

Bibliometric analysis of academic output in music education in Spain

Análisis bibliométrico de la producción científica en Educación Musical en España

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Abstract

The aim of this work is to analyse trends in music education research from Spain through bibliometric analysis of the academic output in the Web of Science database, comprising 143 articles published between 2000 and 2015. Several types of variable were analysed: a) structural variables; b) variables relating to the topic being studied; c) variables relating to the sample; and d) variables relating to the research methods and instruments used. The results show increased representation of music education in specialised journals and a broad dissemination in journals from related areas. The data indicate that both the number of articles on music education published and their impact are still limited when compared with other related areas. Measures are proposed to achieve a greater impact of the publications on the career development of the authors and to give the discipline a higher profile.

Keywords: Music Education, bibliometrics, Spain, Web of Science.

Resumen

Este trabajo tiene por objeto analizar las tendencias de la investigación realizada en España en educación musical a través de los 143 artículos publicados entre los años 2000 al 2015, a través de un análisis bibliométrico de la producción científica en la base de datos Web of Science. Se analizaron diferentes tipos de variables: a) estructurales; b) relacionadas con la temática; c) relacionadas con la muestra; y d) relacionadas con los métodos e instrumentos de investigación utilizados. Los resultados muestran un incremento en presencia en las revistas especializadas de educación musical y una amplia dispersión en revistas de áreas afines. Nuestros datos indican que tanto el número de artículos publicados en educación musical como el impacto de estos siguen siendo escasos si se compara con otras áreas afines. Se proponen medidas para conseguir un mayor impacto de las publicaciones en el desarrollo profesional de los autores y para una mayor visibilidad de la disciplina.

Descriptores: Educación Musical, bibliometría, España, Web of Science.

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1. Introduction

The dissemination of scientific findings through academic publishing is an essential activity for producing and sharing knowledge and for making researchers' work credible (Devís-Devís, Antolín, Villamón, & Valenciano, 2003; Hernández-González, Reverter-Masia, & Jové-Deltell, 2017). Bibliometrics is a corpus-based methodology that focuses on analysing information contained primarily in academic research publications, although increasingly it focusses not only on analysis of academic publications but also on analysis of researchers and academic documents (Orduña-Malea, Martín-Martín, & Delgado-López-Cózar, 2016). Analysing activity through bibliometric indicators makes it possible to study the structure and dynamics of the research process in-depth and show research trends and the main lines of action (Olmedilla *et al.*, 2013; Ortega *et al.*, 2014; Palazón, Ortega, & García-Angulo, 2015; Permanyer-Miralda, Hinrichs-Krapels, & Adam, 2016; Peset *et al.*, 2013). These studies can also supply interesting data for shaping a country's scientific policy (Cabezas-Clavijo, 2014; Sanz-Valero, Casterá, & Wanden-Berghe, 2014; Torres-Salinas & Jiménez-Contreras, 2015). Indeed, the use of bibliometric indicators in addition to other academic indicators is increasingly being used to analyse the situation of research in a country, its development over time, and its position in the international setting (Orduña-Malea *et al.*, 2016; Peralta, Frías, & Gregorio, 2015).

In recent years, there has been significant growth in academic output in educational sciences (Azer, 2015; Diem

& Wolter, 2013; Fejes & Nylander, 2014; Maz-Machado *et al.*, 2012; Moreno-Fernández & Moreno-Crespo, 2016). This large increase has led to the birth of bibliometric studies that analyse quality and quantity in research in educational sciences. Accordingly, there are three major lines of research that bring together different bibliometric studies. Specifically, they are studies that: a) analyse scientific journals that specialise in educational sciences; b) studies that analyse academic output in education from an overall perspective in doctoral theses, research projects, conferences, etc.; and c) a third major group that analyses in detail academic output in specific areas within the educational sciences.

The studies in the first group analyse scientific journals related with educational sciences, evaluating their academic output and the most relevant and up-to-date topics in each area, and comparing journals with each other to establish rankings, quality criteria and so on (e.g. Azes, 2015; Fejes & Nylander, 2014; Zurita, Merigo, & Lobos-Ossandon, 2014). For example, in the context of music education, Bansal (2014) performed a study that found a total of 44 open-access journals related to music education, the oldest of which was founded in 1984 (*Pacific Review of Ethnomusicology*) while the most recent ones were from 2011 (*Journal of Jazz Studies*, *Journal of Sonic Studies*, *Musica Docta: Rivista Digitale di Pedagogia*, and *SoundEffects*). This study also found that the country with most journals on music education is the USA, followed by Spain, and that the principal language is English. Similarly, Hancock (2015)

performed a bibliometric study in which he analysed the time of appearance of the first citation of the articles published in a specific music education journal (*Journal of Research in Music Education*). He concluded that the first citation appears approximately one year after publication, that citations of articles published in these journals appear earlier than for the other journals in this area, and that articles with several authors are more likely to be cited than ones by a single author. Finally, it is worth noting the study by Diaz and Silveira (2016) that analyses the academic output of three music journals (*Journal of Research in Music Education*, *Psychology of Music*, and *Music Perception*). They conclude that most the articles in these scientific journals on music are experimental works that analyse the topic of preferences and expression and principally analyse classical music. The most common task in them is listening, the general topic is multiculturalism, and their sample is mainly primary school pupils.

The second large group of bibliometric research works comprises pieces of research that quantitatively evaluate academic output in the field of educational sciences in general by studying works published in journals (e.g. Azes, 2015), works presented at conferences (e.g. Méndez, Amaya, & Rodríguez, 2015), doctoral theses (e.g. Max *et al.*, 2012; Moreno-Fernández & Moreno-Crespo, 2016; Vallejo, Torralbo, & Fernández-Cano, 2015) and, to a lesser extent, funding awarded for research projects (e.g. Ortega, Valdivia-Moral, Hernán-Villarejo, & Olmedilla, 2014), and so on. These works all conclude that the significant increase in academic

output in the major educational areas over the last twenty years require greater specialisation and greater specific knowledge of small areas (Fernández-Cano Torralbo & Vallejo, 2008; Moreno-Fernández & Moreno-Crespo, 2016), areas which are becoming ever more important and which it is necessary to know about and organise.

Finally, the third large group analyses academic output from specific educational specialisms (e.g. Montero-Herrera, 2016). Accordingly, in music education different authors have analysed the academic output contained in various databases (Dialnet, Scopus, and Eric). Furthermore, most of these studies analyse structural variables, in other words, the journals where the articles are published, the most important authors, the year of publication, the number of authors, and the country of publication among others. However, most of these studies do not consider variables relating to the content of the works such as methodological aspects, the type of sample, the topic of the study, the type of music, and the evaluation instruments used, or variables relating to qualitative criteria such as the number of citations received. Similarly, these studies tend to be multinational, analysing academic output relating to music education at an international level and not at the national level.

However, owing to the local specificity of education, there are ever more authors who reiterate the need for bibliometric studies on specific educational specialisms in geographic areas and/or specific countries (Espinet, Izquierdo, & García-Pujol, 2015), studies that make it possible to discover how research into

these specialities is developing in these areas. These studies can be used to establish research policies and academic diffusion and dissemination policies, and for detecting both large clusters of scientific knowledge and possible lacunae that future researchers could cover.

In this sense, bibliometric studies on music education carried out in English-speaking settings are very interesting as they reveal the strengths and weaknesses of the research in a very specific area in a particular territory (Díaz & Silveira, 2014; Hancock, 2015).

The limited number of studies of this type in Spain and the lack of studies that analyse the Web of Science databases (ISI-Thomson) make this piece of work necessary. It has the aim of analysing trends in research on music education in Spain through bibliometric analysis of the Spanish academic output in the Core Collection database of the Web of Science platform, analysing: a) structural variables; b) variables relating with the topic being studied; c) variables related with the sample being studied; and d) variables relating with the research methods and instruments used in the study.

2. Method

The study was carried out using the articles published in journals indexed in the Core Collection database of the Web of Science platform. Two researchers individually carried out the process of selecting the sample. The initial sample comprised all of the articles returned by a search of the Web of Science database using the terms «musi*» and «educat*» in

Topic, and «Spain» in Country ($n = 262$). Next, only academic articles were selected; conference papers, editorials, letters to the editor, and such like were rejected ($n = 168$). A total of 143 articles were selected from this sample. These articles were the ones that corresponded with the study's proposed objectives; 25 studies that were not related to music education were eliminated. To ensure the evaluation of quality in the review process (Wright, Brand, Dunn, & Spindler, 2007), agreement between the two researchers was measured using Cohen's kappa calculation. A score of $k = 0.96$ was obtained. Figure 1 shows the selection process for the study sample. This search was performed on 1 September 2016.

The following groups of variables were analysed in each of the selected articles: a) structural variables; b) variables relating with the topic being studied; c) variables related with the sample being studied; and d) variables relating with the research methods and instruments used in the study. Furthermore, the number of citations listed in the Web of Science database for each of the works was recorded.

In the first large group of variables, the following items were analysed for each article: 1) the title; 2) the name of the journal where it was published; 3) the year of publication; 4) the lead author's institution; 5) the gender of the lead author; 6) the number of authors; and 7) any foreign co-authors. The following categories for foreign co-authors were established: no foreign co-authors, co-authors from the USA, co-authors from European Union countries, co-authors from the UK, co-authors from South American

countries, co-authors from other countries or mixed co-authors.

In the second large group of variables, the following ones were analysed: 9) musical style analysed; 10) the task being performed; 11) broad research lines; 12) general topic; and 13) specific topic. Jazz, folk, world, pop, mixed styles, and other styles were noted in the «musical style» variable. When analysing the «tasks» variable, the following categories were proposed: listening, performance, survey, analysis, listening/viewing, others, and mixed. When analysing the «major research lines» variable, the following categories were analysed: educational resources (pedagogy, methodology, teaching approach, etc.), human resources (teachers-students), material resources (centres, music materials, instruments, etc.), and others. Next, the following categories were established for analysing the «general topic»: studies on educational centres, studies of students, studies of teachers, studies of the curriculum, studies of evaluation, studies of educational practice itself, studies of music education itself, and possible mixed studies. Finally, when analysing the «specific topic» variable, possible studies on multiculturalism, studies on gender, psychological studies, studies that analyse the movement of the body, studies that compare age groups, studies that analyse special populations, studies that analyse socio-cultural factors, and finally studies that analyse aspects related with ethnicity/race were established.

In the third large group of variables, those relating to the sample that is the subject matter were analysed. The following specific variables were analysed: 14)

gender of the sample (male, female, or mixed) and 15) type of sample (early years education pupils, primary school pupils, secondary students, university students, students at centres governed by special regulations –such as music schools, conservatories, and so on– teachers, special populations, adult amateurs, and studies with no sample).

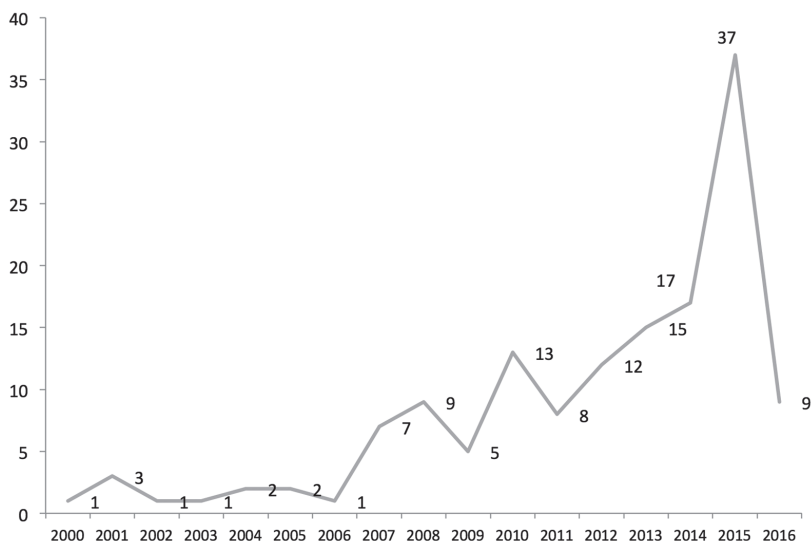
Finally, for the fourth major group, the variables relating to the research methods and instruments used in the studies were recorded. The following in particular were analysed: 16) the research methodology used (experimental, descriptive, case study, literature reviews/theoretical, others) and 17) the instruments used for collecting data (questionnaires, observation sheets, interviews, and/or instrumental/technical).

This research project is an ex post facto retrospective study (Montero & León, 2007). Descriptive and frequency analyses were used to identify and classify the different variables, using the SPSS 19 statistics program.

3. Results

Figure 1 shows a gradual increase in the number of publications, with notable figures apparent for 2007, 2010, and 2015. This type of article was especially prolific in 2015 with 25.9% of the publications that appeared between 2000-2016 being from this year. Of the articles published during these seventeen years, 56.7% are from between 2012 and 2015 (both inclusive). It is worth noting that the data collection ended in June 2016, and so the publications for that year are incomplete.

FIGURE 1. Frequency of publication.



Source: Own elaboration.

Table 1 shows the percentage and numbers of the structural variables established for this study.

Articles on music education were published in 88 journals in these years. Specifically, 34 (23.77%) articles were published in specialist music education journals and 109 (76.6%) in non-specialist journals. Regarding the journals where these works were published, three major groups are apparent: a) education journals; b) psychology journals; and c) medicine journals. The following journals stand out from the first large group: *Music Education Research*, *Cultura y Educación*, and *International Journal of Music Education*, who between them published a total

of 24 articles on music education. In the group of psychology journals, the following stand out: *Psicodidáctica*, *Atención primaria*, and *Infancia y aprendizaje* with a total of 11 pieces. Finally, the journals *Medical Problems of Performing Artists* and *Revista de Neurología* stand out in the medicine group with a total of four publications.

Regarding the institution of the lead author, 119 of the works analysed have a lead author from a Spanish institution, while the lead author of 24 is from a foreign institution. The University of Granada on 11.2% and the Autonomous University of Madrid on 10.5% in particular stand out over the rest.

TABLE 1. Music education articles by structural aspects studied.

Variable	Category	Number	Percentage
Gender of lead author	Male	79	55.24%
	Female	64	44.76%
Number of authors	One	32	22.38%
	Two	37	25.87%
	Three	49	34.27%
	More than three	25	17.48%
Foreign co-authors	No co-authors	108	76.06%
	USA	9	6.34%
	European Union	8	5.36%
	UK	7	4.93%
	South America	7	4.93%
	Others	3	2.11%

Source: Own elaboration.

The data in Table 1 show that for the gender of the lead author, men are the lead authors of 55.2% of the articles. Furthermore, the average number of authors for the articles is 2.83 ± 2.61 . Single authors wrote 22.38% of the articles, while 25.87% were written by two authors, and 34.27% by three authors. Finally, Table 1 shows that 76.06% of the works analysed do not

have any foreign co-authors. Almost 25% of the remaining works have co-authors from the USA (6.34%) while a further 5.36% have co-authors from the European Union, 4.93% have co-authors from the UK and the same number have co-authors from Latin American countries. The remaining 2.11% have co-authors from other countries or from more than one country.

TABLE 2. Music education articles by the topic studied.

Variable	Category	Absolute frequency	Relative frequency
Musical style	Not stated	114	91.94%
	Jazz	1	.81%
	Folk	0	.00%
	World	0	.00%
	Pop	0	.00%
	Mixed	6	4.84%
	Others	3	2.42%

Variable	Category	Absolute frequency	Relative frequency
Task performed	Listening	9	7.89%
	Performance	9	7.89%
	Survey	23	20.18%
	Analysis	69	60.53%
	Listening/Viewing	1	.88%
	Others	2	1.75%
	None	10	8.85%
General topic	Centres	1	.88%
	Students	12	10.62%
	Teachers	10	8.85%
	Curriculum	7	6.19%
	Evaluation	2	1.77%
	Educational practices	27	23.89%
	Music education	36	31.86%
	Several topics	8	7.08%
Specific topic	Multiculturalism	6	12.00%
	Gender	2	4.00%
	Psychological	5	10.00%
	Movement of the body	2	4.00%
	Age	4	8.00%
	Special population	7	14.00%
	Socio-cultural	16	32.00%
	Socio-economic	3	6.00%
Others	5	10.00%	

Source: Own elaboration.

Table 2 shows the absolute and relative percentage of the variables related to the topic that is the object of study.

The figures in Table 2 show that when analysing the variables relating to the topic being studied, most articles do not specify the musical style they are analysing (91.4%), 4.8% of the articles analyse

a mix of styles, a single article analyses jazz, and 2.42% analyse other styles. Specific articles on musical styles such as folk, world or pop were not found.

On the other hand, when analysing the «task performed» variable in pieces of research, the data in Table 2 show that in the large majority of cases an analysis

of different variables and topics was performed, with *surveys* being used to a lesser extent. A small number of studies in which *listening, performance, listening/viewing, other tasks, or no task* were performed were also noted.

Regarding «main research lines», the data from this study show three major ones: a) *educational resources* (pedagogy, methodology, didactics, etc.) with 50.44% of the articles; b) *human resources* (teachers-students) with 20.35%; and c) *material resources* (centres, musical materials, instruments, etc.) with 14.16%, leaving 15.04% of articles in the *others* section.

When analysing the «general topic», studies on *music education* comprised a

third of the publications from the years under consideration while 23.89% of the studies were on *educational practice* itself. Lower percentages of articles were found on a) education centres, b) students, c) teachers, d) evaluation, and e) mixed studies.

When analysing the «specific topic» variable, sociocultural studies are most frequent, appearing in 32% of the articles while of the specific topics proposed those relating to gender and bodily movement are least frequent with just 4% each.

Table 3 shows the relative percentages of the «sex of sample» and «type of sample» variables, belonging to the third large group of variables that are the object of study.

TABLE 3. Music education articles by sample being studied.

Variable	Category	Absolute Frequency	Relative Frequency
Sex of the sample	Male	1	.85%
	Female	2	1.71%
	Both	74	63.25%
	No gender	40	34.19%
Type of sample	No sample	36	31.30%
	Early years	2	1.74%
	Primary	10	8.70%
	Secondary	14	12.17%
	University	9	7.83%
	Special regulations	15	13.04%
	Teachers	18	15.65%
	Professionals	4	3.48%
	Special population	4	3.48%
	Adult amateurs	3	2.61%

Source: Own elaboration.

The data in Table 3 show that subjects of both genders are used in almost two out of every three studies, while one in three studies do not state gender as they do not study subjects per se. Only one piece analyses males exclusively and two analyse females only.

Furthermore, when analysing the type of sample, the data in Table 3 show that in one in three studies there is no sample strictly speaking as they are theoretical studies, practical proposals, etc. Studies

on teachers, students under special regulations, and secondary school students stand out among the empirical studies that study individuals. There are very few works where the sample that is the object of study comprises early years students, special populations, professionals, or adult amateurs.

Finally, Table 4 shows the absolute and relative percentages of the variables relating with the research methods and instruments used in the studies.

TABLE 4. Articles on music education, by methodology being studied and number of citations received.

Variable	Category	Absolute Frequency	Relative Frequency
Methodology used	Experimental	17	11.89%
	Descriptive	105	73.43%
	Case studies	5	3.50%
	Literature review	10	6.99%
	Others	6	4.20%
Number of citations received	No citations	81	56.64%
	One citation	15	10.49%
	Two citations	9	6.29%
	Three citations	9	6.29%
	More than three citations	29	20.3%
Questionnaire		39	31.97%
Interview		14	11.97%
Instrumental		18	15.38%
Observation sheet		7	5.98%

Source: Own elaboration.

The data in Table 4 show that the research methodology used was *descrip-*

tive in most cases. Other methodologies such as experimental work, literature

reviews, case studies, and others were less common. As for the instruments used for collecting data, the articles mainly used questionnaires, followed to a lesser extent by instrumental/technical, interviews, and observation sheets.

Finally, a mean number of citations obtained by each of the articles of 2.96 ± 7.00 was recorded, although only 62 of the 143 works in the study were actually cited. Table 4 shows that if articles with no citations are disregarded, ones with one, two, or three citations are most common, although seven pieces have over 25 citations and one study stands out with 45 citations (from the Autonomous University of Barcelona published in the journal *Poetics* entitled «From exclusive to inclusive elitists and further: Twenty years of omnivorousness and cultural diversity in arts participation in the USA»). Only one of the articles with over 25 citations was published in a specific music journal, the rest being published in medicine or computing journals (*Dementia and Geriatric Cognitive Disorders*, *Journal of Neuroscience*, *Multiple Sclerosis Journal*, *Applied Intelligence*, *Medical Problems of Performing Artists*, *Transactions on Visualization and Computer Graphics*).

4. Discussion

The objective of this piece is to analyse trends in music education research from Spain through bibliometric analysis of Spanish academic output in the Core Collection database of the Web of Science platform, analysing: a) structural variables; b) variables relating with the topic being studied; c) variables relating to the

sample of the object of study; and d) variables relating to the research methods and instruments used in the study.

Firstly, it is important to note the limited number of works published on music education in Spain compared with other types of works in general or works related with education in particular (Huggett, Gurney, & Jumlet, 2016). It is not until 2010 that we start to see an increase in the number of publications in impact journals in this thematic area. The limited number of works published on music education by Spanish authors is also observed in the studies by Gustems and Calderón-Garrido (2016) based on an analysis of the SCOPUS database, Gustems and Calderón-Garrido (2014) based on DIALNET, and Galera and Pérez (2008) based on the ERIC database.

When analysing the journals in which these works are published, in this study and in the studies by Gustems and Calderón-Garrido (2014, 2016) and Galera and Pérez (2008), journals from the field of music education stand out, for example, *Music Education Research* and *International Journal of Music Education*. This latter journal is one of the journals from the first quartile, being number 11 of 113 and having an impact factor of 0.57 and an h-index of 17. However, while a significant number of non-music journals are found in this study (principally psychology and medicine, representing 56.86% of the total), in the study by Calderón-Garrido (2016), and in the study by García-Sánchez (2016), the percentage of non-music journals is much lower in the works by Gustems and Calderón-Garrido (2014) and Galera and Pérez (2008). This

difference is because in this study and the piece by Calderón-Garrido (2016), the two most significant international databases (SCOPUS and ISI) were searched, while the pieces by Gustems and Calderón-Garrido (2014) and Galera and Pérez (2008) analysed national databases such as DI-ALNET and databases with almost exclusively educational content such as ERIC.

Furthermore, when analysing the institutions of the lead authors of pieces of work on music education, the University of Granada and the Autonomous University of Madrid stand out in this study with values similar to those already recorded by Gustems and Calderón-Garrido (2016) and by García-Sánchez (2016). While there is a small percentage of articles with lead authors from universities outside Spain, no particular university stands out over the others.

Regarding the gender of the lead author, the data in this study show a small majority of men (55.24%) with figures very similar to those recorded by Moreno-Fernández and Moreno-Crespo (2016) in the analyses in their doctoral theses on education in Spain.

When analysing the mean number of authors, the data in this study give a figure of 2.83 ± 2.61 , values which are very close to those recorded by the EC3 research group from the University of Granada that places the average number of authors in the education area for 2015 from Spain at 2.4 and internationally at 3.0. These figures are slightly higher than the 1.85 recorded by Gustems and Calderón-Garrido (2016), but are similar to the 2.35 authors recorded in 2010 by

Fuentes, Luque, and López (2012) when they analysed all of the works in the Spanish education journals indexed in JCR. The ever-greater consolidation of the research teams might be one reason for which the number of authors whose names appear on the articles is increasing.

Finally, the figures from this study show a very low level of joint authorship. As Fuentes, Luque, and López (2012) also note, this low level of joint authorship is closely related to Spanish music education researchers' difficulties with the English language.

Secondly, when analysing the variables relating to the topic being studied, the data from this study show a lack of studies on specific musical styles such folk, jazz, pop, etc., and a large number of works in which a particular variable is analysed but a low number of articles in which *listening*, *performance* or *surveys* are used. Studies whose general topic is music education and whose specific topic relates to socio-cultural aspects are increasing in number while there appears to be a fall in the interest raised a few years ago by studies on gender relating to music education (Galera & Pérez, 2008) and psychological studies (Gustems & Calderón-Garrido, 2014, 2016). These figures differ significantly from the ones observed by Diaz and Silveria (2014) who when analysing works from three high-impact English-language music-education journals observed a large number of works in which specific musical styles were studied; *listening*, *performance*, and *survey* were found, and multicultural aspects were studied as well as gender and psychological aspects. These differences

might be because of the time period analysed (1990-2009 instead of 1990-2016) and the territoriality, concerns, problems, and needs, and the fact that the Spanish educational system is different from those of English-speaking countries in general and the USA in particular.

On the other hand, when analysing the variables relating to the sample being studied, in this work it can be seen that most studies analyse both genders and that only two out of three studies analyse individuals, in particular studies on teachers, students under special regulations, and secondary school students. These data are quite different from those recorded by Díaz and Silveria (2014), where studies on university students dominate. Again, the explanation might be because of both the time period of the study and the territoriality typical of studies on education.

When analysing the variables relating to the research methods and instruments used, the data from this study, show that virtually the only methodology used in the field of music education is descriptive, mainly using questionnaires. Again, these data differ from those obtained by Díaz and Silveria (2014) who analysed English-language publications and found that the main methodology was experimental and that there was a high number of articles with theory-based methodology, something that was barely found in the articles that comprise the sample for the current study.

Finally, when analysing the number of citations, the articles studied obtained an average of 2.96 ± 7.00 , while only 62 of the

143 works studied were cited at all. These figures are slightly higher than those recorded by Gustems & Calderón-Garrido (2016) who obtained a mean of 2.05 citations per article. Although authors increasingly choose journals with higher impact indexed in the most academically prestigious bibliographies at an international level, the number of citations they obtain is very low.

The low JCR impact factors of the specific music journals might suggest that the journals chosen by the Spanish authors are not very impactful. However, there are many journals in the first quartile in SJR in the area of music: *Psychology of Music*, *Journal of Research in Music Education*, *Research Studies in Music Education*, *Music Education Research*, *Musicae Scientiae*, *International Journal of Music Education*, *British Journal of Music Education*. Nonetheless, if the area of education is analysed, fewer of the journals being examined are in this quartile, even though the area of education has 1066 journals indexed in JCR and SJR compared with 113 for music. None of the journals analysed that are classified as being about medicine or psychology are in the first quartile, although some of them are in the second. Authors should be made aware that, while their publications receive more citations if they are in journals from related areas (principally music), the impact of their publications on their professional development is better if they publish in less specific journals with a low impact factor (psychology and medicine).

In summary, the number of articles published and their impact continues to be limited when compared with other

related areas. It is necessary to boost research in this field among teachers from universities and conservatories. It is logical that for these professionals, instruments and teaching are the two most important activities in their discipline, but it is important to emphasise the more scientific perspective of the discipline based on research and innovation. Making an area visible in the scientific literature helps with its visibility and recognition by the academic community as a whole. In recent years, a growing trend towards publishing articles can be seen that should be consolidated.

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