



# Protocol for a scoping review on the contribution of music education to the development of the key competence in cultural awareness and expression in primary education

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## ABSTRACT

Music education in Primary Education in Spain is currently integrated into the curriculum with a focus on contributing to the development of key competences. One competence with a strong connection to the field of music is the key competence in cultural awareness and expression. However, this relationship is not adequately reflected in the interventions described in the available literature. This scoping review protocol aims to systematize information about the contributions of music education to the development of cultural awareness and expression competence. A systematic search of studies will be conducted in Scopus, Web of Science, ERIC, Google Scholar, and ProQuest, complemented by reference lists of identified studies. The review will follow the methodological recommendations proposed by the Joanna Briggs Institute (JBI) for scoping reviews and adhere to PRISMA guidelines. Literature review will be carried out by identifying population, concept, and context. For the extraction and analysis of qualitative studies, the SPIDER approach will be employed. This will be the first scoping review to explore how music education contributes to the development of the competence in cultural awareness and expression in Primary Education, potentially supporting cross-disciplinary educational practices that enhance competence development within music education.

## 1. Introduction

The impact of music on humans has been extensively studied from diverse perspectives, including well-being, health, cognition, and its transferability to other areas or social and personal contexts (Hallam & Himonides, 2022). Some authors focus on explaining the functioning of the human brain, highlighting music's critical role in evolutionary development, both for social cohesion and for the development of unique cognitive abilities (Koelsch & Skeie, 2020). Others identify various cognitive skills linked to general executive functions (Martin-Requejo & Santiago-Ramajo, 2021).

The literature indicates that music education has positive effects on individuals. Some studies highlight music's benefits on skills such as speech, listening, and reading (Patel, 2011), even if these transfers are modest (Neves et al., 2022; Swaminathan & Schellenberg, 2020), as well as in second language acquisition (Jekiel & Malarski, 2021). Other research examines the relationship between music and general academic

performance, mediated by sub-executive functions (Jaschke et al., 2018), describing modest cognitive and academic benefits (Román-Caballero et al., 2022).

### 1.1. Contribution of music education to key competences

Music education, in response to the educational demands of the 21st century, has begun adopting a competence-based approach to teaching (Hernández-Bravo et al., 2014), a trend firmly established internationally (López Rupérez, 2022). This approach transcends traditional content delivery, emphasizing new ways of learning (Olibie, 2013) aligned with the challenges of modern society (Aguar Perera et al., 2023). Its primary objective is to equip students with skills that enable them to succeed professionally and personally (Bueno, 2022), while adapting to the constant changes and challenges of society (González-Salamanca et al., 2020; Sala et al., 2020; Sanz Leal et al., 2022).

This educational perspective stems from needs highlighted in the

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Report of the International Commission on Education for the Twenty-First Century (Delors, 1996) and the OECD Program Definition and Selection of Competencies (DeSeCo) project (Rychen & Salganik, 2001), among others, which identified the necessity to prepare citizens to meet the demands of a transforming world.

In this context, the Council of the European Union (2006) identified and defined eight key competences for lifelong learning, which have served as a reference for Spain's educational system to develop education, training, and learning frameworks. These competences were updated in 2018 (Council of the European Union, 2018) to address educational needs arising from societal and economic changes. The updated framework promotes personal development, employability, healthy and sustainable lifestyles, active citizenship, and social inclusion (European Commission, 2019).

The eight key competences hold equal importance and can be applied from early childhood to adulthood in any learning context. These competences are literacy competence; multilingual competence; Mathematical competence and competence in science, technology and engineering; digital competence; personal, social and learning to learn competence; citizenship competence; entrepreneurship competence; and cultural awareness and expression competence.

The existing literature on the impact of music education on the development of key competences shows considerable heterogeneity in both approaches and types of studies. These range from broad approaches addressing the impact of music on all competences (Campollo-Urkitza, 2019; Monreal-Guerrero et al., 2024) to studies focusing on specific competences, such as Digital Competence (Cremades-Andreu & Campollo-Urkitza, 2023), Mathematical Competence and Competence in Science, Technology, and Engineering (Durán & Galán, 2023), Linguistic Competence (Campollo-Urkitza & Cremades-Andreu, 2022), or Personal, Social, and Learning to Learn Competence (Rauduvaitė & Sun, 2023).

Regarding the link between Music Education and the Competence in Cultural Awareness and Expression, studies focus on specific aspects such as heritage (Martínez-Rodríguez, 2021) and its preservation (Verdecia et al., 2022), as well as the awareness of cultural diversity (Ilari et al., 2013).

Key competences in Spanish educational legislation are developed through a curricular design that, in order of specification, connects the students' exit profile with the achievement of stage objectives. These objectives are broken down into specific competences for each subject area, detailed through basic knowledge (concepts, procedures, and attitudes) and assessed via evaluation criteria. The legislative framework established by Royal Decree 157/2022 defines how each subject area contributes to key competences, with their content described through various operational descriptors.

In the case of the area of arts education, there is a comprehensive connection to the operational descriptors of the competence in cultural awareness and expression. However, in the other key competences, while relationships exist, not all their operational descriptors are covered.

Therefore, a particular link between music education and the competence in cultural awareness and expression is evident, highlighting the importance of cultural identity and diversity, as well as other aspects related to the understanding of heritage and cultural expressions.

### 1.2. Scoping review as a research approach

While the primary aim of this study is to address the development of cultural awareness and expression competence within music education in Spain, it is also essential to consider international studies applying a competence-based approach in this domain. Such comparative analysis broadens the perspective and contextualizes findings within a global framework.

An initial review of existing literature on this competence's

development in Primary Education revealed studies employing qualitative or mixed methodologies. Given this heterogeneity, the SPIDER framework (Sample, Phenomenon of Interest, Design, Evaluation, and Research Type) was initially proposed to structure the research question and guide the systematic review. However, SPIDER's restrictive nature—especially in keyword selection—led to the adoption of a scoping review approach, which provides greater flexibility to explore relevant interventions and studies comprehensively.

This methodological approach is particularly pertinent given the limited specific studies on how music education contributes to developing cultural awareness and expression competence in Primary Education. Additionally, evidence on music education interventions that support this key competence's development remains scarce. A scoping review is critical for systematizing existing knowledge and addressing identified gaps in the literature.

## 2. Method

### 2.1. Protocol design

A protocol for a scoping review on the contribution of music education to the development of cultural awareness and expression competence in Primary Education has been developed. This review will follow the methodological recommendations of the Joanna Briggs Institute (JBI) for scoping reviews (Peters et al., 2020) and incorporate the SPIDER framework for synthesizing qualitative evidence (Cooke et al., 2012). In this regard, the literature search will be conducted using the PCC framework (Population, Concept, Context), while the SPIDER approach will be employed for the recording and analysis of the evidence.

In addition, PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines will be followed, initially developed by Moher et al. (2009), later reviewed by Urrútia and Bonfill (2013), and updated by Page et al. (2021). The PRISMA-ScR checklist (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews) (Tricco et al., 2018) was also considered for protocol content.

The protocol's design phases incorporate insights from Arksey and O'Malley (2005), while acknowledging the iterative procedure described by Levac et al. (2010).

This protocol has been registered on the Open Science Framework (OSF) and is accessible at <https://osf.io/hqt3u/>

### 2.2. Stage one: objective, research question, and conceptual framework

#### 2.2.1. Objective

The primary objective of this scoping review is to synthesize literature and evidence on music education's contributions to the development of cultural awareness and expression competence.

#### 2.2.2. Research question

What evidence exists on the contribution of music education to the development of the key competence in cultural awareness and expression in Primary Education students?

This research question was developed following the *JBI Manual for Evidence Synthesis* (Aromataris et al., 2024), whose authors recommend the PCC approach (Population, Concept, and Context).

#### 2.2.3. Conceptual framework: population, concept, and context

Population: Primary Education students (6–12 years old), including studies involving the broader educational community.

Concept: Musical and educational interventions and their impacts on the dimensions of cultural awareness and expression competence.

Context: Educational settings impacting Primary Education, such as training actions or specific programs.

2.3. Stage two: identification of studies

2.3.1. Keywords and search strategy

A systematic approach will be adopted, incorporating an iterative selection process for locating literature across databases. This will involve the use of unified and database-adapted search strings, which will be evaluated and refined iteratively based on preliminary results and the relevance analysis of the identified studies.

Although the PCC approach is suitable for accessing and analyzing existing literature, it was decided to use a series of keywords derived from the main concepts of the review, such as ‘topic, ‘key competence, ‘operational descriptors, and ‘population’.

Operational descriptors have been included as a main concept due to the complexity of defining the term ‘competence’, as it encompasses theoretical and practical knowledge, as well as skills and attitudes applied in specific contexts (Triviño & González, 2020). The keywords derived from these operational descriptors have been defined based on the provisions for the key competence "Cultural Awareness and Expression" in Royal Decree 157/2022, of 1 March, which regulates the structure and minimum teachings of Primary Education. These keywords will be incorporated into search strategies only in databases that yield fewer than 20 results.

The keywords will be used in both English and Spanish, as shown in Table 1.

Boolean operators (AND, OR) will be used to connect keywords, thereby broadening or narrowing search results. The AND operator will be used to include all keywords derived from the main concept, while the OR operator will allow the selection of any of them.

Additionally, double quotation marks will be used for exact searches, which will be applied to the entire document (Table 2).

In any case, it is essential to use an iterative design that allows for refining the conceptual framework during the delimitation and review process. This approach will enable the refinement of keywords and adjustment of the conceptual framework as the analysis progresses.

2.3.2. Databases

The databases to be used for the review are as follows:

- Scopus (Elsevier). This database will be employed to search for peer-reviewed articles in Social Sciences and Education, enabling the identification of publications and research within the field of study.
- Web of Science (Clarivate Analytics). This resource will be used for locating peer-reviewed articles in Social Sciences and Education, providing access to high-impact international research in the study domain.
- ERIC (Education Resources Information Center, accessible via EBSCOhost). This database will be utilized to include the search for grey literature and peer-reviewed articles within the fields of Social Sciences and Education, encompassing reports, conference proceedings, and other publications pertinent to the area of study.

Table 1  
Keywords employed for the scoping review.

Main Concept	Keywords in Spanish	Keywords in English
Topic	Educación musical	Music education
Key competence	Competencia	Competence
	Conciencia y expresión culturales	Cultural awareness and expression
Operational descriptors (optional)	Diversidad cultural	Cultural diversity
	Patrimonio cultural	Cultural heritage
	Pensamiento creativo	Creative thinking
Population	Expresión artística	Artistic expression
	Educación Primaria	Primary Education
		Primary School
		Elementary Education Elementary School

Table 2  
Strategies for scoping review searches.

Search type	Strategy
Search without incorporating keywords from the ‘operational descriptors’ (English)	"Music education" AND competence AND "cultural awareness and expression" AND ("primary education" OR "primary school" OR "elementary education" OR "elementary school")
Search without incorporating keywords from the ‘operational descriptors’ (Spanish)	"Educación musical" AND "competencia" AND "conciencia y expresión culturales" AND "educación primaria"
Search incorporating keywords from the ‘operational descriptors’ (English)	"Music education" AND "competence" AND ("cultural awareness and expression" OR "cultural diversity" OR "cultural heritage" OR "creative thinking" OR "artistic expression") AND ("primary education" OR "primary school" OR "elementary education" OR "elementary school")
Search incorporating keywords from the ‘operational descriptors’ (Spanish)	"Educación musical" AND "competencia" AND "conciencia y expresión culturales" AND ("diversidad cultural" OR "patrimonio cultural" OR "pensamiento creativo" OR "expresión artística") AND "educación primaria"

- Google Scholar (Google LLC). This platform will enable general searches in Spanish and English, complementing the other databases by providing access to grey literature, including studies that are not peer-reviewed but remain relevant for minimizing selection bias. However, academic works intended for undergraduate or master’s degree purposes, as well as those failing to meet the established inclusion and exclusion criteria, will be excluded.
- ProQuest (ProQuest LLC). This provider will be used for searching a wide range of materials, including peer-reviewed articles and grey literature.

For the search of grey literature, doctoral theses located in Teseo, the database compiling dissertations from Spanish universities, will also be considered. Additionally, reports and recommendations from institutions such as the Government of Spain, the Council of the European Union, UNESCO, and the OECD will be included.

2.3.3. Reference lists

Although systematic reviews on key competences and music education have not been identified, reference lists from relevant studies related to any dimension of the competence in cultural awareness and expression within music education, focused on the Primary Education population, will be examined. This procedure aims to ensure that the scoping review addresses potential gaps in indexing or advanced searches conducted.

The bibliographic management software EndNote will be used to efficiently record each consulted database along with the corresponding access date.

2.3.4. Iterative process

As noted by Peters et al. (2020), the scoping review process may require adaptations to search terms or the inclusion of new keywords to better address the research question.

A preliminary validation of keywords will be conducted by analyzing descriptors and keywords used in academic articles and regulatory documents, such as Spanish legislation and current European Union reports. Furthermore, preliminary searches in the selected databases will be performed using the proposed keywords to evaluate the quantity and quality of the retrieved studies and their relevance to the protocol’s objectives.

During the iterative process, synonymous and related terms may be incorporated, implementing Boolean operators (AND, OR, NOT) to

optimize the precision and comprehensiveness of the searches.

All modifications to keywords will be documented to ensure process transparency. This record will include the initial keywords, the reasons for adding, modifying, or removing terms, and the combinations that yielded the most relevant results.

## 2.4. Stage three: selection of studies

### 2.4.1. Inclusion and exclusion criteria

Sources in English and Spanish will be included, and the search strategy will be applied to the titles and abstracts of identified studies. The inclusion criteria are based on the previously described PCC framework, with additional consideration given to the type of evidence.

- Participants: Studies focusing on the Primary Education stage or specifying participants of school age between 6 and 12 years.
- Concept: Studies analyzing and linking musical interventions with the development of the competence in cultural awareness and expression, either generally or in specific aspects of this key competence.
- Context: No geographical or contextual limitations will be applied.
- Types of evidence:
  - Peer-reviewed studies, without methodological restrictions (qualitative, quantitative, and mixed-methods studies).
  - Grey literature (reports, theses, and conference proceedings).
  - Methodological quality of evidence: Studies must present objectives, methodological development, and conclusions, even if descriptive or exploratory.
- Timeframe: from 2005 to 2015.

The exclusion criteria are as follows:

- Publications whose title or abstract does not indicate a direct relationship with the purpose of the study.
- Literature that does not identify the population or does not include Primary Education students. This stage has unique characteristics that make the inclusion of other educational levels inappropriate due to differing curricular approaches, objectives, and competence development needs. Studies focusing on university education, regulated programs, or the Early Childhood and Secondary Education stages will be excluded from the initial review.
- Studies that do not explicitly analyze or link musical interventions with the development of the competence in cultural awareness and expression.
- Documents focusing on contexts unrelated to the Primary Education stage.
- Studies that do not include at least an accessible abstract in English or Spanish.
- Studies with inadequate methodology for addressing the protocol's objective, as priority will be given to publications that specify their design, methodology, or procedures used to generate conclusions.

It is anticipated that two reviewers will independently apply the inclusion and exclusion criteria, following the described search strategies and literature characteristics. In case of discrepancies, a third reviewer will intervene to resolve them and ensure consensus.

The screening process will be conducted in several phases following uniform screening guidelines. Prior to initiating this process, duplicate records will be removed using automated tools and manual review. Each reviewer will use a contingency table designed to number, identify, and record the screening results across different phases (titles, abstracts, and full text). Additionally, this table will include specific observations to justify exclusion decisions.

1. Initial Phase (Title Screening): Reviewers will select relevant literature by evaluating titles.

2. Second Phase (Abstract Screening): At this stage, a more detailed reading of abstracts will be performed to refine the selection.
3. Third Phase (Full-Text Review): Finally, the full texts of the selected studies will be reviewed to make definitive decisions.

In each phase, inter-rater reliability will be calculated using Cohen's Kappa coefficient to assess the level of agreement between reviewers and minimize the risk of bias. This calculation will be particularly important during the initial title screening phase, as this stage represents a critical filter to avoid selection bias (Pérez et al., 2020).

## 2.5. Stage four: extraction of data

For data extraction, the guidelines by Peters et al. (2020) will be used as a reference, adapting and implementing the SPIDER framework. The following elements will be recorded:

1. Authorship: Identification of the study's authors.
2. Year of publication: Date when the work was published.
3. Title: Full title of the document.
4. Abstract of the document.
5. Sample (S): Description of the study sample.
6. Phenomenon of Interest (PI): Categorization based on musical interventions and the specific objectives or topics of the studies, identifying whether they address the entire competence or focus on specific aspects such as cultural heritage, cultural diversity, creative thinking, or artistic expression.
7. Design (D): Categorization following the synthesis provided by Vizcaíno et al. (2023), considering depth (exploratory, descriptive, or explanatory) and approach (qualitative, quantitative, or mixed).
8. Evaluation (E): Summary of the key findings of the study.
9. Initial Categorization: Classification as addressing the full competence or specific aspects thereof.
10. Research type (R): Experimental, non-experimental, descriptive, correlational, or explanatory.
11. APA Reference: Complete reference in APA format.

An initial test of the format will be conducted with 2–3 studies to ensure its suitability.

## 2.6. Stage five: analysis, synthesis, and dissemination of results

### 2.6.1. Methods for data analysis

To classify and organize data from the reviewed literature, a Microsoft Excel spreadsheet will be employed, containing the 11 columns described based on Peters et al. (2020) and the SPIDER framework. The spreadsheet is specifically designed to record and structure key information.

The data will be synthesized using a descriptive analysis to explore common patterns, research gaps, and priority areas within the contribution of music education to the development of the Competence in Cultural Awareness and Expression.

### 2.6.2. Presentation of results

Both a PRISMA-ScR flow diagram, tables, and charts, as well as a narrative summary, will be used for presenting the results:

- Flow Diagram: A PRISMA-ScR flow diagram will be employed to provide a visual representation of the source selection process, highlighting the number of studies identified, reviewed, and ultimately included in the review.
- Tables and Charts: These will illustrate frequency counts of key concepts, types of methodological designs employed, and other relevant data.

- Narrative Summary: The narrative summary will contextualize the findings and explain the relationships between the identified interventions and the observed outcomes in the key competence.

The results will be organized to address the initial research question and will include the following aspects:

- Identification of musical proposals for competence development in Cultural Awareness and Expression.
- Analysis of the obtained data, highlighting priority areas and research gaps in the existing literature.
- Recommendations for future research, including reflections on the study's limitations and prospects.

### 3. Discussion

This scoping review addresses an unexplored field to date: the contribution of music education to the development of the key competence in cultural awareness and expression within the Primary Education stage. This review adopts a perspective that connects the well-documented benefits of music for human development with the need to align these effects with educational objectives and the competence-based approach required in teaching practices (Hernández-Bravo et al., 2014; López-Rupérez, 2022). Music education, by integrating cultural, artistic, and creative dimensions, can foster not only the cognitive and emotional development of students (Hallam & Himonides, 2022; Koelsch & Skeie, 2020) but also their cultural identity, cultural awareness, and appreciation of cultural and heritage diversity. This framework is particularly aligned with the objectives of the competence in cultural awareness and expression as defined in the European Council guidelines (2018) and the Spanish curriculum design established by Real Decreto (157/2022).

This approach is necessary to synthesize the evidence in this specific field and to highlight the importance of music education from a competence-based perspective, impacting intentional and strategically aligned musical interventions as demanded by 21st-century education. The findings of this review can support future research within this competence framework and in the educational and musical connection with other key competences. Furthermore, it seeks to underscore the current evidence to improve music education interventions in Primary Education from a cultural competence-based perspective. To this end, the results of the review will be disseminated through various channels, with priority given to publication in peer-reviewed journals.

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This study has been funded by the Basque Government.

### Declarations

According to the Research Ethics Committee of the University of Deusto (CEI-UD), this research protocol does not require evaluation or prior approval from the ethics committee, as it does not involve individuals or sensitive or personal data. Nevertheless, it is ensured that all procedures described in this protocol comply with the applicable ethical and legal standards for systematic literature reviews.

### CRedit authorship contribution statement

**Cristina Martín-Sanz:** Investigation, Methodology, Project administration, Supervision, Visualization, Writing – original draft, Writing – review & editing. **Óliver Curbelo González:** Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. **Miryam Martínez-Izagirre:** Funding acquisition, Supervision, Validation, Writing – review & editing.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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