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Music education for future teachers: communication through visual art in the evaluative tool portfolio

Educação musical para futuros professores: a comunicação por meio da arte visual no portfólio como ferramenta avaliativa

Verónica Asensio Arjona[1]
veronica.asensio@ub.edu

Marta Casals-Balaguer[1]

Sandra Soler Campo[1]

[1] University of Barcelona, Department of Applied Didactics, Barcelona, Spain

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ABSTRACT: This article examines the role of the digital portfolio as a reflective tool for promoting visual and communicative art in the study of music didactics for future teachers. At the end of the academic year, students present their portfolio, which include reflections and graphic representations. The study analyses the portfolios of 90 students enrolled in a bachelor's degree in early childhood education at University of Barcelona. The findings highlight that graphic resources are used as a means of communication, supporting teaching, and learning processes in music education. Various types of graphic resources are employed, and art contributes to both the personal and professional development of students. We conclude that arts-based methods are a powerful communication tool and, in the context analyzed, they foster students' recognition, reflection, and the development of cognitive and linguistic abilities related to music practice and its didactics.
KEYWORDS: Music education; Portfolio; Evaluation; Reflective practice.

RESUMO: Este artigo examina o papel do portfólio digital como ferramenta de reflexão, promovendo a arte visual e comunicativa no estudo da didática da música para futuros professores. Ao final do ano letivo, os estudantes apresentam seus portfólios, que incluem reflexões e representações gráficas. O estudo analisa os portfólios de 90 alunos matriculados no curso de Licenciatura em Educação Infantil da Universidade de Barcelona. Os resultados destacam o uso de recursos gráficos como meio de comunicação, apoiando os processos de ensino e aprendizagem na educação musical. Diversos tipos de recursos visuais são empregados, e a arte contribui para o desenvolvimento pessoal e profissional dos estudantes. Concluímos que os métodos baseados nas artes constituem uma poderosa ferramenta de comunicação e, no contexto analisado, promovem o reconhecimento, a reflexão e o desenvolvimento de habilidades cognitivas e linguísticas dos alunos, relacionadas à prática musical e à sua didática.
PALAVRAS-CHAVE: Educação musical; Portfólio; Avaliação; Prática reflexiva.

1. Introduction

In the 21st century, graphic representations are everywhere and are strongly represented in our daily lives. Although visual images are sometimes exclusionary, they also help us to understand and relate to our immediate environment and to other people. Furthermore, they allow us to express ourselves, to reflect, and, consequently, to learn. Arts education, therefore, is of vital importance in the training of future teachers. It is based on an understanding of art as a channel for creativity, expression, and communication (Merlos, 2021). The benefits of the arts have been the subject of study for decades (Lazarín *et al.,* 2023). Among its virtues, arts education, and the arts themselves promote spaces in which innate ideas can relate to emotions without the need to use words. The promotion of these synergies makes it possible to approach life situations from different perspectives, activating reflection and creativity (McKay and Sappa, 2019). This process is similar to the creative process involved in the production of both music and painting (Pardo, 2023). Some examples of that are the artists Tàpies or Kandinski. Tàpies (2003) uses music listening and the study of composers as a source of inspiration to express their emotions in textures and colors. On the other hand, Kandinsky (1989) reduced this parallelism between music and painting to common vibrations.

How we include artistic, visual, and audio-visual representations in classroom practices is a complex process. It is important to analyze the influence of including these representations in the teaching–learning process. The study that is presented departs from this initial question: Can methods and visual recording tools communicate the reflective learning processes of diverse subjects? Methods are relevant and useful in enabling the production of knowledge. Therefore, it is essential to investigate methods that do not merely reproduce hegemonic discourses but introduce multiple ways to discover new ideas (Denzin, 2012). Using visual arts examples in educational research and related fields in the social sciences is important for us. For example, Danielsson and Berge's article (2020) is an example of a video diary-based study. In it, the research participants recorded themselves and were offered an unconstrained space in which to share their narratives. The use of this method allowed participants to take greater responsibility for their learning process by sharing their reflections on the process. Narratives are not simply stories that convey something but rather 'interpretive devices' through which learners make sense of their world (Lawler, 2002).

The research that we present focuses on students enrolled in the bachelor's degree in early childhood education at University of Barcelona. In the subject 'Didactics of Music', the students must create a digital portfolio that presents their reflection on the learning process they experienced throughout the academic year in relation to the teaching profession and the specific skills they acquired. The main objective of this research is, on the one hand, to explore the benefits that the digital portfolio brings to the teaching process for students of early childhood education. On the other hand, the research aims to present the graphic evidence students produced. This evidence shows the content students learned in the subject. This graphic evidence is a tool for communication and reflection on the subject. To achieve these objectives, the following research question was posed: Is the digital portfolio an optimal tool through which students can express the knowledge and learning they are acquiring through graphic art?

2. Theoretical framework

In the field of education, arts-based educational research (ABER) emerged from the work of scholars such as Eisner (1991), who proposed integrating artistic practices into educational inquiry in order to expand

traditional forms of research. From this perspective, artistic production is not only an object of study but also a methodological resource that can generate knowledge about educational experiences. Rather than relying exclusively on discursive forms of data, ABER incorporates artistic representations—such as visual, performative, or musical expressions—as ways of exploring and communicating meaning (Knowles and Cole, 2008; Leavy, 2018). In educational contexts, this approach makes it possible to access dimensions of experience that may be difficult to express through conventional academic language (Hernández, 2008).

Arts-based methodologies have been increasingly used in educational research as a way of complementing more traditional approaches. By incorporating artistic processes and artifacts into research design, they enable researchers to examine experiences, perceptions, and interpretations through symbolic and creative forms of expression (Hjørnegaard, 2020). As Patton (2020) notes, artistic approaches can facilitate access to what has been described as "knowledge without words", allowing participants to communicate ideas and emotions that may remain implicit in purely verbal accounts. Within ABER, visual artifacts such as drawings, photographs, and other forms of visual composition are often used as sources of data. These visual elements allow participants to represent experiences, reflections, and interpretations in ways that go beyond written language (Avraamidou, 2020). In many cases, visual and textual elements operate together, creating multimodal forms of meaning-making in which images complement and expand the written narrative (Brooks et al., 2019). This multimodal dimension is particularly relevant in educational contexts where reflection on learning processes plays an important role.

In teacher education, arts-based approaches have been used to explore how future teachers interpret their learning experiences and construct meanings about their professional development. Techniques such as drawing, collage, and photography allow participants to externalize reflections and communicate aspects of their learning that may not emerge through written reflection alone (Gouzouasis et al., 2013; Culshaw, 2019). Research in higher education contexts has shown that these methods can deepen reflective processes and encourage students to examine their educational experiences from different perspectives (Bertling, 2017). Within this context, reflective portfolios have become a widely used pedagogical tool in higher education. Portfolios provide students with a space to document their learning processes, connect theoretical knowledge with practice, and articulate personal reflections on their experiences. When portfolios include visual elements—such as photographs of activities or artistic representations—they become multimodal artifacts that combine narrative reflection with symbolic representation (Lazarín et al., 2023). These multimodal forms of expression allow students to communicate their interpretations of learning experiences through different semiotic resources.

In the specific field of music education, reflection on musical experience is considered an important component of teacher development. Swanwick (1999) emphasizes that musical learning involves processes of interpretation and meaning-making that extend beyond the acquisition of technical knowledge. For pre-service teachers, reflecting on their musical experiences and learning processes can help them to develop a deeper understanding of how music can be taught and experienced in educational settings. Artistic and visual representations may therefore serve as valuable tools through which students interpret and communicate their perspectives on music teaching and learning.

From this perspective, the visual representations included in reflective portfolios can provide insight into how future teachers conceptualize their experiences in music education. Photographs of learning activities

or visual interpretations of assessment tasks allow students to represent their understanding of classroom experiences and pedagogical processes. These images, together with the accompanying written reflections, offer a richer understanding of how students interpret their learning and how they envision the application of these experiences in their future teaching practice.

Building on these perspectives, the present study approaches students' portfolios as multimodal reflective artifacts in which visual elements function as arts-based representations of learning experiences. The analysis focuses specifically on the visual components included in the portfolios and examines how these images communicate pedagogical meanings related to the assessment tasks developed in the course.

3. Methods

This study adopted a qualitative research design grounded in arts-based research from an artistic and interpretive perspective (Hernández, 2008). The data source consisted of reflective portfolios produced by students enrolled in the compulsory course 'Didactics of Music', taught during the third academic year of the bachelor's degree in early childhood education. In this subject, students are required to reflect on the teaching–learning processes experienced throughout the course. Their reflections address, first, a general overview of the subject and how the learning acquired may inform their future teaching practice, and second, a more specific reflection on the different assessment tasks carried out during the academic year, including the applicability of the resources, methodologies, and teaching strategies introduced in the course.

The portfolio is a free-format reflective tool structured into four sections:

- Section 1: Students provide a personal presentation in which they explain, among other aspects, their motivations for choosing a career in education.
- Section 2: Students reflect on music education and construct a musical timeline that includes songs that have accompanied them at different stages of their lives.
- Section 3: This section, which constitutes the focus of the present study, contains students' reflections on the different assessment tasks completed in the course. Students describe what they learned from these tasks, the main difficulties they encountered, and the pedagogical value they attribute to them. They also include photographs or visual representations documenting the preparation process of the tasks, together with reflections on the process, the results obtained, and the potential application of these activities in their future teaching practice.
- Section 4: Students present final reflections on their overall learning experience in the course and list the main resources used throughout the academic year.

The portfolio is conceptualized in this study primarily as a multimodal reflective practice through which students represent and interpret their learning experiences. The combination of written narratives and visual elements allows students to articulate pedagogical meanings using multiple semiotic resources. In this sense, the portfolio is also approached as a semiotic artifact, where images function as communicative elements that complement and extend the written reflection. Within the context of the course, the portfolio additionally operates as a pedagogical assessment device designed to support reflective learning and the development of future teaching perspectives.

The potential sample consisted of 90 portfolios produced by students enrolled in the course during the 2021–2022 and 2022–2023 academic years. From this corpus, 10 visuals were selected through purposive sampling. The selection sought to identify visuals that were particularly illustrative of how students visually represented their learning processes and pedagogical reflections. Rather than aiming for statistical representativeness, the selection prioritized analytical richness and diversity of visual expression, including both photographs and illustrations. This strategy is consistent with qualitative and arts-based research traditions, which emphasize the interpretive depth of selected artefacts. The selected visuals were drawn from different portfolios and reflected variation in format, thematic focus, and narrative function within the portfolios.

The analytical procedure followed an iterative visual content analysis. First, the selected visuals were examined independently to identify their formal characteristics and the meanings they conveyed in relation to the accompanying written reflections. Second, a coding scheme was developed inductively through repeated examination of the images. The analysis focused on three analytical dimensions:

a) format (illustration or photography);

b) conceptual meaning, referring to the pedagogical or experiential idea communicated by the visual representation; and

c) narrative position, referring to the role and placement of the visual within the structure of the portfolio and its relationship with the written reflection.

Coding was conducted through successive rounds of comparison across the selected visuals in order to identify recurring themes and interpretative patterns. Interpretations were refined through iterative reading of both the images and the associated textual reflections to ensure coherence between visual and narrative meanings.

Finally, researcher reflexivity was considered during the interpretive process. As the researcher is also situated within the field of music education, particular attention was paid to critically examining how prior pedagogical knowledge and expectations might shape the interpretation of the visual materials. To mitigate potential bias, interpretations were grounded in the visual evidence and the students' written reflections accompanying each image.

4. Results

The body of reflection of the selected portfolios is made up of reflective artistic evidence. In the graphic evidence, we find two main types of visual productions that accompany and/or form part of the reflective content of the portfolios. On the one hand, a multitude of illustrations and collages appear. Students used digital platforms such as Canva to source or create templates with graphic elements and illustrations, and, in many cases, they edited and modified the templates obtained. Likewise, they included drawings and images of music-related items, such as instruments and musical notes, to capture the reflection or sample of the desired content. Some of the illustrations used are from recognized authors, but the vast majority are visual material that has been copied or downloaded from online image banks, some of them with a Creative Commons license. On the other hand, photographs were also used. In most of the cases analyzed, the

portfolios presented photographs of unknown or unrecognized authorship, generally from online image banks, although in some cases students included photographs, they had taken themselves.

The frequent use of images taken from online image banks also invites reflection on the type of artistic expression present in the portfolios. Although arts-based educational research often emphasizes the creation of original artistic work, in this case students commonly relied on existing visual materials rather than producing their own drawings or photographs. However, the reflective value of these images does not necessarily lie in their originality, but in how students select, combine, and interpret them within the portfolio. In many cases, the images function as symbolic references that help students express their understanding of music education, especially when they are accompanied by written reflections that clarify their pedagogical meaning.

In both forms of visual support, photographs or illustrations and collages, we can identify typical elements or characterizations that connect to the thematic domains of the 'Didactics of Music' subject and the teaching profession, such as perspectives on childhood and interpretations of didactics and the teaching and learning process. Students also included narrative evidence before and/or after these visual artistic representations that complete the reflective proposal.

This section is structured as follows. First, the portfolio as a learning tool is analyzed (4.1). Second, it is presented the analysis of the images created and used in portfolios to illustrate the following concepts: early childhood Music didactics (4.2); Music as a learning tool and the benefits of Music (4.3).

4.1. The portfolio as an artistic communicative tool

Technology has potential applications in different aspects of musical education, but especially for the development of transversal skills that go beyond the curricular content of the discipline (Marín *et al.* 2022). Current trends in educational technology indicate a shift in pedagogical assumptions and theoretical frameworks away from traditional methods in which the teacher shares knowledge of the subject with students and towards the active participation of students (Castañeda, 2021).

The portfolio as a tool emerged in the United States in the 1970s (Salazar and Arévalo, 2019). This instrument enables reflection on progress, academic processes, and the results of student learning (Arís and Fuentes, 2016), as well as presentation of the results of a task, which is oriented not towards the process but to the product evidence. As the student or teacher reaches a more critical level of reflection, their motivation to apply appropriate practices in the classroom may increase (Ribeiro and Mariho da Silva, 2022). Therefore, reflection must be done and reviewed continuously (Binh, 2021). In the study of Calderón et al. (2023), among the 32 articles that are analyzed in the systematic review it is highlighted that teacher-student interactions are enhanced to encourage this reflection process and it allows users to develop their artistic and professional identity, creativity, metacognition and self-regulation of the teaching and learning process (Calderón et al., 2023).

In higher education, the context in which this research was conducted, the portfolio plays an important role. On the one hand, it improves the teaching, learning, and evaluation process of students, and, on the other, it supports the teacher's practice. Even so, at Spanish universities, the teaching plans for music subjects in the degrees of teacher in early childhood education, primary education, and double degree in early and primary education reflect very little training in this area (Calderón et al., 2021). However, it should be noted

that at University of Barcelona the digital portfolio is a tool that has been used and positively valued (both by students and teachers) for more than a decade in subjects such as 'Didactics of Music', Practicum I or Practicum II of the primary education degree (González et al., 2011). Moreover, in the field of artistic education such as Music Didactics, context of this study, its application is very interesting due to its multimodality. It conveys image, text, video, sound, etc. (Calderón et al., 2023).

4.2. Reflection through images

The images presented below illustrate different approaches to the concept of childhood and didactics related to musical practice. In the first three images that appear below we can see, on the one hand, two drawings (Figure 1 and Figure 2), which are repeated in terms of style and similar content throughout the portfolios, and which represent boys and girls of around 4–5 years of age. On the other hand, we see a photograph (Figure 3) of two children of about 6–7 years old. At the same time, similar visual motifs appear repeatedly across many of the portfolios. Images of smiling children, group music-making, or attentive classroom scenes are particularly common. Rather than documenting specific classroom situations, these images seem to reflect widely shared ideas about childhood and music learning that circulate through educational materials and digital media. Their recurrence suggests that students often rely on familiar visual conventions when representing what they understand music teaching and learning to be.

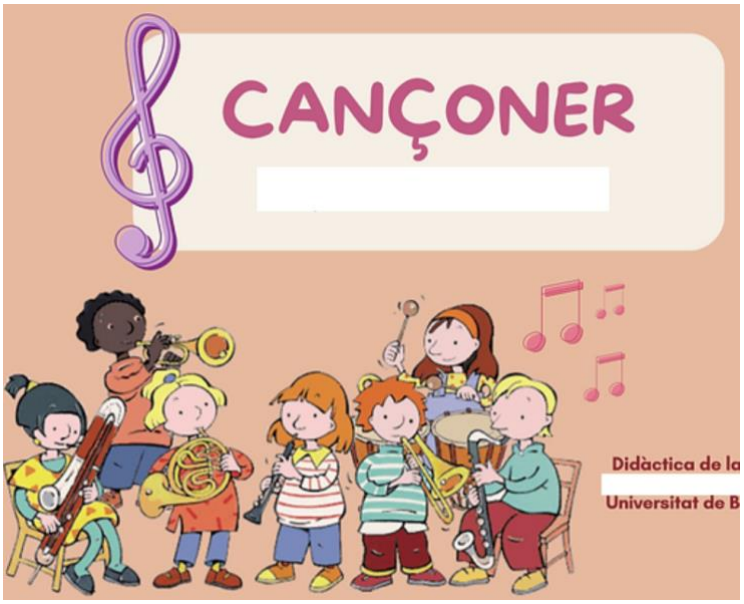


Figure 1 – Illustration used in the student's portfolio

The students' relation of music to group practice, or simply their foregrounding of learning music in a group, reflects an awareness of the benefits of collaborative artistic practice for creating a feeling of community, in this case of what would become a group-class of the early childhood education stage. One student commented, '(Music) makes us connect with other people and create bonds, for example, if we sing, dance, or simply share a song that we like' (personal communication, Student 35, 2024). It highlights the bond that is formed between different people when they perform music together, whether an improvised piece or an existing song, which various studies have shown to foster cohesion (González, 2008). In this case, then, the choice of images brings us closer to a common understanding, shared among several students, about what it means to make music in group, especially a group of boys and girls, and the emotions that emerge among the group members.



Figure 2 – Illustration used in the student's portfolio

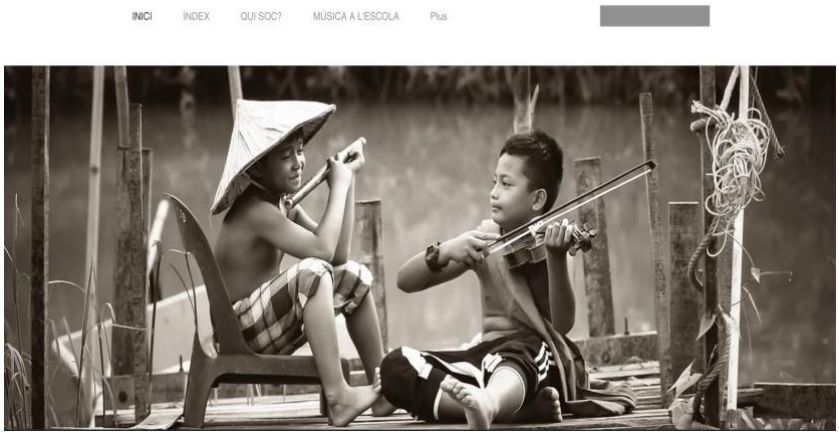


Figure 3. Original photograph by Pok Rie, used in the student's portfolio

In the reflections on the evaluative tasks completed in the subject – especially those tasks that involved designing and proposing activities to make music in the early childhood education classroom – most accompanying images presented a concept of childhood that conveys one of the great challenges of education. This challenge is to ensure that the individual learning processes that each child experiences and that in turn motivate a common purpose for the entire group-class (a collaborative work) (Luce, 2001) encourage connections between the children and foster a feeling of belonging. In Figure 2, for example, we observe three children each developing an instrumental and/or vocal practice: one child playing the guitar, another singing, and a third playing the violin. Through their gaze or facial expression, they show a certain degree of connection and enjoyment of the common musical action they are performing.

In the following three visual examples (Figure 4, 5 and 6), representations of the group-class model appear. They depict a teacher leading a musical activity and presenting herself as a model and guide of musical practice. In all the illustrations, we can see a group of students attending to the teacher's indications. The teacher retains the children's attention using different visual, sound, or movement stimuli. Figure 4 shows a collage of illustrations sourced, like most of the other drawings, from online image banks. We find in it two drawings of teachers playing the guitar and three drawings of teachers telling a story. Figure 5 presents the

figure of a teacher with her arm and hand raised and children imitating her, which could be the interpretation of a choreographed song.



Figure 4 – Collage of illustrations from the student's portfolio

Furthermore, in the specific case of Figure 5, the student chose this drawing to reflect on an evaluative task that they had completed as part of the university subject, which consisted of learning the methodology of teaching a song. This evaluation technique emphasizes gaining practical teaching knowledge on the competency strategy itself (García *et al.,* 2008). In this way, the student chose an image that represents the implementation of said methodology, not only because of the characters that appear in it (a teacher and three children) but because it incorporates gesture and expression, so necessary in the stage of early childhood education.



Figure 5 – Illustration used in the student's portfolio

Finally, in Figure 6, we see an illustration by a recognized author, Joan Turu, an artist who is closely linked to the educational world and who in recent years has produced and/or illustrated various editorial and informative productions on the rights of children and girls, the role of the school, and the value of teaching. The illustration in Figure 6 shows a group of students. Each of them either has an instrument or a music player or is walking around an adult who is playing the role of music teacher. The written message that accompanies the illustration, *Amb la musica, fem escola!* ('With music, we make school!'), reinforces the

community-generating potential that music has in school contexts, as well as inclusion and expressiveness in all its senses.



Figure 6 – Original illustration by Joan Turu used in the student's portfolio

Following this line, we find the following reflection from a student: 'The subject "Music Teaching" has helped me understand that music goes far beyond just teaching songs. It is a very powerful tool in education that can transform lives' (personal communication, Student 70, 2024).

4.3. Reflections on music education through the visual and the reflective

The analysis of the selected student portfolios provides a view of how future educators engage with music education not only as a disciplinary field but as a broader cultural, emotional, and pedagogical experience (Swanwick, 2001). The use of reflective artistic evidence, through images, collages, and photographs, functions as more than an illustrative tool. These visual elements act as vehicles of meaning, allowing students to explore and articulate complex ideas about teaching, childhood, and music in ways that written text alone may not fully capture.

Across the various portfolios, one of the clearest themes to emerge is the students' increasing awareness of music's role in building relationships and creating learning environments rooted in connection and collaboration. Many of the visual materials present children engaging in music-making activities that are clearly communal in nature, for example, singing together, playing instruments in small groups, or responding collectively to a teacher's guidance. Such representations suggest that students understand music as a social practice, one that not only transmits knowledge but cultivates belonging and mutual attentiveness in the early childhood classroom. Also, showing how students perceive the role of the teacher. Rather than positioning the teacher as a distant authority figure, many illustrations and reflections present the educator as an active participant in the learning process—someone who models, guides, and responds to children's musical explorations. Visuals showing teachers with instruments, leading movement, or storytelling with musical cues all point to a conception of pedagogy that is dynamic, embodied, and relational. These choices reveal an appreciation of music teaching, especially in early childhood contexts where gesture, tone, and presence are as important as the musical content itself.

A further point of interest is the representation of childhood. In both drawn and photographic imagery, children are typically shown as engaged, expressive, and confident in their musical activities. These

portrayals align with a view of children as capable and curious learners, rather than passive recipients of instruction. This emphasis reflects the students' developing understanding of child-centered educational approaches, where each learner's experience and perspective is acknowledged and valued. The decision to represent children in this way suggests a desire to create inclusive classroom environments in which all children can participate meaningfully in music learning.

Moreover, students connect the artistic elements of their portfolios with specific learning tasks, observations, or theoretical ideas encountered during the course. In doing so, they not only document what they have learned but begin to construct a professional identity grounded in reflective practice. Many of the reflections reveal a realization that music education extends well beyond the technical aspects of teaching songs or planning lessons. It involves the shaping of attitudes, the creation of emotionally resonant experiences, and the fostering of community. This synthesis of image and reflection also illustrates how students begin to make sense of music as an educational force and as a channel of interaction, expression, and discovery. The artistic choices they make, such as selecting specific illustrations to accompany a methodological reflection or using a photograph to explore group dynamics, show that students are learning how these forms relate to the pedagogical choices they will make as teachers.

The digital format of the portfolio also plays a role in shaping how students reflect on their learning. Platforms such as Canva give students easy access to templates, icons, and stock images, making it possible to create visual compositions even without specific artistic training. At the same time, these tools influence the kinds of images that tend to appear in the portfolios. Because ready-made visual elements are readily available, students often draw on familiar representations of childhood and music education. In this way, digital tools not only make visual expression easier, but also shape, in subtle ways, the visual language through which students express their reflections.

Furthermore, the digital portfolio format allows for this integration of artistic and reflective modes, offering students the flexibility to explore their ideas through a range of media. It provides a space where they can rehearse their understandings, experiment with ways of representing teaching and learning, and receive feedback that encourages further critical thinking. In this sense, the portfolio becomes not only a tool for assessment but a formative process in itself and an opportunity for students to encounter themselves as reflective, creative, and ethical practitioners.

In conclusion, the findings underscore the reflective portfolio's role in supporting the professional and pedagogical growth of prospective music educators and educators in general. Through the interplay of text and image, and the connection between theory and practice, students demonstrate an evolving understanding of music education as a field that is deeply relational, expressive, and human. The portfolios reveal more than individual achievement; they offer a view of how students are beginning to see their role as educators who will use music not only to teach, but to build communities, and create spaces of joy and belonging in the classroom.

While the portfolios show a meaningful level of reflection on music education, they also reveal how students' visual choices are influenced by the types of images that circulate widely in digital environments and educational materials. This suggests that the visual representations students use are shaped not only by their personal reflections but also by familiar visual conventions. In this sense, the portfolios highlight the complex

relationship between artistic expression, digital tools, and reflective practice in arts-based educational contexts.

5. Discussion and conclusions

The present study examined the possibilities offered by arts-based methods when producing qualitative empirical material in the field of education. This was achieved by analyzing the digital portfolios produced in the subject 'Didactics of Music', which forms part of the bachelor's degree in early childhood education. Using images, illustrations, collages, and photographs, students can go beyond the limitations of written language and more easily reflect on their learning (Lazarín *et al*., 2023). In addition, portfolios promote inclusion since they allow those with a speech and/or writing disability to express themselves. As Eisner (2008) explains, this fact challenges the idea of knowledge as something that can be reduced to rationality and language.

When working with arts-based methods, it is important to consider the dimension of time: time to reflect. To express their learning and stories through graphic arts, collected in this case in the digital portfolio, students need time to reflect on what they have learned, transforming the reflective process. In this sense, authors such as Ramón *et al.* (2021) affirm that the educational context is characterized by the ability of individuals working in this area to perform creative acts that help develop dynamics that respond to societal challenges. In the case of the digital portfolios analyzed in this study, the musical and didactic experience that the students lived throughout the subject is translated, in a digital and visual key, into a search for illustrations and photographs that represent their perspectives of childhood and the educational environment. As we have described in the analytical section, we observe the inclusion of images that show boys and girls participating in group musical practice, often with the teacher present as a model, which invites us to think about a musical artistic space that artistically encourages exchange and collaborative work.

However, we agree with the statement that, when something is created, the experience of reflecting is always present. Students must first think about the graphic element that represents what they have learned and then capture it in their portfolio (Ingram, 2011). Working through this method provides students with a space to connect with knowledge, memories, and perceptions and evoke their emotions and ability to feel and reflect. As Eisner (2008) points out, art helps us 'discover our inner landscape'. By reducing the use of words, we can release new narratives that might have been overlooked if oral or written language had been used. When this language is interrupted, an approach such as drawing, for example a self-portrait, offers participants a different means through which to express their ideas (Bagnoli, 2009). Furthermore, language needs a meaningful connection with the spoken word (Marín, 2011). Graphic representations overcome the limitations of language by moving between the known and the unknown. Nielsen (2021), in her work with students, showed how the visualization of abstract topics, such as the future, is made more accessible through graphic representations. Consequently, we can conclude that beyond language lies unexplored potential for students to express themselves and access the obvious and unnoticed in everyday life.

Arts-based qualitative methods have gained ground in research areas such as education, where they have proven vital in obtaining more information than can be gathered using more commonly used methods such as surveys and interviews (Brooks *et al.,* 2019). This study has shown that working with a digital portfolio fosters new ways of getting to know students by providing them with a space in which to share experiences and knowledge. The research conducted provides new knowledge about how students interpret the world,

and more specifically their views of childhood and music in education. Studies such as that of Salazar and Arévalo (2019), which analyzed 80 higher education portfolios produced between 2010 and 2018, conclude that the portfolio can contribute to effectively developing teaching, learning, and evaluation processes; encourage pedagogical reflection that allows progress to be made in the proposed training objectives; and promote the evolution of learning, the achievement of educational goals, and the development of reflective thinking, analysis, and elaborations that demonstrate the extent of an individual's experiential and critical learning (Salazar and Arévalo, 2019).

The literature reviewed suggests that the digital portfolio can be used as a means of formative assessment and, at the same time, of promoting professional development and better practice through reflection. It links students' creative thinking with their conceptual frameworks and establishes a process of inquiry through which they can map the learning processes experienced through their reflections and graphic representations. Alongside guided work, portfolio evaluation is valuable in the context of teacher training in higher education, as it offers new opportunities to support teaching and learning processes and also poses new challenges for the personal and professional development of students. Finally, as Hernández (2008) establishes, the stories must be characterized not so much by providing conclusions but by generating relevant questions regarding research methodology and education in general.

6. Declaration of interest statement

The authors report there are no competing interests to declare.

7. Data Availability Statement

The entire dataset generated or analyzed during this study is included in the published article.

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