BORDÓN
Revista de Pedagogía

SERVICE-LEARNING AND PROJECT-BASED LEARNING METHODOLOGIES IN HIGHER MUSIC EDUCATION: A REVIEW OF THE LITERATURE[1]

Metodologías Aprendizaje-Servicio y Aprendizaje Basado en Proyectos en Educación Musical Superior: una revisión de la literatura

LAURA CUERVO-CALVO[(1)] **Y ALBERTO CABEDO-MAS**[(2)]
(1) Universidad Complutense de Madrid (España)
(2) Universidad Jaume I de Castelló (España)

INTRODUCTION. Recent research highlights the potential of multidimensional and holistic learning in educational transforation, the provision of social services from the university and development of professional identity. This article aims to analyse the relationship between the Service-Learning and Project-Based Learning methodologies in higher music education and the acquisition of transversal competences. **METHOD.** A review of 29 articles on both methodologies in higher music education, published between 2012 and 2022, was conducted. The articles were selected from WoS, Scopus, and ERIC databases. Four categories were explored: (1) Social interaction, (2) personal growth, (3) academic learning, and (4) challenges related to the implementation and contextualization of the methodologies. **RESULTS.** Results show that, in the context of higher music education, both methodologies have a potentially positive impact on the development of transversal competencies in students. The review shows benefits in social aspects such as the development of civic responsibility and communication skills among peers and teachers; academic aspects such as adaptation to complex learning environments, mutually beneficial goals and shared authority; and personal development aspects such as flexibility, solidarity and respect. The review also shows that reflective practice contributes to developing students' openness to constructive criticism, which is perceived as a positive contribution to learning. **CONCLUSIONS.** The methodologies studied can foster students' personal growth, the mitigation of their biases in the classroom and the reflective and conscious appreciation of their own learning. To be taken into account are the challenges related to the complexity of adjusting the projects to the academic curriculum and community needs, as well as the large amount of time and effort required for the process. Finally, further research using different search terms and

criteria is encouraged to achieve a broader understanding of how music initiatives can be designed and implemented through these methodologies, the projection they can have, and how research is conducted in this field.

Keywords: *Music education, Teaching method, Service-Learning, Project Based Learning.*

Introducción

Education in the 21st century and Higher Music Education

The broad mission of education in 21st Century encompasses objectives such as active citizenship, personal development, and well-being (European Commission, 2012). In addition, the key for responding to social changes and the increasingly complex demands external to education is the empowerment to inclusive lifelong learning. Following Phyu and Kálmán (2023), students should aim to become responsible for their own learning and 'learn learning'. They should be able to develop lifelong values and attitudes toward learning. For these purposes it is necessary that curricula deal with life skills and that education enables links between learning, life, and community. This lifelong learning prepares students to the changing information environments, as they must understand, interpret, and use scientific data; produce new ones, and have the ability to solve problems. Therefore, learning systems must be committed, among other things, to innovate and develop skills: "[…] this should start with a high standard of basic education and access at all ages to training and skills development. We also need to find new ways of learning for a society that is becoming increasingly mobile and digital as well as of providing the right blend of 'soft' skills, notably entrepreneurship as well as robust digital skills" (UNESCO, 2018, p. 3).

In this sense, there is global awareness of the need for students to acquire a set of soft skills owing to develop the whole person. Soft skills are also known as transversal competencies and refer to issues such as ethics, attitudes, values, social-emotional and cognitive skills (Comfort & Timms, 2018). Recent studies provide different definitions of 21st-century transversal competencies which differ slightly from each other. UNESCO (2015) report a core set of them in Asia-Pacific educational environments, including critical and innovative thinking, inter-personal skills, intra-personal skills and global citizenship. Another study carried on by the American Brookings institution involving a wide range of 102 world countries states that the most frequently named transversal competencies are communication, creativity, critical thinking, and problem solving (Care *et al.,* 2016). Underlying other recent definitions is the conception that transversal competencies cover dimensions such as human relationships, innovation, thinking skills, and technological literacy (Binkley *et al.,* 2018).

With reference to human relationships, 21st Century education aims the development of self-regulated and cooperative learning (Prieto, 2008; Torre, 2008) to cope with the labor market demands that require professionals capable of working in teams and of being autonomous and self-regulated individuals (Redecker *et al.,* 2011). In case of music education, it means learning autonomously how to use musical instruments in various learning settings such as blended or distance learning (Alberich-Artal & Sangra, 2012; Cruywagen & Potgieter, 2020), as well as "positive" musical group-performing, in which each student

[performer] play a complementary role to the others (Bilen, 2010; Campayo-Muñoz & Cabedo-Mas, 2016). Moreover, it also requires approaching the proposed objectives to the acquisition of musical aptitudes using cooperative skills, maturity, reflection, and responsibility (Arriaga & Riaño, 2017).

Regarding innovation, authors agree that the University should improve learning processes and outcomes, as well as adopt teaching strategies that promote innovation (Cinque, 2016; Lines, 2009). In the case of music education, some of the fundamental elements that make it possible are a playful way of learning, strong connection between theory and practice, development of creativity, promotion of autonomy, changing the role of the teacher as a guide, and fostering cooperative-peer learning (Arriaga & Riaño, 2017). In addition, evidence from research and practice reveals that the use of ICT brings innovation and transversal competences development to the process of learning, communicating, and sharing information (Gertrúdix & Gertrúdix, 2014). ICT-based learning in Music Education capitalizes on the interdependence of teaching modes, whether formal, non-formal or informal (Burnard, 2007; Cayari 2015), and leads to massive use of open educational resources (OER), and social media channels (Greenhow & Galvin, 2020; Román, 2017). In this sense, reinforcing critical thinking skills would enable students' protection and effective learning (Casanova & Serrano, 2016), and enhancing the digital competence would also empower learners to be more creative (Punie *et al.,* 2014). However, it should not be forgotten that musical improvisation activities in themselves already develop creative thinking (Hallam, 2010).

On the other hand, by developing thinking skills students learn in a meaningful way and moreover, they learn to use critical thinking to find solutions as well as to be responsible for their learning (Demiral, 2018). In music education, there is a connection between activities that reinforce creativity and adopting critical thinking (Zhang, 2022) and fostering creative attitude in the music class may stimulate students curiosity, change their perspectives, and help them navigate both personal and social domains (Schiavio *et al.,* 2023)

The shift towards twenty-first century skills is taking place in education systems, new approaches of teaching strategies are raising, and technologies are providing opportunities to more pragmatic and innovative solutions (Care, 2018)

Teaching and Learning settings in Higher Music Education

In order to meet with the aforementioned challenges, music education has to adapt to rapidly changing societies and therefore, constantly reflect on teaching and learning processes. Schools and educational systems need to rapidly accomodate to dynamic realities and, in this, research can bring light to challenges such as connecting theory and practice, respond to social needs or promote inclusive education (Bautista *et al.,* 2023). The arts, and specifically, music, has a big role on these aims, and the Universities are key settings to innovate in teaching and learning processes (Clements, 2010; Walker, 2007).

Martínez-Rodríguez et al. (2018) state that "arts education models must be in line with the conception of art at each moment" (p. 18) and also with learning ecologies. Music education professionals and stakeholders in higher education need to reflect on how pedagogical innovations can

stimulate learning music and how different models of music making —creating, exploring, performing, etc.—— can be based on learning experiences that promote "confluence of all the contexts where learning takes place —political, cultural, social, emotional— acquiring a more social, community, participatory, reflexive, and interactive vision" (Olvera-Fernández *et al.,* 2022)

Several methodologies and approaches in teaching and learning have been designed, implemented and assessed to test efficacy on how innovative education can serve as a way to enable more powerful, experience-based, contextualised and, in sum, better educational processes. Technology —as one, but not the only— has reformulated the methods in which people teach and learn music (Partti *et al.,* 2021). Among these methodologies and approaches, Project-based learning (PBL) and Service-Learning (SL) have been widely used as a way to enable leaning settings that are contextualised and emerge from real or context-based settings.

Project-based learning (PBL) is based on the idea that real-life problems can develop teaching and learning processes. This is mainly because learning based on experienced that are real or that can be connected with students' reality have the potential to be more meaningful for them (Larmer & Mergendoller, 2010). With these principles, PBL is "a student-centred form of instruction which is built on three constructivist principles: learning is context-specific, learners are involved actively in the learning process and they achieve their goals through social interactions and the sharing of knowledge and understanding" (Kokostaki *et al.,* 2016). At its core, PBL can be an educational approach that enable authentic, situated and engaging learning, provoke critical thinking, and develop autonomy and creativity, by making students responsible for making choices and for designing and managing their work (Tobias *et al.,* 2015). PBL approaches in music education has grown interest during the last years and has been proven to be an effective way of learning music and a provoking field of research (Botella-Nicolás & Ramos-Ramos, 2020). As a consequence, the use of PBL initiatives in music teaching and learning has been often used in different educational settings, with multiple examples of initiatives in early childhood education (Agmaz & Ergulec, 2019), primary schools (Bylica, 2020), secondary schools (Kibici, 2022), and in tertiary education, including music academies or conservatoires (Hahn, 2019).

In a generic way, Service-Learning (SL) is a pedagogical method carried out by the reciprocal action of the students and the community, in pursuit of satisfying unmet social needs (Furco & Billig, 2002; Tapia, 2008). The National Society for Experiential Education, defined SL as "any carefully monitored service experience in which a student has intentional learning goals and reflects actively on what he or she is learning throughout the experience" (Furco, 1996). In this, the service is integrated into the curriculum, and is a means to provide students with opportunities to employ academic skills in real-life situations. The adaptation of SL approaches in education has been proven to have positive impacts on different aspects such as academic progress, self-concept and personal and social growth (White, 2001), on the attitudes towards learning and the school, the civic commitment and the development of social skills (Celio *et al.,* 2011) and on social and intercultural understanding (Yorio & Ye, 2012).

The number of research on the personal and social effects of SL in music education settings has emerged strongly in recent times (for example, Barnes, 2002; Reynolds & Conway, 2003; Reynolds *et al.,* 2005; Yob, 2000). These include examples in primary education (Arrington, 2010; Chiva-Bartoll *et al.,* 2020), secondary schools (Pritchard & Whitehead, 2004), and in tertiary education, in which SL has been more widely used (Chiva-Bartoll *et al.,* 2019; Cuervo *et al.,*

2021; Gillanders *et al.,* 2018). From the results reflected in these studies, it can be deduced that the contributions that the SL offers to experiences of active musical practice can be a highly desirable enhancing factor (Chiva-Bartoll *et al.,* 2019).

This study aims to analyze recent studies (2012-2022) that have applied service-learning (S-L) and project-based learning (PBL) methodologies in higher music education to understand the nature of their contributions to the acquisition of transversal competences. The study is motivated by the need to better understand approaches to educational innovation and to identify high-quality educational models that address the needs of the 21st Century.

Methodology

The selected qualitative methodology is based on the research questions, and follow Miles *et al.* (2014), as well as Cochrane recommendations (Higgins & Green, 2011).

The specific questions raised in this study are as follows: (1) What is the nature of the contributions of service-learning (S-L) and project-based learning (PBL) to the acquisition of transversal competences in higher music education? (2) What impacts are generated by the types of innovations provided by the studies? and (3) What challenges have emerged with the implementation and contextualization of these methodologies?

In order to answer these questions, a rigorous and objective analysis of previously selected articles was carried out (Yardley, 2017). The search process for the articles was carried out using the WoS, ERIC and SCOPUS databases, and inclusion and exclusion criteria such as: (1) years 2012-2022; (2) The key words were delimited as follow: Service-Learning AND music; project-based AND learning AND music, (3) English and Spanish languages were selected, (4) higher education; (5) open access only.

Regarding the selection process of the articles, from the total of the 297 articles, we reviewed the titles, abstracts and key words, with the intention of checking that they studied SL and PBL teaching methodologies and that university level in Music Education was delimited. Finally, 29 documents were selected for analysis (see Table 1 in Appendix).

Selected articles are presented in chronological and alphabetical order of authors (Table 1 in Appendix). We selectively collected data from the final articles, contrasting this material in the quest for patterns or regularities, seeking out more data to support these emerging clusters, and then gradually drawing inferences from the links between other data segments and the cumulative set of conceptualizations. This process of selecting, focusing, simplifying, abstracting, and transforming the data refers to "data condensation" and is a part of analysis that sharpens, sorts, focuses, discards, and organizes data in such a way that conclusions can be drawn and verified (Miles *et al.,* 2014). To address trustworthiness, we have created a matrix including authors, tittles, abstracts, key words, methods, results, and conclusions. Good data displays are a major avenue to robust qualitative analysis (Higgins & Green, 2011).

<center>**FIGURE 1. Flow diagram**</center>
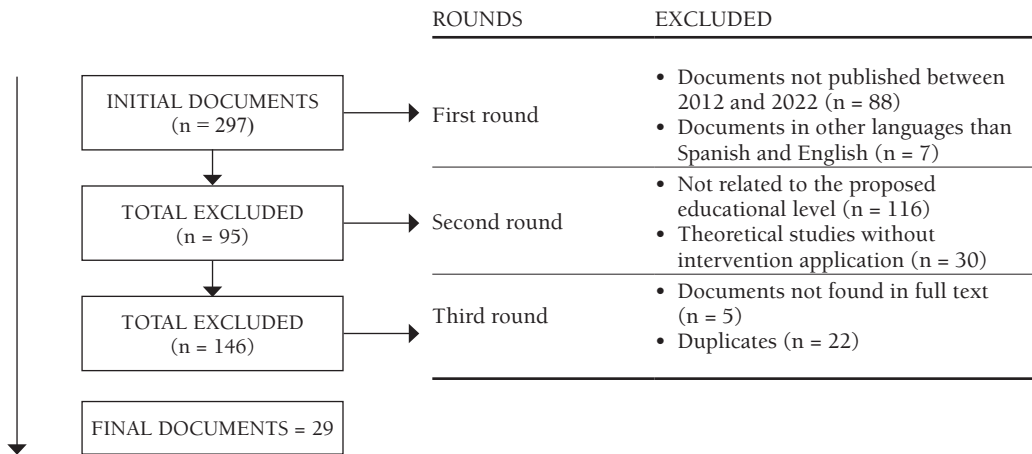
We used Cochrane 5.1.0 resource to assess for bias or systematic error in all articles included, i.e. the degree of credibility of their results. The greater the risk of bias, the less valid the conclusions about the results. We have used the Review Manager 5 (RevMan, 2020) and assessed the bias domains: "selection, performance, attrition, detection and reporting" at three levels: low, high and unclear (Higgins & Green, 2011, p.204). We then assessed the risk of bias between studies (see figure 2).

<center>**FIGURE 2. RevMan Risk of bias graph**</center>
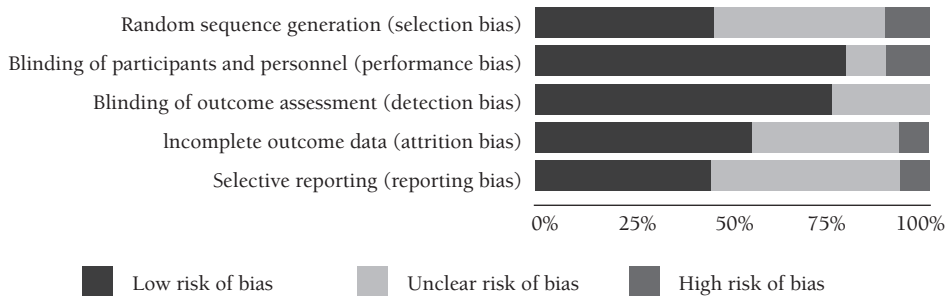
Results

Description of studies

Twenty-nine studies met the inclusion criteria and were analysed in this review (see Fig.1). Most of them were conducted in USA (16) followed by Spain (7), Australia (3), Thailand (1), Africa (1), and Chile (1). Teaching modalities included comparisons between SL and PBL approaches; synchronous online environment, multimedia and analog based learning; transdisciplinary, interdisciplinary and unique disciplines programs; peer or staff tutored session; regional and abroad

experiences. Two studies involved music therapy. 23 studies were conducted with undergraduate teacher training students. Table 1 (in Appendix) provides further details about participants.

Risk of bias in studies

The differences detected in the risks of bias of individual articles may help to explain the heterogeneity of the results. The higher risk of bias in the articles refers to the non-random assignment of participants. In some studies data are lacking, which has hindered the assessment of this dimension. On the other hand, the number of participants in some studies is low (Table 1 in Appendix) and the results of studies with smaller samples are subject to greater sample variation and may therefore be less accurate.

In terms of performance, there is no evidence of bias in relation to the blinding of participants. There is no personal identification of them.

Regarding performance bias, the risk is low, since most articles mention the procedure to adequately hide the assignment sequence for the people involved in the process and for the assignment of the participating students.

The risk is also low for detection bias, that is blinging of outcomes assessment.

Finally, reporting bias resulted in an uncertain risk of bias, as not all articles reported data from the applied assessment tools, and in presenting the findings some place more emphasis on the significant results than on the non-significant ones.

On the other hand, qualitative data analysis is an iterative enterprise which connects data condensation, display, and conclusion drawing (Miles *et al.,* 2014). In this study, we have analysed, contrasted, and organised collected data, and have constructed patterns out of them for analytic categories (1) social interaction, (2) growth in personal attitudes, (3) academic learning, and (4) Challenges referred to the implementation and contextualization of the methodologies.

Social interaction

Preservice teacher socialization and relationship buildings are related skills to music teacher education (Forrester, 2019). In this context, offering preservice teacher the possibility to engage in different types of authentic context learning experiences through SL programmes, expands the possibility of establishing social connections (Baughman, 2020; Gillanders *et al.,* 2018) and gaining improved acceptance of one another and of the different ideas demonstrated by their peers. This attitude leads students to be aware of and celebrate the growth of others (Menard & Robert, 2014).

On the other hand, partnership characteristics of a problem-solving setting (PBL), foster communication, and valuing of each other's contributions (Yoo & Kang, 2021) as well as the ability to ask for help to get through the project (Berbel *et al.,* 2017). By the way, working in a group, allows each student to become responsible for part of the process, and to negotiate with their peers (Sefton *et al.,* 2020).

Encouraging the building of relationships can be seen as a starting point for creating social change (Nichols & Sullivan, 2016). In this sense, facilitating pre-service music teacher collaborative and community connected learning might allow them to acquire understanding and dispositions to the challenges they will have to face. In the case of Cayari PBL based project (2015) which was developed in a virtual environment, aiming to create music videos that could be shared in class and online, students achieved increased understanding for advanced communication both in the classroom and on social media.

Moreover, community engagement SL programs in music can foster meaningful social collaborations between universities and other institutions or communities (Bartleet & Carfoot, 2013; Cuervo *et al.* 2021), as well as some PBL programmes use to carry out multidisciplinary real-life projects (Sefton *et al.,* 2020; Tejada & Thayer, 2019).

Thayer *et al.* (2021) in agreement with Snow (2004), consider the community as a potentially transformative entity. The SL community music project developed by Harrop-Allin (2017) in rural South Africa, afforded to link education with social responsibility by integrating community engagement activities into academic work. Students became more socially engaged and were aware of the benefits for both, for themselves and for the communities they served. Thus, they committed themselves to social transformation and became potential practitioners of community change. In this regard, SL experience carried out by Gubner *et al.* (2020) reported similar outcomes, as engagement with community beneficiaries (people with dementia) in their careers, families, and communities continued after course completion. In the same vein, the experience developed by Parejo *et al.* (2021) which aimed to develop socio-cultural diversity-values by using a SL program, fostered a sense of civic responsibility towards the community in the students beyond the teaching setting. In the case of the SL experience aimed to developing musical practices shaped by the needs of a juvenile Detention Center Arts Project, the facilitated musical experience with the incarcerated youth increased pre-service music teachers' awareness of the diversity of the sociocultural systems that shape their future students (Nichols & Sullivan, 2016). Those untraditional teaching environments were essential to examining students' beliefs and fostering a deeper understanding of the part of the population they were working with.

An important aspect that defines community engagement is reciprocity, which in an educational context with SL or PBL programs is embodied in the development of respect, shared authority, and mutually beneficial goals (Forrester, 2019; Yoo & Kang, 2021). Moreover, music making activities with SL led to powerful learning experiences that fostered mutual appreciation (Bartleet *et al.,* 2016).

Growth in personal attitudes

Growth in personal attitudes is considered important to student preparation for life and for their professional careers (Feen-Calligan & Matthews, 2016). Self-direction and creative-leadership are some of these life and career skills (Yoo & Kang, 2021). In this sense, working process of a PBL setting helps students to discover their own potential because it empowers them to be builders of their own learning and become flexible (Berrón & Monreal, 2020). In the case of Akkapram´s project (2020), which soughed to incorporate community arts and culture as a form of cultural capital for participants through the use of PBL methodology, enabled students to

courage to express their opinions in a creative way, as well as to become more discipline and patient as they step out to learn the performing arts outside of the classroom. They showed a more open attitude towards the different cultural world and its aesthetic through the collaboration with local artists, thus broadening their perception of the environment, and of the perspectives and lives of others.

On the other hand, promoting effective communication help easier manage daily situations, and leads to better collaboration (Forrester, 2019). Learning to identify emotions from human´s voice as in the BPL setting carried out by Berbel *et al.* (2017), was a personal challenge that allowed to develop communication through nonverbal language, and thereafter, contributed to better understand the communications context. Yoo & Kang (2021) reported the experiences helped preservice teachers to adapt to dynamic and complex scenarios. Although students had reported their need to create lesson plans to feel comfortable when acting as professionals, PBL made more difficult to predict each sequential step of the lesson and, therefore, helped students to develop flexibility, an open mind, and an ability to adapt to meet circumstances where crucial pedagogical skills were needed. In the end, surpassing technical, musical and pedagogical challenges (Cayari, 2015), led to a self-reported sense of accomplishment and satisfaction for the students.

In the case of SL environments, opportunities for personal growth occurs not only in the academic setting from teacher and peers but from beneficiary, and community. In this sense, social engagement through applied experiential SL increase student´s awareness of civic learning (Harrop-Allin, 2017) and lead to deepen in moral values (Bartleet & Carfoot, 2013). Critical reflection on the social problem they are dealing with in a SL background involves emotional learning aspects which lead to a better understanding of themselves and of others. In Menard and Rosen (2014) outlined experience, undergraduate music majors participating as teacher/mentors for elementary students became aware on the importance of encouraging students without influencing their music composition ideas and they also were concern with appreciating children's intention to gain a better understanding of them. Practising critical reflection in a SL experience develops in students the sense of receiving critical feedback as a positive learning contribution and allows professional growth. This learning is a foregone point in a collaborative setting.

Thus, SL settings contribute to develop the evolving sense of undergraduate´s identity as teacher and of their awareness of the responsibility associated with this job (Bartolome, 2017).

Academic learning

Employing PBL or SL in music teaching and learning in higher education contexts has been proven to have positive effects on academic aspects of learning. Together with leaning music —acquiring competences on music listening, composing and performing—, such methodologies can impact on different areas of students' academic and professional development.

Akkapram (2020) suggest that, after the experience analysed, the music students learned to work systematically after their long practice sessions and also to establish effective collaboration processes with other group of professionals. This included the ability to adjust to new behaviours, to better plan for daily work and to be able to successfully express their ideas and adapt them into

the context. The study reported that some other abilities developed included responsibility and punctuality. These results are consistent with the ones addressed by Tejada & Thayer (2019), and Thayer *et al.* (2021), which identified enriching aspect of collaborative work and the exchange of opinions, mutual learning experiences, the sense of satisfaction, and the adequate focus of the course on group work. In all these cases, PBL served as a catalyst to promote reflection and critical thinking.

Together with these very aspects, SL experiences included academic achievements mainly related to the fact that students feel these processes as real versus imagined subjects and enable them to experience ideology in their own lived experience (Bartleet & Carfoot, 2013). In this sense, some of the articles report that employing SL strategies in the music classroom enabled to create authentic experiences that would better prepare students for their first teaching jobs (Baughman, 2020; Berrón & Monreal, 2020). This included an optimization in the strategies of social interaction and context control, and the perception of the acquired knowledge (Cuervo *et al.,* 2021). For preservice music teachers, participating in SL projects helped to think critically about mitigating their classroom bias and expanding their viewpoints (Harrop- Allin, 2017; Forrester, 2019). In this, they found their own challenges (Menard & Rosen, 2016), such as discovering their own deficiencies in error detection and choosing teaching methods on the spot (Baughman, 2020). Baughman (2020) reported that the students learned to manage a classroom through participating in behavior monitoring and through strategically paced rehearsals. Similarly, Koops (2022) identified that the focus on developing the creativity of the preservice music teachers and then transferring that experience to the SL classes was one important aspect. Also, creativity was developed in PBL settings (Yoo & Kang, 2021). In sum, in most studies students report that SL have the potential to make a learning experience more meaningful, and to better understand the meaning and significance of the subject (Gillanders *et al.,* 2018). The same perception emerged in PBL transdisciplinary settings (Akkapram, 2022; Feen-Calligan & Matthews, 2016; Sefton *et al.,* 2020).

Furthermore, SL projects help to acquire different extra-musical knowledge, often related to the community which the project is developed with. Gubner *et al.* (2020) research proved that music education students participating in a SL project with people with dementia pushed beyond preconceived ideas about the relationship between music and dementia. Students even reported acquiring future professional knowledge, as they became aware of the growth of an interprofessional workforce. Similarly, Bartleet & Carfoot (2013) reported that their students who worked with indigenous communities gained significant knowledge about the communities. Furthermore, the fact that SL projects most often work with outside communities, research show clear evidence of positive gains through reciprocity in terms of academic knowledge (Koops, 2022). Finally, providing students with intercultural experiences through community SL programs can foster the potential to transform their understandings to other cultures (Bartleet *et al.,* 2013, 2016). Intercultural understanding has been also reported in PBL experiences, such as Akkapram (2020) research findings, which suggest that working through community connections and collaborative activities with a PBL approach, enables students to achieve understanding of a different world and develops individual and collective skills to solve problems. In addition, International Service-Learning (ISL) has positive impacts on participants' intercultural competence (Tang & Schwantes, 2021). Such experiences between different cultural environments are nowadays encouraged through distance SL projects and online SL internships (Pike, 2017).

**Challenges referred to the implementation and contextualization
of the methodologies**

According to the research, designing service-learning (S-L) projects in higher music education can pose several challenges. Firstly, working in a foreign context that may have diverse cultural backgrounds can make it difficult to develop meaningful relationships with the community and achieve mutual goals (Harrop-Allin, 2017. This is however one strength of SL projects, as one of the challenges identified in PBL initiatives emphasize the importance of finding authentic and meaningful contexts for projects that allow for the integration of multiple skills and concepts (Yoo & Kang, 2021). Finding and working with community partners is indeed enriching but requires a lot of time and effort (Gubner *et al.,* 2020). In some cases, Harrop-Allin (2017) identify language barriers that can hinder effective communication. This has also been the case in some PBL initiatives (Akkapram, 2020). Cuervo *et al.* (2021) highlight the lack of clear guidelines and frameworks for designing and assessing SL initiatives in music education as a significant challenge. Other challenges include balancing the needs and expectations of multiple stakeholders, ensuring safety and health considerations for students, and determining appropriate service projects that align with the students' learning goals and the needs of the community (Power, 2013). Lastly, designing SL projects in a culturally appropriate way that respects cultural protocols and avoids becoming extractive or tokenistic requires ongoing communication and relationship-building with community partners, ethical considerations related to power imbalances and privilege, and ongoing critical reflection and learning by educators (Bartleet *et al.,* 2016; Parejo *et al.,* 2021).

In relation to the curriculum, SL initiatives in music education pose several challenges related to balancing the educational and social goals of the project while maintaining high levels of musical quality. Koops (2022) highlights the need for careful planning and collaboration between educators and community partners to align SL initiatives with music education standards and learning outcomes. Similarly, Forrester (2019) and Cuervo *et al.* (2021) note the potential tension between a focus on service and a focus on learning in SL initiatives. In addition, there is a challenge of balancing the creative and educational aspects of the project. Gubner *et al.* (2020) highlight the need to create projects that are both engaging and educational for undergraduate students while producing high-quality final products that are meaningful for community partners. Power (2013) also emphasizes the challenge of balancing the experiential learning opportunities of service with the need for academic rigor and assessment of learning outcomes.

Similarly, one of the challenges of designing PBL experiences is the development of effective project-based learning activities that address the needs of diverse learners and align with state standards (Sefton *et al.,* 2020). To this end, Yoo & Kang (2021) and Berbel *et al.* (2017) highlight the importance of ongoing critical reflection and evaluation to improve the effectiveness of project-based learning in music education.

Forrester (2019) and Koops (2022) also identify challenges in relation to the time, as these initiatives may often require efforts outside of regular classroom hours and educators may often have limited time for reflection.

Both PBL and SL projects in higher music education can be also challenging due to various resource-related issues. Firstly, the lack of resources such as instruments, equipment, and access to

technology can hinder the successful implementation initiatives (Harrop-Allin, 2017). Additionally, they may require additional resources such as transportation and materials, which can create financial challenges for both educators and community partners (Koops, 2022). To overcome these challenges, securing funding is crucial (Akkapram, 2020; Power, 2013).

Last, effective PAB and SL initiatives in music education require consideration of several factors related to training. Yoo & Kang (2021) and Thayer *et al.* (2021) note that traditional music teacher education has not always emphasized the development of 21st-century skills, which are critical for success in a rapidly evolving in different areas of PBL such as technology and industry. Due to this, there may be resistance to change among music educators and institutions, making it difficult to introduce new pedagogical approaches. Appropriate training and support for music teachers is necessary for effective implementation of SL initiatives in their classrooms (Cuervo *et al.,* 2021). However, some music educators may feel ill-equipped to facilitate SL initiatives due to a lack of training or experience in community engagement and service-learning, and there may be a lack of prior experience and preparation of preservice teachers (Forrester, 2019; Koops, 2022).

Finally, both in PBL and SL initiatives, several authors identify a clear need for more research (Bartleet *et al.,* 2016; Berbel *et al.,* 2017; Thayer *et al.,* 2021; Sefton *et al.,* 2020).

Conclusions

The aim of this study was to analyze recent studies (2012-2022) that have applied SL and PBL methodologies in higher music education to understand the nature of their contributions to the acquisition of transversal competences. We explored the categories *social interaction*, *personal growth*, *academic learning*, and *challenges* related to the implementation and contextualization of those methodologies.

With respect to *social interaction*, we can conclude that offering the possibility to engage in real context SL experiences increases the possibility of establishing social connections and building-up socio-cultural diversity understanding (Gubner *et al.,* 2020; Parejo *et al.,* 2021). Both methodologies, SL and PBL, contribute to become more socially integrated and more willing to collaborate in academic activities (Baughman, 2020; Gillanders *et al.,* 2018), as well as to develop respect and mutual appreciation (Sefton *et al.,* 2020). In this vein, these learning methodologies contributed to increase music students in higher education's awareness and acceptance of the diversity in their class group. In the case of pre-service music teachers, these benefits may also shape their future students (Nichols & Sullivan, 2016).

In relation to *personal growth*, this review provides valuable insights into the contribution of those methodologies in higher music education to the acquisition of creativity, critical thinking, collaborative working, communication, and having an open attitude (Yoo & Kang, 2021; Thayer *et al.,* 2021; Sefton *et al.,* 2020). Besides, in the case of SL environments, engagement through applied experiential learnings increases student´s awareness of civic responsibility. Learning experiences go beyond the academic context to the personal sphere and have a positive influence on students' maturation.

Conclusions concerning *academic learning* suggest that both methodologies, SL and PBL, contribute significantly to enable multidisciplinary learning through real projects and real settings.

Moreover, they can foster collaborative work and offer the opportunity to become responsible for the own learning process.

Regarding *challenges* related to the implementation and contextualization of the methodologies, we can conclude that the complexity of implementation requires a serious social commitment from the teacher. Addressing Eckersley *et al.* (2018) results, we found out that the music teacher needs an appropriate training and support to successfully implement SL and PBL methodologies in higher music education. The challenges in implementing SL and PBL include limited resources, managing logistics, and the lack of institutional support (Harrop-Allin, 2017; Gubner *et al.,* 2020; Cuervo *et al.,* 2021). By addressing these challenges, professionals in higher music education settings can develop high-quality educational models that deal with the needs of the 21st century, aimed not only at improving students' academic skills, but also involving social skills and personal development. Teachers involved in the development of these methodologies seem to be aware of the need to implement learning beyond the curricular ones, that is, learning for life. This model aligns more with a learning process centred in the holistic development of the person, rather than only in the academic outcome.

Although the results of the review reveal potentially interesting positive outcomes for researchers, educators, and practitioners, several limitations need to be considered. Firstly, while 29 studies represent a considerable volume of research, the sample remains limited, and the results and conclusions reached in this research cannot be generalized (Bartolucci & Hillegass, 2010). Secondly, all publications included in this study come from indexed journals and have been written in English or Spanish. The importance of "grey literature", such as doctoral theses, conference presentations, or articles from other non-indexed journals, has been highlighted by some authors, as these studies may provide valuable insights that were not captured in this review (Cooper *et al.,* 2009). The omission of such studies could have influenced the results and conclusions of this review.

It is important to note that this review focuses on a small subset of studies and does not cover the entire volume of research on the impact of implementing methodologies such as SL or PBL. Furthermore, the selection of the reviewed studies and the application of inclusion and exclusion criteria may have been influenced by the reviewers' own perspective. Nevertheless, this review provides a general picture of the research that readers may find in specific databases. The strict application of the review process means that the search can be reproduced or modified to explore other publications that could complement or contribute new findings to those identified in this study.

Therefore, it is encouraged to conduct further research that examines the effects of employing SL and PBL methodologies on students' social development using different terms and criteria to present a broader understanding of how music initiatives are designed and implemented, how research is conducted in this field, and the social and personal outcomes that can be expected from these activities (Kratus, 2017).

Despite the unresolved challenges encountered in this review, the field of inquiry under examination is highly promising. Our review aims to serve as a foundation upon which future researchers and educators can build and advance the state of knowledge referred to learn methodologies in this area. Additionally, it is hoped that the present review will motivate immediate improvements and spur further investigations into this fascinating domain of study related to how group SL and

PBL initiatives in higher music education are formed, how research in this area is conducted, and the social and personal outcomes that may be expected from participating in these activities. Moreover, by going deeper into the intrinsic characteristics of both methodologies, SL and PBL, researcher could learn more about how they lead to effective academic learning and motivated students.

The limitations of the reviewed literature and the potential for future work in this field should not discourage scholars and practitioners from recognizing the immense value that music making initiatives offer for the development of transversal competences, and how employing engaging learning methodologies can result in personal and social benefits for students and educators.

Notes

References

Agmaz, R. F. & Ergulec, F. (2019). Music Down Here: A Project Based Learning Approach. *The International Journal of Research in Teacher Education, 10*(3), 42-53.

Akkapram, P. (2020). The impact of the Sinsai Roo Jai ton project on the development of local culture and contemporary performance in northeastern Thailand. *Manusya, 23*(3), 430-449

Alberich-Artal, E. & Sangra, A. (2012). Virtual Virtuosos. A Case Study in Learning Music in Virtual Learning Environments in Spain. *European Journal of Open, Distance and E-Learning,* 1-9. https://files.eric.ed.gov/fulltext/EJ979597.pdf

Arriaga, C. & Riaño, M. E. (2017). La práctica musical desde la reflexión y la acción en la formación inicial del profesorado. *ENSAYOS, Revista de la Facultad de Educación de Albacete, 32*(1), 17-32. https://www.revista.uclm.es/index.php/ensayos

Arrington, N. M. (2010). *The effects of participating in a service-learning experience on the development of self-efficacy for self-regulated learning of third graders in an elementary school in southeastern United States* (Doctoral dissertation), Clemson University, South Carolina (USA).

Barnes, G. V. (2002). Opportunities in service learning. *Music Educators Journal, 88*(4), 42-46.

Bartolucci, A. A. & Hillegass, W. B. (2010). Overview, Strengths, and Limitations of Systematic Reviews and Meta-Analyses. In: F. Chiappelli (eds.), *Evidence-Based Practice: Toward Optimizing Clinical Outcomes.* Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-05025-1_2

Bartleet, B.-L. & Carfoot, G. (2013). Desert Harmony: Stories of Collaboration between Indigenous Musicians and University Students. *International Education Journal: Comparative Perspectives, 12*(1), 180-196.

Bartleet, B.-L., Sunderland, N. & Carfoot, G. (2016). Enhancing Intercultural Engagement Through Service Learning and Music Making with Indigenous Communities in Australia. *Research Studies in Music Education, 38*(2), 173-191. https://doi.org/10.1177/1321103X166678

Bartolome, S. (2017). Comparing Field-Teaching Experiences: A Longitudinal Examination of Preservice and First-Year Teacher Perspectives. *Journal of Research in Music Education, 65*(3), 264-286. https://doi.org/10.1177/0022429417730043

Baughman, M. (2020). Mentorship and Learning Experiences of Preservice Teachers as Community Children's Chorus Conductors. *Journal of Music Teacher Education, 29*(2), 38-52. https://doi.org/10.1177/1057083719876

Bautista, A., Cerdán, R., García-Carrión, R., Salsa, A. M., Aldoney, D., Cabedo-Mas, A., Campos, R., Clarà, M., Gámez-Guadix, M., Ilari, B., Kammerer, Y., Macedo-Rouet, M., Mendive, S., Múñez, D., Saux, G. I., Sun, H., Sun, J., Clara Ventura, A., Yang, W., Khalfaoui, A., Noguera, I. R., Máñez, I. & Yeung, J. (2023). What research is important today in human development, learning and education? JSED Editors' reflections and research calls. *Journal for the Study of Education and Development, 46*(1), 1-38. https://doi.org/10.1080/02103702.2022.2137980

Berbel-Gómez, N., Jaume, M. & Rovira, M. D. P. (2017). A cooperative learning experience through life stories linked with emotions: The 'poliedric life stories' experience. *Turkish Online Journal of Educational Technology, 1*, 52-55.

Berrón, E. & Monreal, I. M. (2020). Initial training of future teachers through Project Based Learning frim Music Education. *Revista Electrónica de LEEME, 46*, 208-223. https://doi.org/10.7203/LEEME.46.18031

Bilen, S. (2010). The effect of cooperative learning on the ability of prospect of music teachers to apply Orff-Schulwerk activities. *Procedia Social and Behavioral Sciences 2*, 4872-4877. https://doi.org/10.1016/j.sbspro.2010.03.787

Binkley, M., Erstad, O., Herman, J., Raizen, S., Ripley, M., Miller-Ricci, M. & Rumble, M. (2018). Defining twenty-first century skills. In E. Care, P. Griffin & M. Wilson (eds.), *Assessment and teaching of 21st century skills* (pp. 17-66). Springer. https://doi.org/10.1007/978-94-007-2324-5_2

Botella, A. M. & Ramos Ramos. P. (2020). El aprendizaje basado en proyectos en el aula de música. *Per Musi, 40*, General Topics: 1-15. e204003. https://doi.org/10.35699/2317-6377.2020.24084

Burnard, P. (2007). Creativity and technology: critical agents of change in the work and lives of music teachers. In: J. Finney & P. Burnard (eds.). *Music Education with Digital Technology* (pp.196-207). Continuum.

Bylica, K. (2020) Hearing my world: negotiating borders, porosity, and relationality through cultural production in middle school music classes. *Music Education Research, 22*(3), 331-345. https://doi.org/10.1080/14613808.2020.1759519

Campayo-Muñoz, E. & Cabedo-Mas, A. (2016). Música y competencias emocionales: posibles implicaciones para la mejora e la Educación Musical. *Revista Electrónica Complutense de Investigación en Educación Musical, 13*, 124-139. https://dx.doi.org/10.5209/RECIEM.51864

Care, E. (2018). Twenty-First century skills: from theory to action. In E. Care, P. Griffin & M. Wilson (eds.) *Assessment and teaching of 21st century skills* (pp.3-21). Springer.

Care, E., Anderson, K. & Kim. (2016). *Visualizing the breadth of skills movement across education systems, Skills for a changing world*. Washington, D.C. The Brookings Institution.

Casanova, O. & Serrano, R. (2016) Internet, tecnología y aplicaciones para la educación musical universitaria del siglo XXI. *Revista de docencia universitaria (REDU), 14*(1), 405-422. https://zaguan.unizar.es/record/56660/files/texto_completo.pdf

Cayari, Ch. (2015). Participatory Culture and Informal Music Learning through Video Creation in the Curriculum. *International Journal of Community Music, 8*(1), 41-57. https://doi.org/10.1386/ijcm.8.1.41_1.

Celio, C. I., Durlak, J. & Dymnicki, A. (2011). A Meta-analysis of the Impact of Service-Learning on Students, *Journal of Experiential Education, 34*(2), 164-181. https://doi.org/10.1177/105382591103400205

Chiva-Bartoll, O., Salvador-García, F. F. & Cabedo-Mas, A. (2019). Aprendizaje-servicio en educación musical: revisión de la literatura y recomendaciones para la práctica. *Revista Electrónica Complutense de Investigación en Educación Musical - RECIEM, 16,* 3-19.

Chiva-Bartoll, O., Moliner, M. L. & Salvador-García, C. (2020). Can service-learning promote social well-being in primary education students? A mixed method approach. *Children and Youth Services Review, 111*, 104841. https://doi.org/10.1016/j.childyouth.2020.104841.

Cinque, M. (2016). "Lost in translation". Soft skills development in European countries. *Tuning Journal for Higher Education, 3*(2), 389-427.

Clements, A. (ed.) (2010). *Alternative approaches in music education: Case studies from the field.* R&L Education.

Comfort, K. & Timms, M. (2018). A Twenty-First Century skills lens on the common core State standards and the next generation science standards. In E. Care, P. Griffin & M. Wilson (eds.), *Assessment and teaching of 21st century skills* (pp. 131-145). Springer.

Cooper, H. M., Hedges, L. V. & Valentine, J. C. (2009). *Handbook of research synthesis and meta-analysis* (2nd ed.). Russell Sage Foundation.

Cruywagen, S. & Potgieter, H. (2020). The World we Live in a Perspective on Blended Learning and Music Education in Higher Education. *Journal for Transdisciplinary Research in Southern Africa, 16*(1), 1-9. https://doi.org/10.4102/td.v16i1.696

Cuervo, L, Arroyo, D., Bonastre, C. & Navarro, E. (2021). Evaluación de una intervención de Aprendizaje-Servicio en Educación Musical, en la formación de profesorado/Evaluation of a Service-Learning Intervention in music education for teacher training. *Revista Electrónica LEEME, 48*, 20-38. https://doi.org/10.7203/LEEME.48.21232

Demiral, U. (2018). Examination of critical thinking skills of preservice science teachers: A perspective of social constructivist theory. *Journal of Education and Learning, 7*(4), 179-190. https://doi.org/10.5539/jel.v7n4p179

Eckersley, B., Tobin, K. & Windsor, S. (2018). Professional Experience and Project-Based Learning as Service Learning. In: J. Kriewaldt, A. Ambrosetti, D. Rorrison & R. Capeness (eds.), *Educating Future Teachers: Innovative Perspectives in Professional Experience*. Springer. https://doi.org/10.1007/978-981-10-5484-6_11

European Commission (2012). Rethinking education strategy: Investing in skills for better socio-economic outcomes. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0669&from=EN

Feen-Calligan, H. & Matthews, W. (2016). Pre-Professional Arts Based Service-Learning in Music Education and Art Therapy. *International Journal of Education & the Arts*, 17, 1-36.

Forrester, S. H. (2019). Community Engagement in Music Education: Preservice Music Teachers' Perceptions of an Urban Service-Learning Initiative. *Journal of Music Teacher Education, 29*(1), 26-40. https://doi.org/10.1177/1057083719871472

Furco, A. (1996). Service-Learning: A Balanced Approach to Experiential Education. *Service Learning, General, 128.* https://digitalcommons.unomaha.edu/slceslgen/128

Furco, A. & Billig, S. H. (2002). *Service Learning. The essence of the Pedagogy*, Greenwich, CT, Information Age Publishing.

Gertrudix, F. & Gertrudix, M. (2014). Tools and Resources for Music Creation and Consumption on WEB 2.0. Applications and Educational Possibilities. *Educación XX1 17*(2), 313-336. https://doi.org/10.5944/educxx1.17.2.11493.

Gillanders, C., Cores Torres, A. & Tojeiro Pérez, L. (2018). Music education and service-learning: a case study in Primary Education teacher training. *Revista Electrónica de LEEME, 2*(42),16-30. https://doi.org/10.7203/LEEME.42.12329

Greenhow, Ch. & Galvin, S. (2020). Teaching with Social Media: Evidence-based Strategies for making Remote Higher Education Less Remote. *Information and Learning Sciences, 121*(7/8), 513-524. https://doi.org/10.1108/ILS-04-2020-0138.

Gubner, J., Smith, A. & Allison, T. (2020). Transforming Undergraduate Student Perceptions of Dementia through Music and Filmmaking. *Journal of the American Geriatrics Society, 65*(5), 1083-1089. https://doi.org/10.1111/jgs.16418

Hahn, K. (2019). Inquiry into an unknown musical practice: an example of learning through project and investigation. In S. Gies & J. H. Sætre (eds.), *Becoming Musicians* (pp. 173-196). NMH publications.

Hallam, S. (2010). The power of music: its impact on the intellectual, social, and personal development of children and young people. *International Journal of Music Education, 28*(3), 269-289. https://doi.org/10.1177/0255761410370658

Harrop-Allin, S. (2017). Higher education student learning beyond the classroom: findings from a community music service-learning project in rural South Africa. *Music Education Research, 19*(3), 231-251. https://doi.org/10.1080/14613808.2016.1214695

Higgins, J. P. T. & Green S. (eds.) (2011). *Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0.* The Cochrane Collaboration, 2011. https:// www.cochrane-handbook.org.

Kibici, V. B. (2022). The effect of project-based learning approach on lesson outcomes, attitudes and retention of learned in secondary school music. *OPUS-Journal of Society Research, 19*(49), 771-783.

Kokotsaki, D., Menzies, V. & Wiggins, A. (2016). Project-based learning: A review of the literature. *Improving schools*, *19*(3), 267-277. https://doi.org/10.1177/13654802166597

Koops, A. (2022). Faith, Scholarship, and Service-Learning in Music Education: A Creative Approach. *Christian Higher Education*, *21*(1-2), 58-81. https://doi.org/10.1080/15363759.2021. 2004472

Kratus, J. (2017). Music listening is creative. *Music Educators Journal, 103*(3), 46-51. https://doi. org/10.1177/0027432116686

Larmer, J. & Mergendoller, J. R. (2010). Seven essentials for project-based learning. *Educational leadership*, *68*(1), 34-37.

Lines, D. K. (ed.) (2009). *La educación musical para el nuevo milenio*. Morata.

Martínez-Rodríguez J. B., Fernández-Rodríguez E. & Anguita R. (2018). *Ecologías del aprendizaje: Educación expandida en contextos múltiples*. Morata.

Menard, E. & Rosen, R. (2014). Preservice Music Teacher Perceptions of Mentoring Young Composers: An Exploratory Case Study. *Journal of Music Teacher Education, 25*(2), 66-80. https:// doi.org/10.1177/10570837145526

Miles, M., Huberman, M. & Saldaña, J. (2014). *Qualitative data analysis: a methods sourcebook*. Sage Publications.

Nichols, J. & Sullivan, B. M. (2016). Learning through dissonance: Critical service-learning in a juvenile detention centre as field experience in music teacher education. *Research Studies in Musik Education*, *18*(2), 155-171. https://doi.org/10.1177/1321103X16641845

Olvera-Fernández, J., Montes-Rodríguez, R. & Ocaña-Fernández, A. (2022). Innovative and disruptive pedagogies in music education: A systematic review of the literature. *International Journal of Music Education*, *41*(1), 3-19. https://doi.org/10.1177/02557614221093709.

Parejo, J. L., Cortón-Heras, M. O. de la & Giraldez-Hayes, A. (2021). La dinamización musical del patio escolar: resultados de un proyecto de aprendizaje-servicio. *Revista Electrónica Complutense de Investigación en Educación Musical, 18,* 181-194. http://orcid.org/0000-0002-1081-3529

Partti, H., Weber, J. & Rolle, C. (2021). Learning a skill, or learning to learn? Supporting teachers' professional development in music education technology. *Journal of Music, Technology & Education*, *14*(2-3), 123-139.

Phyu, W. & Kálmán, A. (2023). Lifelong Learning in the Educational Setting: A Systematic Literature Review. *The Asia-Pacific Education Researcher, 32*(2) https://doi.org/10.1007/s40299-023-00738-w

Pike, P. (2017). Improving music teaching and learning through online service: A case study of a synchronous online teaching internship. *International Journal of Music Education, 35*(1), 107-117. https://doi.org/10.1177/0255761415613534

Prieto, L. (2008). Aprender entre iguales: cómo planificar una actividad de aprendizaje auténticamente cooperativa. En L. Prieto (coord.), *La enseñanza universitaria centrada en el aprendizaje* (pp. 117-132). Octaedro.

Pritchard, F. F. & Whitehead, G. I. (2004). *Serve and learn: Implementing and evaluating service-learning in middle and high schools*. Routledge.

Power, A. (2013). Developing the Music Pre-Service Teacher through International Service Learning. *Australian Journal of Music Education, 2,* 64-70.

Punie, Y., Brecko, B. & Ferrari, A. (2014). DIGCOMP: A Framework for developing and understanding digital competence in Europe. *eLearning Papers, 38,* 5-16.

Redecker, Ch., Leis, M., Leendertse, M., Punie, Y., Gijsbers, G., Kirschner, P., Stoyanov, S. & Hoogveld, B. (2011). *The Future of Learning: Preparing for Change*. Joint Research Centre (JRC), Report of the European Commission. Luxembourg, European Union.

Review Manager (RevMan) (2020). [Computer program]. Version 5.4.1, The Cochrane Collaboration.

Reynolds, A. M. & Conway, C. M. (2003). Service-Learning in Music Education Methods: Perceptions of Participants. *Bulletin of the Council for Research in Music Education, 155*, 1-10.

Reynolds, A. M., Jerome, A., Preston, A. L. & Haynes, H. (2005). Service-learning in music education: Participants' reflections. *Bulletin of the Council for Research in Music Education*, 79-91.

Román, M. (2017). Tecnología al servicio de la educación musical. *Revista Española de Pedagogía, 75*(268), 481-495. https://doi.org/10.22550/REP75-3-2017-09

Schiavio, A., van der Schyff, D., Philippe, R. A. & Biasutti, M. (2023). Music teachers' self-reported views of creativity in the context of their work. *Arts and Humanities in Higher Education, 22*(1), 60-80. https://doi.org/10.1177/14740222221125

Sefton, T., Smith, K. & Tousignant, W. (2020). Integrating Multiliteracies for Preservice Teachers using Project-Based Learning. *Journal of Teaching and Learning, 14*(2), 18-32. https://doi.org/10.22329/jtl.v14i2.6320

Snow, K. (2004). What counts as literacy in early childhood? In K. McCartney & D. Phillips (eds.), *Blackwell Handbook of Early Childhood Development* (pp. 274-294). Blackwell Publishing.

Tang, J. & Schwantes, M. (2021). International service-learning and intercultural competence of U.S. music therapists: Initial survey findings. *Nordic Journal of Music Therapy, 30*(4), 377-396. https://doi.org/10.1080/08098131.2020.1841822

Tapia, M. N. (2008). *La solidaridad como pedagogía*. Ed. Criterio.

Tejada, J. & Thayer, T. (2019). Design and validation of a music technology course for initial music teacher education based on the TPACK framework and the project-based learning approach. *Journal of Music Technology and Education, 12*(3), 225-246. https://doi.org/10.1386/jmte_00008_1

Thayer, T., Tejada, J. & Murillo, A. (2021). Technological training in secondary-school music teachers. An intervention-based study on the integration of musical, technological and

pedagogical contents at the University of Valencia. *Revista Electrónica Interuniversitaria de Formación del Profesorado, 24*(3), 1-20. https://doi.org/10.6018/reifop.442501

Tobias, E. S., Campbell, M. R. & Greco, P. (2015). Bringing curriculum to life: Enacting project-based learning in music programs. *Music Educators Journal*, *102*(2), 39-47. https://doi.org/10.1177/002743211560760

Torre, J. C. (2008). Estrategias para potenciar la autoeficacia y la autorregulación académica. En L. Prieto (coord.), *La enseñanza universitaria centrada en el aprendizaje* (pp. 61-90). Octaedro. http://diposit.ub.edu/dspace/bitstream/2445/143997/1/PRIETO_La-ensen%CC%83anza-universitaria-centrada-en-el-aprendizaje_p.pdf

UNESCO (2015). *2013 Asia-Pacific Education Research Institutes Network (ERI-Net) regional study on transversal competencies in education policy & practice.*.

UNESCO (2018). *Council recommendation on Key Competences for Lifelong Learning.* https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018SC0014

Walker, R. (2007). *Music education: Cultural values, social change and innovation.* Charles C Thomas Publisher.

White, A. (2001). *Meta-analysis of service-learning research in middle and high schools* (Tesis doctoral). Denton, University of North Texas. https://digitalcommons.unomaha.edu/slcedt/67/

Yardley, L. (2017). Demonstrating the validity of qualitative research. *Journal of Positive Psychology, 12*(3), 295-297. https://doi.org/10.1080/17439760.2016.1262624

Yob, I. M. (2000). A feeling for others: Music education and service learning. *Philosophy of Music Education Review*, *8*(2),67-78.

Yoo, H. & Kang, S. (2021). Teaching as Improvising: Preservice Music Teacher Field Experience With 21st-Century Skills Activities. *Journal of Music Teacher Education, 30*(3), 54-68. https://doi.org/10.1177/10570837211021373

Yorio, P. L. & Ye, F. (2012). A Meta-Analysis on the Effects of Service-Learning on the Social, Personal, and Cognitive Outcomes of Learning. *Academy of Management Learning &Education, 11*(1), pp. 9-27. https://doi.org/10.5465/amle.2010.0072

Zhang, S. (2022). Interactive environment for music education: developing certain thinking skills in a mobile or static interactive environment. *Interactive Learning Environments, 31*(10), 6856-6868. https://doi.org/10.1080/10494820.2022.2049826

Appendix

<p style="text-align:center">Table 1. Selected articles</p>

SL vs PBL	References	Research country-University-Participants	Procedures (intervention)	Methods/ assessed outcomes
1 S-L	Koops, A., 2022	USA/ Preservice music education students from brass and woodwind. Intervention (*n*=17)	Music composition projects were implemented in the coursework, which were linked to a SL experience by the students after being placed to work with middle-school band students in local schools.	Qualitative research/ *Instrument play skills, instrument teaching, faith integration.*
2 PBL	Rennoll, V. *et al.,* 2022	USA/ master's degree students. Intervention (n=11)	Students characterized a contact sensor with a polymer diaphragm for musical instrument recording. They completed literature review, planned the experiment, collected and analyzed data, and presented results.	Qualitative/ *Achievement of learning objectives.*
3 S-L	Cuervo, L., Arroyo, D. &Bonastre, C., Asencio, E., 2021	Spain/ Music teachers of the Faculty of Education. Intervention (*n*=93)	Preservice music teachers develop music activities for children and bring them to hospitalized children.	Quantitative evaluative research, quasi-experimental design with control group non-equivalent/ *Learning strategies and knowledge acquisition.*
4 PBL	Iglesias, P. & Ribera, L., 2021	Chile/ Teacher of the pedagogical career in musical arts. Intervention (*n*=12)	Group work on the problems of online teaching and the integration of technology in face-to-face contexts, taking into account PBL.	Case study/ *Teaching difficulties, effectiveness, and projection of online teaching in Music.*
5 S-L	Parejo J. L., Cortón, M.O., de la & Giráldez, A., 2021	Spain/ Preservice music teachers. Intervention (*n*=60)	Preservice music teachers interacted in seven primary schools in the context of a SL experience to make recess breaks more dynamic for a total of 525 students aged 6-12.	Qualitative research/ *Preservice teachers´ civic and social skills, as well as the impact of professional training.*
6 S-L	Tang, J. & Schwantes, M., 2021	USA/ Music Therapy Scholars. Intervention (*n*=409)	Music therapy scholars participating in a International SL experience were asked to outline their perceptions to intercultural competence achievement.	Quantitative study/ *Intercultural competence*
7 PBL	Thayer, T.; Tejada, J. & Murillo, A., 2021	Spain and Chile/ master´s degree students.in teacher training. Intervention (*n*=81)	Three work projects were implemented, each integrating three types of content (TPCK) for the creation of digital materials for the teaching of instrumental music in the secondary school classroom.	Mix-method. Descriptive-exploratory design/ *Technological training, auto-perception of technological skills in teaching settings.*
8 PBL	Yoo, K. & Kang, S., 2021	USA - Preservice music teachers. Intervention (*n*=10)	Over 8 weeks learning, 10 preservice music teachers designed lesson plans focused on creativity, critical thinking, communication, and collaboration, and peer taught their lessons in an elementary music methods class.	Case study/ *Partnership, innovation skills.*

SL vs PBL	References	Research country- University- Participants	Procedures (intervention)	Methods/ assessed outcomes
9 PBL	Akkapram, P., 2020	Thailand - Students from the Faculty of Fine and Applied Arts. Intervention (*n*=6)	Puppet performance by university students working with local artists in northeastern Thailand, the project inspired many other groups interested in making puppet performances by collaborating with local artists in Isan communities. Transdisciplinary approach.	Qualitative research/ *new creative teaching methods such as community-based learning. Development of individual and collective skills to solve problems. Behaviors and knowledge on a specific sociocultural context.*
10 S-L	Baughman, M., 2020	USA/ Two junior-level music education majors and two children's chorus conductors. (*n*=4)	Two interns assisted in teaching a weekly, 60-minute choral rehearsal for 10 consecutive weeks.	Qualitative research/ *Teaching skills in an authentic context*
11 PBL	Berrón, E. & Monreal, I., 2020	Spain/ Preservice teacher. Intervention (*n*=76)	Music activities were developed by preservice music teacher to be implemented in Primary School. 3 musical projects in each group along 3 weeks.	Case study/*Students perception on PBL development.*
12 S-L	Gubner, J., Smith, A. & Allison, T., 2020	USA/ Undergraduate music students. Intervention (*n*=52)	An undergraduate curriculum course brought students to meet with persons with dementia in dementia care settings. Transdisciplinary approach.	Qualitative study/ *Transformation of student perception about dementia and engagement in dementia care.*
13 PBL	Sefton, T., Smith, K. &Tousignant, W. 2020	USA/ Preservice teacher. Intervention (*n*=not provided)	Preservice teachers created an animation project while applying curriculum expectations in three subject areas: visual arts, music, and language arts. Transdisciplinary approach.	Case study/ *Transdisciplinary work.*
14 PBL	Tejada, J. & Thayer, M., 2019	Spain/ Preservice music teacher. Intervention (*n*=46)	The course saw students carry out four real-life projects, three of which involved the elaboration of educational material through the exclusive use of musical technology, and one of which involved an ICT research project. The course was implemented along 2 years.	Case study/ *Literacy on Music Technology.*
15 S-L	Forrester, S.H., 2019	USA/ Preservice Music Teacher. Intervention (*n*=4)	An orchestration course lead by preservice music teacher.	Collective case study/ *Challenges during the experience and perceptions about the program.*
16 S-L	Gillanders, C., Cores, A. & Tojeiro L., 2018	Spain/ Preservice music teacher. Intervention (*n*=30)	Preservice teachers lead music workshops in rural sociocultural premises for aged 6 to 10 years.	Case study/ *Professional skills development.*
17 PBL	Berbel, N., Jaume, M. & Rovira, M. D,, 2017	Spain/ Degree students. Intervention (*n*=148)	Students translated research into practice through life story experiences linked with emotions. Transdisciplinary approach	Qualitative research/ *Emotions*

SL vs PBL	References	Research country- University- Participants	Procedures (intervention)	Methods/ assessed outcomes
18 S-L	Harrop-Allin, S., 2017	Africa - University of Johannesburg community music students. Intervention (*n*=10)	Students' learning in a pilot project located in Limpopo province in South Africa are involved in community music practice. They stay for 3 nights there and deliver workshops to address aspects of the Life Skills with groups of 20-30 children in grades 6-7 using the power of music.	Case study. Focus group, academic essays/ *Music students´ learning, social responsiveness and responsibility.*
19 S-L	Pike, P., 2017	USA/ Graduate pedagogy interns. Intervention (*n*=3)	Three pedagogy interns taught beginning piano to underprivileged teenaged students for 8 weeks.	Case study/*Online teaching skills, knowledge about distance teaching technology*
20 S-L	Bartolome, S., 2017	USA/ Preservice and first-Year music educators. Intervention (*n*=9)	Students in a music teacher preparation SL program (one semester long) participated in the music activities at a local public preschool for children with and without disabilities.	A collective case study of longitudinal nature/ *Students´perceptions of fieldwork, self-reflection skills.*
21 S-L	Bartleet, B.-L., Sunderland, N. & Carfoot, G., 2016	Australia / Undergraduate students from the Queensland Conservatorium Griffith University. Intervention (*n*=5)	Five undergraduates are involved in an intercultural SL program in an Aboriginal environment.	Collaborative reflective thematic analysis. Ethnographic study/ *Intercultural engagement.*
22 S-L	Feen-Calligan, H. & Matthews, W.K., 2016	USA/ Art therapy and undergraduate music education students. Intervention (*n*=15)	undergraduate music teacher-candidates taught music to homeschool students aged 9-13. Likewise, art therapy graduate students worked at community centers or other agencies. Approximately 20 children participated in each of the two sections and came to the university once per week for six weeks. Transdisciplinary approach.	Qualitative study/ *Personal attitudes and professional skills.*
23 S-L	Nichols, J. & Sullivan, B. M., 2016	USA – Preservice music teacher. Intervention (*n*=6)	Critical SL in a juvenile detention center. Participants in the project designed and facilitated music and arts experiences with the incarcerated youth once per week over an entire semester.	Case study/ *Awareness of the sociocultural system, beliefs about their community.*
24 PBL	Cayari, C., 2015	USA/ Undergraduate music education students. Intervention (*n*=36)	Informal music learning through video creation in the curriculum.	Mix method/ *Assess music video creation to facilitate informal music learning through technology.*

SL vs PBL	References	Research country-University-Participants	Procedures (intervention)	Methods/ assessed outcomes
25 S-L	Menard, E. A. & Rosen, R., 2014	USA/ Preservice educators (n = 6), music performance (n = 2), and Bachelor of Arts in music (n = 2). Intervention (*n*=10)	Preservice Music Teacher mentored young fourth and fifth grade students enrolled in a composition instruction program run by the New York Philarmonic.	An exploratory case study/ *Perceptions for use of composition instruction in future teaching, perceptions of composition instruction during the experience.*
26 PBL	Smarkusky, D. & Toman, S., 2014	USA/ Undergraduate Music and Computer course (IST) students. Intervention (*n*=27)	Transdisciplinary project between IST majors rolled in a Distributed Computing course and students from various majors enrolled in a Music Theory course.	Qualitative/ *Team skills, student appreciation (motivation) towards learning.*
27 S-L	Bartleet, B.L. & Carfoot, G., 2013	Australia/ Students from Queensland Conservatorium Griffith University. Intervention (*n*=30)	Collaborations between universities and Indigenous communities evolving a four-year partnership between Australian Indigenous musicians at the Winanjjikari Music Centre in Tennant Creek and music students from Queensland Conservatorium Griffith University,	Qualitative study/ *Intercultural experience, transformation of understanding of other culture.*
28 S-L	Power, A., 2013	Australia/ Preservice Teacher. Intervention (*n*=1)	Preservice teacher are involved in an international SL experience.	Case study/ *The impact reflection on SL program has on future teachers.*
29 S-L	Bartolome, S., 2013	USA/ Preservice music teacher. Intervention (*n*=18)	Attending weekly class meetings, students provided 30 minutes a week of classroom support for teachers at a preschool center serving students with and without disabilities.	Case study/ *Learning and personal growth.*

Resumen

Metodologías Aprendizaje-Servicio y Aprendizaje Basado en Proyectos en Educación Musical Superior: una revisión de la literatura

INTRODUCCIÓN. La investigación reciente señala el potencial del aprendizaje multidimensional y holístico en el proceso de transformación educativa, en la prestación de servicios sociales desde la universidad y en el desarrollo de la identidad profesional. Este artículo tiene como objetivo analizar la relación entre las metodologías de Aprendizaje-Servicio y Aprendizaje Basado en Proyectos en la educación musical superior y la adquisición de competencias transversales. **MÉTODO.** Se realizó una revisión de 29 artículos sobre ambas metodologías en la educación musical superior, publicados entre 2012 y 2022. Los artículos fueron seleccionados de las bases de datos WoS, Scopus y ERIC. Se exploraron cuatro categorías: (1) interacción social, (2) crecimiento personal, (3) aprendizaje académico y (4) desafíos relacionados con la implementación y contextualización de las metodologías. **RESULTADOS.** Los resultados muestran que, en el contexto de la educación musical superior, ambas metodologías tienen un impacto potencialmente positivo en el desarrollo de competencias transversales en los estudiantes. La revisión muestra beneficios en aspectos sociales como el desarrollo de la responsabilidad cívica y las habilidades de comunicación entre pares y profesores; aspectos académicos como la adaptación a entornos de aprendizaje complejos, objetivos mutuamente beneficiosos y autoridad compartida; y aspectos de desarrollo personal como la flexibilidad, la solidaridad y el respeto. A su vez, muestra que la práctica reflexiva contribuye a desarrollar la apertura de los estudiantes a la crítica constructiva, lo cual se percibe como una contribución positiva al aprendizaje. **CONCLUSIONES.** Las metodologías estudiadas pueden fomentar el crecimiento personal de los estudiantes, la mitigación de sus sesgos en el aula y la apreciación reflexiva y consciente de su propio aprendizaje. Se deben tener en cuenta los desafíos relacionados con la complejidad de ajustar los proyectos al currículo académico y a las necesidades de la comunidad, así como la gran cantidad de tiempo y esfuerzo requeridos para el proceso. Finalmente, se alienta a realizar más investigaciones utilizando diferentes términos de búsqueda y criterios para lograr una comprensión más amplia de cómo se pueden diseñar e implementar iniciativas musicales a través de estas metodologías, la proyección que pueden tener y cómo se realiza la investigación en este campo.

Palabras clave: *Educación musical, Método de enseñanza, Aprendizaje-Servicio, Aprendizaje Basado en Proyectos.*

Résumé

Méthodologies d'apprentissage par le service et par le projet dans l'enseignement musical supérieur : une revue de la littérature

INTRODUCTION. Des recherches récentes soulignent le potentiel de l'apprentissage multidimensionnel et holistique dans le processus de transformation éducative, dans la prestation de services sociaux par l'université et dans le développement de l'identité professionnelle. Cet article vise à analyser la relation entre les méthodologies d'Apprentissage par le Service et d'Apprentissage par Projet dans l'enseignement supérieur de la musique et l'acquisition de

compétences transversales. **MÉTHODE.** Une revue de 29 articles sur les deux méthodologies dans l'enseignement supérieur de la musique, publiés entre 2012 et 2022, a été réalisée. Les articles ont été sélectionnés dans les bases de données WoS, Scopus et ERIC. Quatre catégories ont été explorées : (1) interaction sociale, (2) croissance personnelle, (3) apprentissage académique et (4) défis liés à la mise en œuvre et à la contextualisation des méthodologies. **RÉSULTATS.** Les résultats montrent que, dans le contexte de l'enseignement supérieur de la musique, les deux méthodologies ont un impact potentiellement positif sur le développement des compétences transversales chez les étudiants. La revue montre des bénéfices dans des aspects sociaux tels que le développement de la responsabilité civique et des compétences de communication entre pairs et enseignants ; des aspects académiques tels que l'adaptation à des environnements d'apprentissage complexes, des objectifs mutuellement bénéfiques et une autorité partagée ; et des aspects de développement personnel tels que la flexibilité, la solidarité et le respect. La revue montre également que la pratique réflexive contribue à développer l'ouverture des étudiants à la critique constructive, ce qui est perçu comme une contribution positive à l'apprentissage. **CONCLUSIONS.** Les méthodologies étudiées peuvent favoriser la croissance personnelle des étudiants, la réduction de leurs biais en classe et l'appréciation réflexive et consciente de leur propre apprentissage. Il faut prendre en compte les défis liés à la complexité de l'ajustement des projets au curriculum académique et aux besoins de la communauté, ainsi que la grande quantité de temps et d'efforts nécessaires pour le processus. Enfin, des recherches supplémentaires utilisant différents termes de recherche et critères sont encouragées pour obtenir une compréhension plus large de la manière dont les initiatives musicales peuvent être conçues et mises en œuvre à travers ces méthodologies, la projection qu'elles peuvent avoir et comment la recherche est menée dans ce domaine.

Mots-clés : *Éducation musicale, Méthode d'enseignement, Apprentissage par le service, Apprentissage par projet.*

Perfil profesional de los autores

Laura Cuervo-Calvo (corresponding autor)

Permanent Lecturer at the Complutense University of Madrid. Her lines of research focus on Music Education, and Service-Learning teaching Methodology. Her research findings have been published in journals such as *Music Education Research, Revista Española de Pedagogía, Quality & Quantity, Psychology of Music*, or *Research Studies in Music Education*, as well as books and book chapters in prestigious publishing houses, such as Dykinson and Routledge. She is currently member of editorial Board of the *Revista Electrónica Complutense de Investigación en Educación Musical.*
ORCID http://orcid.org/0000-0001-7577-202X
E-mail: lcuervo@ucm.es

Alberto Cabedo-Mas

Associate Professor of Music Education at the University Jaume I of Castellón, Spain. He studied violin at the Music Conservatory in Castellón and completed a Master's degree in Music at the Estonian Academy of Music and Theatre, Tallinn, and a Master's degree in Peace Studies, Conflict

and Development at the University Jaume I, where he later obtained his PhD. He is author of several articles and chapters in international and national books and refereed journals. He is Co-director of the journal *Eufonía: Didáctica de la Música,* Associate editor of the Journal of the Study of Education and Development, and serves as editorial board member in national and international journals. His research interests include music education, coexistence, community music, interculturality and the transmission of music across cultures.

ORCID http://orcid.org/0000-0002-3703-3848
E-mail: cabedoa@uji.es