University Service-Learning in physical activity, physical education, and sport settings: a systematic review

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Abstract

Service-Learning seems to be a very useful methodology in University Grades where students must develop competences to intervene in different contexts where they will be able to perform their professional activity such as those related with physical activity. The aim of this research is to conduct a systematic review of the evidence about the effects that university Service-Learning programs in Physical Activity, Physical Education and Sport settings have on the different agents involved. A systematic review was carried out by searching three databases: Web of Science, ERIC, and SportDiscus. We found 284 articles, but after the exclusion process, we ended up with 25. Studies have shown that implementing Service-Learning proposals have a positive impact on curricular, social, cultural, and civic competences, professional development, personal identity, and feelings. Only four researches address the impact on the recipients, showing different results depending on the program implemented. Just one study assesses the own program showing good results. University Service-Learning in these contexts has shown numerous benefits for students on the academic, social, and work levels; and for the recipients, it helps them make the most of the benefits of practicing physical activity, improving their health and motor functions.

Keywords

Service-learning – University – Physical activity – Physical education – Sport.

Educ. Pesqui., São Paulo, v. 47, e237446, 2021.

1

Introduction

University education must be capable of providing an answer to the formative needs of the future professionals of Physical Activity (PA), Sport, and Physical Education (PE). This education must provide concrete knowledge about this field of study such as healthy habits, physical fitness, body expression, sports and games as well as the competences required to intervene in the different contexts where they will be able to develop their professional activity (SIEDENTOP, 2002). By the time their education is completed, students must be able to program, implement, and assess specific proposals of PA. Furthermore, this education must help them adapt to different environments, e.g., sports, educational, leisure, and health, and enable them to fulfill the specific aims that need to be developed in each one. This education also needs to work to accommodate the current challenges and social needs, developing high quality PA practices for different groups: children, adolescents, adults, people with disabilities, people at risk of social exclusion, women's groups, the elderly, etc.

In order to do this, from their initial education different methodological strategies are sought to cover the largest part of this diversity of formative necessity, to enable them to obtain a profound and lasting learning. Among these methodologies, Service-Learning (SL) has had a strong impetus during the last few years (LOUGH, 2018). Service learning's theoretical and practical foundation stems from experiential education and constructivism, framing SL as the opportunity for students to apply the knowledge that they have learned in the classroom within community contexts both for community engagement and experiential learning (FURCO; NORVELL, 2019). SL in a university context is defined as "integrating academic material, relevant community-based service activities, and critical reflection in a reciprocal partnership that engages students, faculty/staff, and community members to achieve academic, civic, and personal learning objectives as well as to achieve public purposes" (BRINGLE; CLAYTON, 2012, p. 105).

In the university context its use is becoming more widespread as it has been shown to be beneficial for the students. Generally, the benefits of SL can be grouped into six different categories: (a) academic development (the typical learning of the field of study, grades, cognitive abilities); (b) social competences (interpersonal skills, social relationships, leadership); (c) cultural and civic competences (an understanding of the diversity of ethnic and other groups, the transformation of ideas and beliefs, and the importance of social responsibility); (d) personal development (self-esteem, self-recognition, motivation, empowerment, self-efficacy); (e) a professional perspective (confirming the choices made or opening new professional ways); and (f) ethical considerations (GARDNER; EMORY, 2018; HÉBERT; HAUF, 2015; WALKER, 2020).

The other aspect that characterizes SL is the service provided to the community in the context of disadvantage or vulnerability. SL projects must be designed for a specific need identified in the community which otherwise would not be covered. After running the projects, both the accomplishment of these goals and the impact of the program on the receivers must be assessed (TRYON; STOECKER, 2008). With regard to the organizations, research has shown benefits in relation to cultural exchange, economic advantages, and

the transfer of knowledge and productivity (HARRINGTON, 2014). Regarding the direct receivers, the changes and improvements are as diverse as the service received.

After considering the importance of this methodology, this research has sought to systematically revise the existing evidence about the effect that implementing SL proposals in the context of PA, PE and Sport has had on the different agents involved.

Methods

Selection of literature

In November 2018, a literature review was run on three databases: the Web of Science, Sportdiscus, and the ERIC, from 2008 through 2018. The databases were selected because they are determined as repositories of quality research. Furthermore, ERIC is one of the most important educational research databases. The main search terms were 'service-learning' AND ('physical activity' OR 'physical education' OR 'sport'). Table 1 shows the number of articles found on the database searches. To verify the reliability of the results obtained, an initial search was carried out and 15 days later it was repeated using the same terms. This procedure corroborated that the same search results were found. This study follows the ethical considerations of the APA guidelines.

Table 1- Terms used in the search

Database	Search terms	N
Web of Science	Service-Learning + physical activity	44
	Service-Learning + phsycal education	46
	Service-Learning + sport	20
ERIC+Sportdiscus	Service-Learning + physical activity	39
	Service-Learning + phsycal education	85
	Service-Learning + sport	50
	Total	284

Source: Author.

Inclusion criteria

A set of inclusion criteria was established to select papers for this systematic review. Every piece of research had to meet the following criteria:

(a) Language criterion: the article must have been published in English or Spanish.
(b) Intervention criterion: that the Service-Learning proposals were conducted with university students through PA interventions, where the students had to design and intervene through directing games, tasks, or PA sessions.

(c) Participant criterion: the research had to include university students taking degrees related to PA and Sport, PE or Education.

(d) Research criterion: the research had to include either a cross-sectional or longitudinal design for the research.

To extract information, a table with studies' data was used. All the information can be found in Table 2. Such table includes details of the author, the year, the country, the recipients of the service, the duration of the SL project (in weeks and hours in order to determine for how long it was implemented), the methodology used, the instruments employed in the research, the origin of the information included in the research, i.e., the participants, which aspect of SL had been researched, i.e., learning, service, learning + service, and finally, the main results. These elements were chosen because of their importance in SL projects. The service's receptors show on which population the interventions in PA and sport had been carried out, and those that had not covered; the duration of the SL project is directly related to the university students' learning and the possible service results; the methodology together with the instruments used will indicate which were the most widely used in this research and what useful innovations could be made in this area; elucidating where the information of the research had been collected from will help us to ascertain whether the perspective of all the agents involved had been taken into account, or if it was limited to partial information; which aspects of the SL had been researched will help us to ascertain whether only a part of the project, or the project in its entirety was valued (usually, the learning of university students); finally, the results will indicate the main conclusions associated with the impact that SL had on the different aspects researched.

Results

Search results

Figure 1 displays the process used to select the articles included in the systematic review. The initial search found 284 entries. After a first review, 110 duplicate researches were removed, and the 174 remaining articles were analyzed based on their abstracts and titles. After this analysis, 89 researches were eliminated because they were irrelevant to the topic. The remaining 85 articles were assessed by examining the full text, which resulted in the elimination of 60 articles that did not meet some of the inclusion criteria. Finally, 25 articles were deemed relevant to the investigation and were included in the systematic review. All the information can be found on Table 2.

Figure 1- Papers selection process
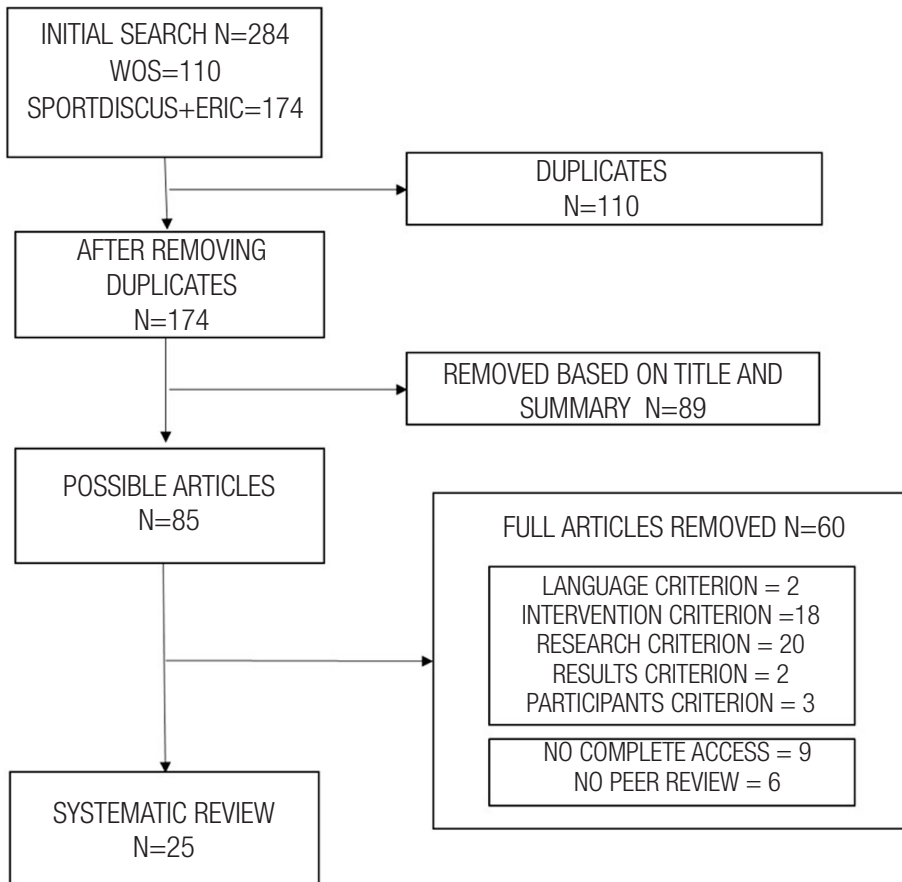
Source: Author.

Table 2- Summary of the researches included in this review

Authors	Country	Service recipients	Duration	Method	Participants	What is researched	Instruments	Results	Results
Capella-Peris, Gil-Gómez and Martí Puig (2014)	Spain	Children with functional diversity		Qualitative	Students	Learning	Open interviews	Academic learnings Professional development (resolving professional doubts)	Academic learnings Professional development (resolving professional doubts)

Study	Country	Population	Dosage	Method	Sample	Focus	Instruments	Results	Results
Capella-Peris, Gil-Gómez, Martí-Puig and Chiva-Bartoll (2015)	Spain	Children with functional diversity		Qualitative	Students	Learning	Open interviews	Reassuring vocation Elimination of prejudices and understanding of diversity Development of moral values (social cohesion, cooperation, empathy)	Reassuring vocation Elimination of prejudices and understanding of diversity Development of moral values (social cohesion, cooperation, empathy)
Chiva Bartoll, Capella-Peris and Pallarés-Piquer (2018)	Spain	Children with motor alterations		Mixed	Students	Learning	Questionnaire Journals Interviews	Improvement of communication skills and group involvement and organization	Improvement of communication skills and group involvement and organization
Chiva-Bartoll, Pallarés-Piquer and Gil-Gómez (2018)	Spain	Children with functional diversity		Mixed	Students	Learning	Qualitative: interviews and journals Quantitative: Questionnaire of Efficient Personality	Improvement in planification and decision making. Connection between theory and practice Self-esteem and self-concept improve Social interaction	Improvement in planification and decision making. Connection between theory and practice Self-esteem and self-concept improve Social interaction
Corbatón-Martínez, Moliner-Miravet, Martí-Puig, Gil-Gómez and Chiva-Bartoll (2015)	Spain	Children with ADHD	Weeks: - Nº of times a week: Once a week Hours/session: - Total hours: 40-45 hours.	Qualitative	Students	Learning	Written reflections Discussion group	Teaching competences (self-efficiency, problem resolution, classroom management) Understanding of ADHD students' needs, involvement in the improvement of society	Teaching competences (self-efficiency, problem resolution, classroom management) Understanding of ADHD students' needs, involvement in the improvement of society
Crandall, and Zachary (2013)	USA	Primary schools from extremely poor areas	Weeks: - Nº of times a week: Once a week Hours/session: - Total hours: -	Quantitative	Students	Learning	Openness to Diversity and Challenge Scale	No changes in openness to diversity.	No changes in openness to diversity.
Cuevas-Goterris, Chiva-Bartoll, and Francisco-Amat (2016)	Spain	Children with functional diversity	Weeks: 4 Nº of times a week: Once a week Hours/session: 3 hours Total hours: -	Qualitative	Students	Learning	Interviews Discussion groups	No teamwork improvement, although it helps to learn how to interact with other agents Improvement of critical competence and reflection about a reality they did not know	No teamwork improvement, although it helps to learn how to interact with other agents Improvement of critical competence and reflection about a reality they did not know

Study	Country	Service recipients	Duration	Methodology	Participants	Focus	Instruments	Results	Results
Domangue and Carson (2008)	USA	Children with low incomes from a community house	Weeks: - Nº of times a week: - Hours/session: - Total hours: 15 hours	Mixed	Students	Learning	Questionnaire (Multicultural Teaching Competencies Scale) Reflection journals Interview	Higher values in cultural competences in those who participated in SL than in those who did not, and it got higher over the course. Reflections are necessary to establish the cultural competence. Change of perspective about the children they worked with.	Higher values in cultural competences in those who participated in SL than in those who did not, and it got higher over the course. Reflections are necessary to establish the cultural competence. Change of perspective about the children they worked with.
Galvan, Meaney and Gray (2018)	USA	Overweight children with low interest in exercising	Weeks: 10 Nº of times a week: - Hours/session: - Total hours: 20 hours.	Mixed	Students Service recipients (children) External observer	Learning Impact on recipients' cardiorespiratory capacity	One-mile test from Fitnessgram to assess cardiorespiratory endurance Reflective journals Discussion groups Researchers' field notes	Service: improvement of cardiorespiratory endurance Learning of content improves, pedagogical understanding of content improves Development of empathy towards others Social competence: cooperative skills get better	Service: improvement of cardiorespiratory endurance Learning of content improves, pedagogical understanding of content improves Development of empathy towards others Social competence: cooperative skills get better
Galvan and Parker (2011)	USA	Non-profit organization for unattended youngsters	Weeks: 9 Nº of times a week: 3 days/week Hours/session: 30-45' Total hours: -	Qualitative	Students Participating youngsters Organization workers University teachers	Service (youngsters' learning) Learning	Interviews, field notes and students' journals	Implement previously acquired pedagogical knowledge of content in a real context. Classroom management strategies. They realize a lack of knowledge of content Social competence was developed only superficially	Implement previously acquired pedagogical knowledge of content in a real context. Classroom management strategies. They realize a lack of knowledge of content Social competence was developed only superficially
Gil-Gómez, Chiva-Bartoll and Martí-Puig (2015)	Spain	Children with special educational needs	Weeks: - Nº of times a week: - Hours/session: - Total hours: 40-45 hours.	Qualitative	Students Teachers Entity representatives	Learning	Reflective journal Global sessions of discussion with the participating agents after each intervention Discussion group of experts	Improvement of teaching competence Improvement of the understanding of disability Social competence: no remarkable changes	Improvement of teaching competence Improvement of the understanding of disability Social competence: no remarkable changes
Gil-Gómez, Moliner-García, Chiva-Bartoll and García López (2016)	Spain	Children with functional diversity	Weeks: 11 Nº of times a week: - Hours/session: - Total hours: 136 hours.	Mixed	Students	Learning	Questionnaire Evaluación de la competencia Ciudadana Prosocial e Inclusiva Subject Service file Monitoring journal of the service	Improvement of social awareness and responsibility	Improvement of social awareness and responsibility

Educ. Pesqui., São Paulo, v. 47, e237446, 2021.

7

Study	Country	Context	Duration	Method	Participants	Focus	Instruments	Results	Results
Himelein, Passman and Phillips (2010)	USA	Whole families for obesity prevention in contexts of disadvantage	Weeks: - Nº of times a week: - Hours/session: - Total hours: 14 hours	Mixed	Students Service recipients (families)	Learning Program Impact on service recipients	Questionnaire Discussion group Interviews	Implement academic learning to a real-world problem. The understanding of the course content improves Self-confidence, empathy, self-awareness Service: there is an impact on families' lifestyles, increasing PA and improving eating habits	Implement academic learning to a real-world problem. The understanding of the course content improves Self-confidence, empathy, self-awareness Service: there is an impact on families' lifestyles, increasing PA and improving eating habits
Lamoneda (2018)	Spain	Students from primary and secondary schools (recess revitalization)	Weeks: 15 Nº of times a week: Once a week Hours/session: - Total hours: -	Quantitative	Students Service recipients (direct users)	Learning PA program	Questionnaire to assess quality in programs of Physical Activity (Hernández, 2001). Questionnaire of generic competences created ad hoc	Program: program positively assessed, as well as the instructor's training Learning: acquisition of generic competences positively assessed	Program: program positively assessed, as well as the instructor's training Learning: acquisition of generic competences positively assessed
Lleixa and Ríos (2015)	Spain	Prisoners from a mental health unit	Weeks: - Nº of times a week: Once a wek Hours/session: 5 hours Total hours: -	Qualitative	Students University teachers Prison guard Participants (prisoners)	Learning Intervention program Program impact on prisoners' lives	Interview to the prison guard Students' field journals 2 discussion groups: one with members of the working group and other with prisoners	Learning Reduce stigma about mental health issues Learn to work with other agents. Establish limits with the prisoners Learn to adapt the resources to the group and their level Service Breaks with the monotonous lives of prisoners, allowing them to socialize. It improves prisoners' motor abilities, as well as respect and self-control, with a decrease of competitiveness and aggressivity in games. It also helps to improve hygienic habits. Program: positively assessed, well programed and with objectives, it allows to change the dynamics in the everyday life of the facility	Learning Reduce stigma about mental health issues Learn to work with other agents. Establish limits with the prisoners Learn to adapt the resources to the group and their level Service Breaks with the monotonous lives of prisoners, allowing them to socialize. It improves prisoners' motor abilities, as well as respect and self-control, with a decrease of competitiveness and aggressivity in games. It also helps to improve hygienic habits. Program: positively assessed, well programed and with objectives, it allows to change the dynamics in the everyday life of the facility

Meaney, Griffin and Bohler (2009)	USA	Preschool kids with no physical education due to economic limitations	Weeks: 8 Nº of times a week: Twice a week Hours/session: - Total hours: -	Qualitative	External observer Students	Learning Impact on recipients	Written journals Interviews to university students Class observation to assess children's physical activity	Improvement of students' pedagogical knowledge Positive and negative emotions during the intervention Service: participating children with high levels of MVPA	Improvement of students' pedagogical knowledge Positive and negative emotions during the intervention Service: participating children with high levels of MVPA
Meaney, Housman, Cavazos and Wilcox (2012)	USA	Children from elementary schools in low-income areas	Weeks: 3 Nº of times a week: Once a week Hours/session: 2 hours Total hours: -	Qualitative	Students	Learning	Reflective journals Discussion groups	Emotions: negative thoughts (anxiety, depression, nervousness) that got dissipated over time Improvement of self-efficiency, self-confidence Change of thoughts and attitudes towards people in disadvantaged contexts	Emotions: negative thoughts (anxiety, depression, nervousness) that got dissipated over time Improvement of self-efficiency, self-confidence Change of thoughts and attitudes towards people in disadvantaged contexts
Miller (2012)	USA	Children from 3-5 years (12 from Special Education)	Weeks: 8 Nº of times a week: once a week Hours/session: 45' Total hours: -	Mixed	Students	Learning	Weekly structured records Questionnaire PE Teachers' vocation for teaching (specifically designed for this research)	Reaffirmation of the importance of the profession Positive influence in the training to assist students with special educational needs Discouragement is reduced throughout the intervention, excitement and joy are maintained	Reaffirmation of the importance of the profession Positive influence in the training to assist students with special educational needs Discouragement is reduced throughout the intervention, excitement and joy are maintained
Peralta, O'Connor, Cotton and Bennie (2016)	Australia	Aboriginal children	Weeks: 2 Nº of times a week: Twice a week Hours/session: 120' Total hours: -	Mixed	Students	Learning	Questionnaire Multicultural Teaching Competencies Scale Individual and group reflections Discussion groups	Improvement throughout SL. Change of stereotypes and preconceived notions Teaching competence: difficulty when implementing a student-centered teaching and difficulties in classroom management	Improvement throughout SL. Change of stereotypes and preconceived notions Teaching competence: difficulty when implementing a student-centered teaching and difficulties in classroom management
Richards, Eberline, Padaruth and Templin (2015)	USA	Children with disabilities (3-18 years)	Weeks: 5 Nº of times a week: Once a week Hours/session: 2 hours Total hours: -	Mixed	External observer Students	Learning	Public Affairs Scale Interviews Weekly reflective journals Non-participating observations	Improvement of commitment to the community, ethical leadership, cultural competence... They consider their participation in the program means a change for the community Curricular competence Opening of new work paths	Improvement of commitment to the community, ethical leadership, cultural competence... They consider their participation in the program means a change for the community Curricular competence Opening of new work paths

Roper and Santiago (2014)	USA	Students with disabilities	Weeks: - Nº of times a week: - Hours/session: - Total hours: 6 hours.	Qualitative	Students	Learning	Discussion group Semi-structured interviews	Appearance of nervousness. Change of preconceived attitudes and how they change through experience	Appearance of nervousness. Change of preconceived attitudes and how they change through experience
Webster, Nesbitt Lee and Egan (2017)	USA	Primary or secondary education students	Weeks: 10 Nº of times a week: Twice a week Hours/session: 3 hours Total hours: -	Qualitative	Students	Learning	Interviews and reflections	Communication skills improve Teaching competences: training and planification	Communication skills improve Teaching competences: training and planification
Whitley, Walsh, Hayden and Gould (2017)	USA	High-school students from neglected communities	Weeks: 12 Nº of times a week: twice a week Hours/session: - Total hours: -	Qualitative	Students Program Director	Learning	Weekly reflective journal Interview with the program director Semi-structured interviews with participants	Improvement of self-confidence, self-assurance, leadership Decrease of stereotyped beliefs; improvement of social justice knowledge and higher value to civic commitment Development of specific knowledge of content, understanding of theoretical principles Exploration of teaching and work possibilities	Improvement of self-confidence, self-assurance, leadership Decrease of stereotyped beliefs; improvement of social justice knowledge and higher value to civic commitment Development of specific knowledge of content, understanding of theoretical principles Exploration of teaching and work possibilities
Wilkinson, Harvey, Bloom, Joober and Grizenko (2013)	Canada	Children with ADHD (6-12 years)	Weeks: - Nº of times a week: - Hours/session: - Total hours: 16 hours.	Qualitative	Students	Learning	Semi-structured interviews	Improvement of pedagogical knowledge of content Professional development	Improvement of pedagogical knowledge of content Professional development
Woodruff and Sinelnikov (2014)	USA	Adults with intellectual disability	Weeks: 10 Nº of times a week: - Hours/session: 1 h 25' Total hours: -	Qualitative	Students External observer	Learning	Interviews, critical incidents, formal reflections and direct observation	Emotions: at the beginning fear and apprehension that changed as the program moved forward The perception of disability changed Teaching competence: develop proposals focused on individualized learning	Emotions: at the beginning fear and apprehension that changed as the program moved forward The perception of disability changed Teaching competence: develop proposals focused on individualized learning

Source: Author.

Characteristics of the intervention programs

Population of the recipients of the service

With regard to the type of recipients of the service according to their age, 64 % of researchers developed SL with children aged between 3 and 12 years, 8 % with youngsters aged between 12 and 18 years, 16 % with both children and youngsters, and 4 % with families. Only 8 % were conducted with adults and none with the elderly (60+ years).

With regard to the type of diversity of recipients, 36 % of the SL interventions were conducted with participants with functional diversity, e.g., disabilities, cerebral palsy, language disorders, motor disorders, etc., all of which were children. Eight percent of interventions were conducted with children who had Attention Deficit Hyperactivity Disorder and 4 % with intellectually disabled adults. Twenty-eight percent were conducted in low-income areas or disadvantaged contexts. One of the interventions (4 %) was conducted with prisoners from a psychiatric unit and another with preschool children whose school did not offer PE due to a lack of resources. Finally, 16 % of the interventions presented no difficulty or any special characteristic with regard to the population receiving the service.

Duration of the intervention programs

Regarding the duration of the SL interventions, the information provided in each of the studies was quite diverse. Four did not provide any data about the duration, the number of interventions of the students, or the hours of service. Out of the remaining 21 studies, 8 did not provide any data regarding the number of weeks. Those studies that did record this information, ranged from 2 to 15 weeks, with 53.85 % of the interventions having a duration of less than 10 weeks, and 46.15 % more than 10 weeks. Regarding the total hours of the projects, of the 21 studies that provided duration data, only 8 presented this information. Three of which had interventions that lasted more than 40 hours, and the other five, less than 20 hours.

Type of research

Research method

Out of the studies analyzed, two employed a quantitative methodology, 14 used a qualitative methodology, and nine applied a mixed method.

Instruments employed

With respect to the instruments employed to collect information, 52 % used three or more instruments. Adopting quantitative methodology, the questionnaires used had a wide variety with different questionnaires being employed for diverse purposes in each research. Conversely, when qualitative methodology was adopted, the highlight was that

Educ. Pesqui., São Paulo, v. 47, e237446, 2021.

11

reflective journals or written reflections (n=17) were used to collect the information. The use of interviews (n=15) was also key in most of the semi-structured cases.

What information was collected?

Seventy-six percent of the studies analyzed focused their attention only on the university students' learning. The information collected was quite diverse depending on the objectives proposed in the research. They ranged from development of curricular competences (pedagogical knowledge of contents), social competences (teamwork, cooperation with different agents), cultural and civic competences (attention to diversity and individual differences, social commitment) to learning about professional development and identity. Out of the other studies, 12 % included the results of both learning and service, only 8 % presented the results of learning, service and the implemented program, and 4 % provided the results of the students' learning and the program. None of the studies collected information about the service or the program in an exclusive way.

Who the information was collected from?

With regard to the agents from whom the information was collected, 100 % highlighted the participation of university students. Of these, 15 gathered the students' perspective exclusively. The remaining 10 showed a great variety of combinations. Three included students and an external observer; two combined the students and the recipients of the service; in another, the students and the manager of the entity. In other two studies, all the participating agents, i.e., the students, recipients, entity representatives, and university teachers were included; and another study included the students, the recipients, and an external observer; the last study incorporated the students, the entity representatives, and the university teachers.

Results obtained

Finally, this section presents the results obtained from the research. These results have been divided between the research assessing the effects of SL on the university students' learning and the one focusing on the benefits arising from the service or the assessment of the implemented program.

University students' learning.

In order to synthesize the university students' learning, we have divided this into six large categories that repeatedly appeared in the research:

(a) Curricular/teaching competence: the results of 16 studies included this type of learning. Most of them assessed experiential learning very positively and were able to put their teaching competences into practice. The research, such as that carried out by Galvan *et al.* (2018), Gil-Gómez *et al.* (2015), Meaney *et al.* (2009), Whitley *et al.* (2017) and Wilkinson *et al.* (2013) provided a perception of improved pedagogical knowledge

of content. Conversely, research has also shown improvements in the preparation and planning of classes (CHIVA-BARTOLL *et al.*, 2018a; WEBSTER *et al.*, 2017), and in classroom management (CORBATÓN-MARTÍNEZ *et al.*, 2015; GALVAN; PARKER, 2011; LLEIXÀ; RÍOS, 2015), as well as the difficulties students had found in the classroom (PERALTA *et al.*, 2016). There was also strain when developing the proposals focused on individualized learning and with the spotlight on students (PERALTA *et al.*, 2016; WOODRUFF; SINELNIKOV, 2014), or sometimes there were problems carrying out the proposals due to the lack of knowledge of the contents (GALVAN; PARKER, 2011). Lastly, the research conducted by Lamoneda (2018) found good perception of the development of teaching competences.

(b) Social competence: the research mainly highlighted the improved aspects related to the collaboration and communication with other agents (CHIVA-BARTOLL *et al.*, 2018a; CHIVA-BARTOLL *et al.*, 2018b; CUEVAS-GOTERRIS *et al.*, 2016; GALVAN *et al.*, 2018; LLEIXÀ; RÍOS 2015; WEBSTER *et al.*, 2017), however, no positive results were shown in improvement of teamwork (CUEVAS-GOTERRIS *et al.*, 2016), although the research by Whitley *et al.* (2017) found improvements in students' leadership. Finally, some of the studies did not include any remarkable results of improvement in social competence (GALVAN; PARKER, 2011; GIL-GÓMEZ *et al.*, 2015).

(c) Cultural and civic competence: the main information found with regard to this competence is the change in the university students' preconceived attitudes towards diversity, disability, and contexts with difficulties, thus erasing beliefs based on stereotypes (CAPELLA-PERIS *et al.*, 2015; CORBATÓN-MARTÍNEZ *et al.*, 2015; CUEVAS-GOTERRIS *et al.*, 2016; DOMANGUE; CARSON, 2008; GALVAN *et al.*, 2018; GIL-GÓMEZ *et al.*, 2015; GIL-GÓMEZ *et al.*, 2016; LLEIXÀ; RÍOS 2015; MEANEY *et al.*, 2012; PERALTA *et al.*, 2016; ROPER; SANTIAGO, 2014; WHITLEY *et al.*, 2017; WOODRUFF; SINELNIKOV, 2014). Only one of the studies did not show any differences in the cultural competence after SL (CRANDALL; ZACHARY, 2013).

(d) Professional development: revised research has revealed the importance of SL in reassuring the professional vocation (CAPELLA-PERIS *et al.*, 2015; MILLER, 2012) and the exploration of new work possibilities (CAPELLA-PERIS *et al.*, 2014; RICHARDS *et al.*, 2015; WHITLEY *et al.*, 2017).

(e) Personal identity: participation in the SL programs also demonstrated improved self-confidence and self-assurance (CHIVA-BARTOLL *et al.*, 2018b; CORBATÓN-MARTÍNEZ *et al.*, 2015; HIMELEIN *et al.*, 2010; MEANEY *et al.*, 2012; WHITLEY *et al.*, 2017).

(f) Feelings: lastly, four of the studies included in this review assessed the feelings produced in the students who participated in the SL programs. All of them highlighted that, at the beginning, they were nervous, apprehensive, and fearful. Nonetheless, all these feelings dissipated as the intervention progressed (MEANEY *et al.*, 2009, 2012; MILLER, 2012; ROPER; SANTIAGO, 2014; WOODRUFF; SINELNIKOV, 2014).

Service

The results found in the four studies investigating the impact of SL on the recipients are varied. Galvan *et al.* (2018) encountered improvements in cardio respiratory endurance

of participating children; Meaney *et al.* (2009) showed that the children involved in physical activities engaged in high levels of moderate-vigorous PA; the research by Himelein *et al.* (2010) reported that an impact on the families' lifestyles had been perceived, increasing PA and improving eating habits; lastly, the research by Lleixà and Ríos (2015) found that SL projects conducted with prisoners in mental health units contributed to breaking their monotonous lives, allowing them to socialize with people from the outside; and it also improved their motor functions, hygiene habits, respect and self-control, decreasing their competitiveness and aggressiveness in games.

Discussion

The current review summarizes all the studies on university SL and PE, PA, or sport conducted from 2008 through 2018 that met the proposed inclusion criteria. This review has shown the increase in interest for SL in proposals of PA over the past few years by means of a variety of interventions with regard to population, duration, type of research, the instruments used to gather information, and the aspects envisaged. This will allow to advance and broaden the horizons in the research into SL, addressing all aspects that have not been investigated so far.

The contexts of intervention have stood out for placing their focus on the school-age population, barely assessing how SL proposals could work with adults or the elderly. However, the students from PA and sport degrees must acquire the competences required to also be able to work with these population groups, where interests, types and methods of intervention are different from those with children and youngsters. Moreover, there is a huge amount of research where recipients are people with functional diversity or in the context of poverty or limited resources. The research conducted by Lleixà and Ríos (2015) is the only one that approaches an intervention with a population group with different characteristics, namely, prisoners in a mental health unit. There are many potential groups that could be considered for these proposals: women at risk of social exclusion, the elderly, homeless people, different ethnic groups, immigrants, or other risk groups who suffer some type of illness (diabetes, cancer, etc.), but they have not yet been taken into account. This restricts the development of the students' academic and social competences, as well as the possibilities of the service recipients to participate in PA.

Additionally, 68% of the studies reviewed did not include any information about the total number of hours invested in the service. Those providing this piece of information showed a great diversity in the length of the interventions. This makes it difficult to assess how the time factor influences the results found. Obviously, one would expect to see differences in achievement levels in the goals of the proposal between interventions of 60 hours, compared with a practice of only 5 hours.

In the research methodology, there was a predominance of data triangulation using different instruments: 52 % employed three or more instruments, although not through the triangulation of the perspective of all the agents. Out of studies reviewed, only two of them collected information from all the agents involved in the SL project (GALVAN; PARKER, 2011; LLEIXÀ; RÍOS, 2015). Only one aimed to assess learning, service and the

program. This is a clear limitation of the research and is fostered by the characteristics of the methodology itself, as the requirement to cover a social need and provide an answer to its objectives necessitates the participation of all the recipients and entities playing a key role in globally assessing the efficiency of this methodology (BLOUIN; PERRY, 2009). SL cannot be limited to only assessing the effects of its use on students, because it is as important to know if the objectives are met, if the detected social need is coped with, and to assess the program implemented (TRYON; STOECKER, 2008). In order to achieve this, systematic and objective assessment of these needs is necessary.

The systematic review performed here has revealed that SL can be a helpful methodology for university students' learning and personal development. SL also contributes to improving students' communication skills because they must coordinate their work alongside the other agents. It also favors a change in the perceptions and preconceived ideas towards vulnerable groups, or those at risk of social exclusion. Finally, SL also helps reaffirm or open new professional ways of working. This opinion also is in accordance with other university SL studies conducted in different contexts (HÉBERT; HAUF, 2015).

The strength of this review lies in the large number of research papers reached out, as well as in the depth of approach into the most important elements used to assess results obtained in SL research in the contexts of PA, PE, and sport. An additional strength is the inclusion of articles published both in Spanish and English, allowing a wider vision of SL at an international level and showing the differences in the projects that are implemented in the different regions. However, the results of this study are limited as a result of inclusion criteria established in its methodology, since other proposals were left out as they simply described the implementation of SL. Furthermore, it is impossible to clearly compare the results obtained by the different studies due to the diversity of methods and techniques used to collect information, as well as the particular characteristics of the SL programs which have prevented our ability to draw strong conclusions about their results.

Future research must delve deeper into the aspects not addressed more accurately until now, such as: (1) the specificity of the knowledge in the field, i.e., particular competences mainly about the knowledge of content, (2) to assess in more detail the competences of intervention in context, (3) the changes in civic and social competences, i.e., short- and long-term, (4) the specific competences of intervention on groups with special characteristics, such as disabilities, and the ability to organize specific tasks adapted to their needs, (5) and finally, the effects that the programs have on the groups depending on the objectives established, for example, an improvement in PA levels, healthy habits, active engagement of leisure time, improvement of self-esteem, socialization, etc. In addition to this it is necessary to devise a stronger path of research capable of 'controlling' the different aspects of an intervention such as its duration, and the groups, and employing instruments more consistently.

Conclusion

University SL in the context of PA, PE and sport have shown numerous benefits for students on the academic, social and work level; and it also demonstrated that recipients

were able to maximize the benefits of practicing PA by improving their health and motor functions. As revealed by this study, the potential of the SL methodology as a formative proposal suggests expanding its use in the university context, increasing the variety of projects developed in this area, and implementing the service with other groups with more diverse physical activity proposals. Future research should also be expanded to address the perspective of all the agents involved in the projects and include a more rigorous explanation of the characteristics of the projects that allow to clarify the real impact of the results obtained.

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