of difficulties, particularly the time required for planning and putting it into practice, it is still thoroughly interesting ("*I have found the configuration and presentation of the course quite interesting*" [PSN]), because it emphasizes organization in workgroups ("*Organizing our groups to enact the story, we have focused on the service we will provide to the hospital. I'm sure we're going to do it very well. Still, we all have to put in some work if we want to achieve a good final result*" [PSN]).

S-L becomes a way of helping others: it benefits the students who participate in the activity as well as those toward whom the service is directed ("*At the hospital, we're going to help the children feel positive*

Table 1. Emergent categories from qualitative analysis

Categories		Codes		Quotes	
		n	%	n	%
	S-L methodology	service, music subject, challenge, active methodology, organizing in groups, theory-practice connection, helping others, benefits, preparation, unfamiliar methodology, difficulties, interesting, experts, suggestions for future projects, experience, putting into practice, activity	17	19.32	355	22.41
	Musical knowledge	melody, rhythm, interpretation, creation, songs, Manuel de Falla, music, complications, expression, instruments, performance, movements, choreograhies, coordination, creativity, dance, accompaniment, instrumental, rap	18	20.45	382	24.12
	Social	group cohesion, working in groups, difficulties, communication, spirit of initiative, society, citizenship, community	8	9.09	67	4.23
	Cognitive	thinking, reflecting, time management, reasoning	4	4.55	62	3.91
Impact	Emotional	enjoyment, empathy, engagement, self-esteem, effort, meaning of life, involvement, implication, commitment, managing frustration, anxiety, stress, critical thinking, memories, pride, gratefulness, happiness, trust, fear, shame, interest, motivation, feeling inspired	21	23.86	274	17.30
	Development of competencies	competencies associated with ECE curriculum, competencies associated with the university degree (general competencies, specific competencies, transversal competencies), professional competencies	8	9.09	186	11.74
	Teaching	teacher's role, faculty, university	3	3.41	31	1.96
The service beneficiaries		familiarization with the hospital environment, generosity, involvement	3	3.41	91	5.74
Evaluation of the service-learning project		level of satisfaction, self-evaluation, co-evaluation, improvement, valuing, importance	6	6.82	136	8.59
Total			88	100	1584	100

emotions"; "It's incredible to see to what degree music can help people"; "We can help them forget their illness for a while" [both from SDG]). S-L represents an academic challenge that requires a considerable learning effort on the part of young university students who are in initial training ("We can help others while using the knowledge we have acquired" [PSN]). The learning experience as such is also acknowledged by the families of the hospitalized children ("I can imagine that it's also interesting for the students when they're training, since they learn how to reach out to the children and communicate with them" [FI]).

The students positively evaluated

that music experts were invited to the course, as this allowed them to broaden their musical knowledge; moreover, the project provided them with deeper insight into what goes on in hospitals, and even led them to think back on their personal life story. As suggestions for future projects, the course students proposed that S-L could be applied in the hospital classroom combined with other subjects included in the syllabus of other educational levels. (*"For instance, in history* [as a subject in primary school] *we might be able to work in a hospital with the children who are interned as patients there: since there are parts of their class content they can't study while they're in hospital, you can take it to them as a dramatization, or as a game, or something like that, so that they learn that portion, too"* [SDG]) or in other pedagogical university courses (*"I want to recommend that you carry out such projects with other students so that they can have the same kind of experience"* [PSN]), putting S-L into practice in a multitude of different environments, such as student residences (*"The older students can help the younger ones, who can thus carry out the activities without any problem"* [PSN]).

Music Knowledge: Implications. The students learned the didactic implications of melody and rhythm, practiced instrumental accompaniment, developed songwriting creativity, and learned how to interpret various musical repertoires. By dealing with the music of Manuel de Falla, the students were able to grasp the complexity of musical language and how its contents are interrelated. The students positively highlighted the act of playing each instrument, the act of representation through choreographic movement, and the necessary body coordination in dance, particularly in rap. When students acquire musical knowledge, they are able to project themselves into their role as future teachers.

S-L and its Impact on Social Coexistence. Collaboration among peers was another important learning experience for the students who participated in this project. Working in small groups led to good cohesion in the entire class. Students affirm this in comments such as the following: *"In dealing with such subjects as trying to become better people* [referring to S-L], *we have a pretty good atmosphere of solidarity in the class"* (PSN); *"Today we had our dress rehearsal for all the repertoire we'll be taking to the hospital. We were very excited, and we have worked together well in groups. We all felt connected by feeling the thrilled anticipation that we're going to perform in front of the children, and by the idea that we're going to help them with our compositions"* (PSN); *"Knowing this* [referring to the importance of the service provided] *has motivated us a great deal, and we have good rapport among colleagues; you can sense that we all want the performance to go really well"* (PSN). Nevertheless, group collaboration is not exempt from difficulties, some of which are associated with the problem of finding the right moment to work together: *"To prepare and rehearse the story, we need extra hours apart from those we have in music sessions, and it's hard for us to agree upon a time slot to meet on the same day"* (PSN). Other difficulties lie in maintaining good communication or reaching joint agreements. *"Besides, when we want to start working together on a certain proposition, it is difficult for all the members of the group to reach an agreement as each person has a different opinion"* (PSN). Certain participants nevertheless point out that such a diversity of viewpoints ultimately enriches the performance project: *"It's positive to note that since there are many points of view, this enriches our collaboration since not everyone comes up with the same ideas, and some of them can be brilliant"* (PSN).

The non-profit organization "Music in the Vein" (*Música en Vena*) aims to use culture and music to improve prolonged stays at hospitals for patients, families, and health staff. The university students' encounter with this project sparked their sense of social initiative; they felt a greater commitment and responsibility for society, which, in turn, re-energized their concept of citizenship and community: *"I've truly realized that we can improve everything that has to do with being more responsible and com-*

mitted people for the society in which we live" (PSN).

S-L and its Impact on Cognition. The S-L experience leads students to reflect upon their concrete practice continually. *"Today's practical session made me reflect that the songs need an instrumental accompaniment, which can be quite simple, playing several notes and playing around with the tune and the lyrics"* (PSN). It also leads to more critical, reasoned thinking: *"I liked this a lot; I had never stopped to think that we could acquire further competencies that are less related to curricular content and more with our own personal development"* (PSN). Students likewise improve in the way they manage their time schedule. *"I would generally say that we're on the right path; our efforts and the time we put into this will lead to a good result"* (PSN).

S-L and its Impact on Emotions. Music *"draws people together and cheers the heart;"* it accompanies people in difficult moments of their lives. *"Music has helped me in my worst moments; it has helped me relax when I was nervous or when I was particularly sad"* (PSN).

The shared experience provided a welcome occasion for enjoyment. *"This initiative to help the children find some distraction is really good, really cool. And it's true: they have fun, particularly with the music. They love it, especially getting to see the students perform live, which is even better"* (FI). It also led to a greater deal of commitment on the part of the students: *"We decided to do our best for the performance to turn out as well as possible"* (PSN); *"I hope I don't let the group down. I want everything to turn out perfect"* (PSN). There was empathy among the classmates, but they also valued empathy when they imagined themselves in their future role as teachers: *"In this way, we can educate the children in values such as empathy and solidarity, taking them to activities in which they will have to help those who are most in need"* (PSN).

They acknowledge the effort and commitment involved in this type of initiative. *"The effort has been substantial; the work we put in hour after hour for many days has been taxing, and we've constantly been 'on the edge of our seats' until the last moment"* (PSN). The students affirm that the service increases their self-esteem. *"This rehearsal turned out pretty well, and our self-esteem increased considerably"* (PSN). It also improves their self-assurance: *"Self-confidence is something you can later apply during your university training to situations of public exposure, for example: it's like when we're playing music there in hospital, we're also working in a certain sense: you learn to face an audience and not to worry if you make a mistake. You learn to control your nerves and all that"* (PSN). It leads them to reflect upon the meaning of life.

Learning to deal with frustration, anxiety, or stress is also part of life. A feeling of pride, gratitude, and a state of personal contentment were part of the emotional mark left by this experience.

S-L and the Development of Competencies. S-L worked in favor of the development of general competencies, such as understanding the biological and psychological evolution of 0-to-6-year-old children, as well as specific competencies, such as knowing how to recognize and evaluate the use of non-verbal language associated with music. Some of the transversal competencies acquired by the students were the following: 1) becoming familiarized with the social and educational dimension of interaction among peers and knowing how to encourage participation in collective activities and cooperative work while applying individual responsibility; 2) promoting educational activities that foster the kind of values that prepare students for the exercise of active, democratic citizenship; 3) valuing the importance of leadership, initiative, creativity, and innovation in the professional world; 4) acquiring a capacity for independent work, finding good methods of collective organization, and promoting independent learning.

The students involved in the project learned more about the main stages of musical development in infancy; they used their auditory, vocal, and body language

capacities to acquire the necessary techniques they could subsequently put into practice in performance. They also learned the correct use of basic musical language for didactic adaptation purposes, and they learned to ascertain which are the most appropriate musical instruments for Early Childhood Education. The students highlight the fact that the competencies they need to develop for the service are related to ECE curriculum content.

S-L and its Impact on Teaching. The students regard the teaching-learning process as the transmission of knowledge on a subject that plays a role in their training to become future teachers. Those who receive the service feel similarly: *"It's fascinating when they teach you something, and you can then teach it to someone else who, at the same time, teaches you something in return"* (PSN).

The students also favorably valued the professor's role in the experience, and they highlighted the positive role of the advice, follow-up, and feedback with which they were provided in each one of the tasks. For instance, referring to the course professor, one of them stated: *"I principally value the importance she has given to our interaction with the children"* (PSN). They acknowledge the effort and the challenge it represents for university professors to implement the S-L methodology: *"I would like to thank the professor […], for the patience she has shown with us for many days, especially since sometimes it was impossible to achieve silence in the class"* (PSN). Furthermore, S-L transcended the classroom context and enabled the students to achieve a greater sense of identity and belonging within the education faculty and the university.

Beneficiaries of the Service. Each one of the agents involved in the experience noted not only the personal benefits achieved by their own actions, but also those achieved in favor of others. Family members of the hospitalized children acknowledged that student participation brought the families closer to the hospital environment: *"It's important that people from outside the hospital share a moment with us by involving themselves since this is a totally different envi-ronment from what they are used to"* (FI). S-L encourages the development of qualities such as generosity. *"It is a way of applying the generosity the students have; in the end you also learn, and when they share it by presenting it, I think it's good for them, too"* (FI). S-L gives rise to a series of interactions: *"Well, they learn to share something with the children: they see how the children evolve and deal with the situation. In other words, dealing with the children is a good learning experience, particularly dealing with those who are in hospital, as they are here. This way,* [the students] *begin to get to know different types of children, and what they are like"* (FI).

Regarding potential benefits for their children, the parents found that the service helped the children enjoy a moment of evasion from their daily routine, providing them insight into musical culture. The students, for their part, noted that staff who work with people with illnesses show a profound commitment, and the staff thanked them for their participation and involvement in the project. "When we arrived at the hospital, the nurses gave us a warm welcome" (PSN); "I want to highlight something one of the nurses said to us: she thanked us for our work. But the ones who were most grateful at that moment were we, ourselves, for being able to participate in that project and bring music to hospitals to make the children happy" (SDG). The mother of a boy with functional diversity also said something that caused the young students to reflect: "Besides, a family with whom we were talking suggested that in the classroom we should focus more on children with functional diversity" (FI).

The health staff valued the experience as an exchange, and a window of opportunity to raise awareness of the work carried out with children in the hospital. Hospital volunteers highlighted the musical knowledge acquired by the hospitalized children: for these volunteers, the experience was also a training opportunity since they are not experts in education. *"I would say that my evaluation is positive: I particularly see the positive aspect in what they teach. It's not a mere spectacle that doesn't add*

anything for the children. Today, for instance, they will have learned who Manuel de Falla was; perhaps when they went into hospital, they didn't know who he was. That's the positive aspect I see, apart from the fact that they are entertained, they learn, and they have fun" (VI).

Evaluation of the S-L Experience. The students are also constructively critical of their classmates (co-evaluation), acknowledging the strengths of the project they all worked on together. *"On the one hand, I just want to say that I have loved my classmates' performance. I think their work and effort have been tremendous, and it's reflected in the results"* (PSN). They also have suggestions for improvement: *"Each group's stories are well thought-out. We're nevertheless all well aware that there's room for improvement"* (PSN).

Ultimately, the students evaluated the experience as satisfactory. One of them referred to the visit at hospital with the performance in the following terms: *"As far as my level of satisfaction, enjoyment, and personal contentment is concerned, this has been one of the most useful days I have ever experienced in the course of my studies"* (PSN). Several of them highlighted the importance of S-L in their initial training: *"I find this very good because at university, we don't think about those things* [referring to service and those who receive it], *but in the end they're important for our future profession as teachers, and in helping ourselves to become better people"* (PSN).

Qualitative Analysis: Analysis of Co-Occurrence

The 88 codes that made up the nine categories of the study were subjected to a co-occurrence analysis through the Atlas.ti program. The process segmented the text into three educational and social aspects related to our research goals: (1) *learning in the university classroom* achieved by the students; (2) the *personal* development of these students, affecting their personal lives; and (3) the *hospital service*, covering the point of view of the different agents who participated in the service scenario.

Quantitative Analysis: Data Triangulation

With the information obtained from data co-occurrence, we estimated Cramer's *V* in order to obtain the degree of association between the suggested aspects, thereby determining and completing the strong and weak points of the qualitative and quantitative analysis. We analyzed the codes and grouped them into the categories as explained above. Table 2 compares the values grouped by those categories. Significant associations were found in the values of 3 out of 4 of the categories that emerged from the qualitative analysis (impact were gathered in a total category): lower percentages in Service-Learning methodology for the *learning in the university* group, higher percentage of co-occurrence for this group in the total impact; and higher percentage for the *hospital* service group in service beneficiaries; with no statistically significant associations for *evaluation*. For specific categories of impact, there were statistically significant associations for social impact ($p<.001$) and trends to significance for cognitive ($p=.08$) and development of competencies ($p=.07$) (Tabla 2). The number of quotes is reasonably lower for co-occurrences than for those that emerged from qualitative analyses.

Discussion

We conducted this study to assess the design and effects of S-L methodology on the preservice training of general teachers who are going to impart educational and musical content in the classroom. Regarding S-L methodology, the following aspects need to be taken into account. Although the S-L methodology was unknown to most of the participating students, it revealed itself as ideal for the improvement of all kinds of *learning*. Processed through continual critical reflection, these experiences may have aided in transforming the students' vision of surrounding society, activating their *spirit of initiative* through their desire to participate actively in the hospital service. The students' expressions

Table 2. Comparison of co-occurrence of the emerging categories between different education-al/ social aspects.

Category	1	2	3	V	Chi2 (*p*)
N	250	181	90	---	---
S-L methodology	22 (8.8)	41 (22.7)	8 (8.9)	.19	**19.2 (<.001)**
Impact (total)	174 (69.6)	102 (56.4)	58 (64.4)	.12	**8.0 (.018)**
Musical knowledge	43 (17.2)	27 (14.9)	17 (18.9)	.04	0.8 (.681)
Social	43 (17.2)	5 (2.8)	4 (4.4)	.23	28.1 (<.001)
Cognitive	7.5 (3.0)	10.5 (5.8)	0.5 (0.01)[1]	.10	5.2 (.074)
Emotional	67 (26.8)	57 (31.5)	30 (33.3)	.06	1.9 (.396)
Development of competencies	13 (5.2)	2 (1.1)	3 (3.3)	.10	5.3 (.071)
Teaching	1 (0.4)	1 (0.6)	1 (1.1)	.03	0.6 (.746)
The service beneficiaries	22 (8.8)	11 (6.1)	16 (17.8)	.14	**9.9 (.007)**
Evaluation of the S-L project	36 (14.4)	28 (15.5)	10 (11.1)	.04	1.0 (.621)

Note: 1=Classroom Learning; 2=Personal Development; 3=Hospital Service. Values between brackets are percentages of quotes for each category.
[1]A constant value was added in each cell as recommended by Goodman (1970) for avoid problems with empty cells in estimating chi-squared.

of gratitude for participating and sharing their learning seem to well reflect the effectiveness of S-L in activating processes of reflection and transformation. These could form the basis for a commitment to social transformation in the future, thereby corroborating results obtained in previous studies in this field (García & Lalueza, 2019; Larsen, 2017).

Concerning the Impact on Musical Understanding category, the students reported good learning quality in acquiring *knowledge* and in their application of the service. In support of this idea, Larsen (2017) also related such improvement to the development of self-management of time and effort, autonomous planning, and self-assessment of the effort itself. Codes such as *thinking* and *time management* associated with cognitive processes appear frequently in our study's quotes. The preparation of the service and its assessment have shown how the learning of skills related to the university course tend to develop, along with their relationship with the Early Child Education curriculum, including professional skills achieved thanks to a *spirit of initiative* by incorporating the students into work environments and encouraging them in their role as active citi-

zens (Mayor & Rodríguez, 2016). In addition, the high level of frequency of codes such as *group work* and *group cohesion* (56%) reflect this methodology's experiential and socializing nature through the acquisition of skills, above all in classroom learning, with a significant co-occurrence in the Social Impact category.

The results of our data analysis suggest that attention should be paid to a series of educational, personal and social aspects. In the results in the Emotional Impact category, statistically significant differences can be observed in certain inherent characteristics of S-L, such as connection to social reality and reflection encouraged by emotional processes and positive feelings, all of which is in line with previous studies (McKay-Jackson, 2014). Frequent references to *effort*, *enjoyment* and *gratitude* are notable on the part of the students and their families. In addition to these positive perceptions, one can also note the prominence of the *generosity* code in relation to hospitalized children and their families.

Swarbrick et al. (2019) explain that the emotional awareness provided by music is particularly strong if the musical activities are experienced live and as a group, as was the case in this study. In

addition, the artistic nature of the subject taught in the course can foster listener involvement, while musical expressiveness can improve connections with emotional responses and vice versa (Juslin, 2019). In this respect, Cespedes-Guevara and Eerola (2018) suggest the existence of a shared acoustical-musical code for expressing basic emotions. Moreover, the students affirmed that the service experience increased their self-esteem and self-confidence, coinciding with the results of the study by Tanquerel et al. (2018): the experience made them reflect about the meaning of life, one of the essential aspects of their personal development. On the other hand, for Personal Development with respect to the preparation of the activity, in particular, the *handling of frustration, nerves,* and *stress was a relevant aspect,* which, in turn, can reflect the project's degree of importance for the students. Students showed greater engagement and group effort, which is in line with the indications of Clayton et al. (2013), referring to the development of autonomy and responsibility for the students' learning experience motivated by S-L. In the same vein as the study carried out by García and Lalueza (2019) on the subject of S-L, our study's results show that the students acknowledge this methodology's capacity for training competencies: in a specific, real-life context, curricular content can be applied via an appropriate realization of activities combined with effective problem-solving.

Moreover, the process of training competencies (such as music performance and the adaptation of educational activities to the evolutionary process of biological and psychological growth in children ages 0-6) can be associated with the development of professional abilities in these teacher candidates. In this sense, Kovalev et al. (2016) indicate the need to develop professional competencies in preservice teachers, such as creative, communicative, social, and personal abilities. The same authors argue that professional competencies in future teachers are determined by the involvement of creative educators,

capable of exerting a progressive influence on the spiritual renewal of society, human development, maintaining cultural traditions, and producing innovative ideas (p. 4181). These contributions are in line with the aims of the project presented herein, as it is based on the idea that ethical and civic competencies cannot be ignored nowadays in the integral education of the individual (Delano-Oriaran et al., 2015; Hébert & Hauf, 2015).

Regarding the impact of S-L on teaching, the role and commitment of the professor is key in this type of methodology, as it requires a rigorous prior organization of the process, including holistic aspects that lie beyond the usual academic curriculum (Rodríguez-Izquierdo, 2018). The professors involved in this project felt called to be part of a personalized teaching process, in which they made a conscious decision to engage in innovative educational strategies and assume the risks involved. Their commitment was to try to break away from traditional methodology and address the students' global educational needs while providing a service to the community. Moreover, the social impact of S-L is relevant and tangible, as can be seen in the results. What is learned does not remain in the classroom but can provide benefits for society (Burton & Reynolds, 2009). The students involved in this project noted the emergence of group cohesion in the classroom as the project progressed; they reflected about problem-solving when faced with challenging tasks or difficulties in communicating among themselves. In those cases, students strived to reach joint agreements, which has not always been easy. They also tackled such difficulties by stating that the group's diversity was an enriching social factor that could work in favor of productive collaboration.

Results obtained in previous studies also show the students' high Personal Growth score (Andrés-Romero et al., 2018). By getting to know the hospital environment, our university students felt encouraged to increase their degree of commitment and social responsibility. In

line with former studies, it seems that S-L projects such as this one can provide students with an enhanced understanding of the needs and problems of the community where they live (Essa-Hadad et al., 2015).

As part of this process, the professor sought to assume the role of a guide for the students in their search for knowledge, their understanding of problem-solving, and their decision-making. This perspective is addressed by Deeley (2016), who regards S-L as a critically oriented pedagogy that fosters agency and empowers students to explore diverse possibilities on their own terms under guidance provided by the teacher. Apart from this, the professor served as a mediator in the reciprocal flow of learning, as the recipients of the service perceived improvements and had a learning experience during the service. At the same time, those same recipients promoted a novel learning experience for the students who carried out the service. Benefits achieved in other S-L experiences make reference to this reciprocity: the benefit is indeed for all participants (Harwood & Radoff, 2009; Santos et al., 2018).

In this way, the university collective (teachers and students) achieved a sense of belonging to a project of active citizenship in which a connection between learning and social reality was being sought. The S-L approach reinforced their sense of gratitude and belonging to that collective. Experiences of this type enable participants to become much better acquainted with the real-life contexts and the true needs of service beneficiaries. This could not be achieved in the classroom alone, particularly in the case of initiatives like this one, which involves hospitalized children. This encourages a certain reciprocity between learning goals and service goals: the project benefits those who carry out the service and those who receive it (Ochoa & Pérez, 2019). The learning experience is therefore achieved in both directions.

At the same time, taking the beneficiaries of S-L into account allows for a more holistic and realistic evaluation of the project (Puig et al., 2006), thereby opening up the possibility of developing future programs in which such benefits can be truly increased. In the present study we took family testimonials into account, since the children's families were the actors most implied in the children's overall development. Aramburuzabala and García (2013) point out that the need for the service should also be acknowledged as an aspect that should play a determining role in its effective evaluation.

In the Evaluation category in reference to *co-evaluation*, the qualitative results highlight peer assessments of competency acquisition, referring to both academic and service learning (social and civic competencies). Deeley (2016) underscores the importance of summative co-assessment for the facilitation of a democratic approach to learning that helps students master and articulate skills that are transferable to the workplace. In the same vein, Folgueiras (2019) stresses the importance of developing participatory and self-managed assessment models with the purpose of enhancing students' control over their own learning and motivation. The students' perception of evaluation changed from regarding evaluation as a concern to understanding it as a support for learning. This change in their perception requires a change in the attitude of teachers towards evaluation: from presenting knowledge to promoting dialogue, from playing the role of 'experts' to understanding themselves as 'facilitators,' thereby encouraging students to develop the necessary skills to evaluate their own work (Sicherl et al., 2017). The instruments we used for evaluation thus addressed the diverse aspects of intervention and learning. There is no unity in S-L previous research on the method to be used to evaluate the experiences, even though S-L methodology requires a qualitative approach to ensure that researchers understand the complex social phenomena involved therein, although an incipient interest in the use of mixed research designs can be noted (Camilli et al., 2021). Our study was qualitative in nature, but our data analysis was complemented

by a quantitative phase, which helped clarify our results.

CONCLUSIONS

It has been possible to solve purpose of this study: a) Students think that they have increased their academic development (p. e. development of self-management of time and effort, autonomous planning, and self-assessment of the effort itself, skills related to the university course and the Early Child Education curriculum, including professional skills) and social development (p. e through their desire to participate actively in the hospital service). Also, b) social implications for the agents involved have manifested as the emergence of group cohesion or sense of gratitude and belonging to that collective).

According to results, this type of S-L experience has displayed the organizational capacity to involve all agents concerned, so university faculty members seem to have transmitted content or skills that enable the students to complete a course or a university degree, and more importantly, they are involved in educating students for life. This, in turn, transforms students' perception of their personal identity and encourages them to exercise active citizenship. Social assistance outside the classroom is perceived as a positive act of generosity by the students, and leads to gratitude on the part of the beneficiaries in the hospital environment.

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