

## Bibliometric evolution of body percussion: Impact and gender in scientific-academic publications Evolución bibliométrica de la percusión corporal: Impacto y género en las publicaciones científico-académicas

Antonio Francisco Arnau-Mollá, Francisco Javier Romero-Naranjo  
University of Alicante (Spain)

**Abstract.** Body percussion is an emerging subject that has experienced an exponential growth in the last decade. The aim of this study is to present the state of the art of body percussion from 2001 to 2022 based on documents indexed in primary and secondary search engines with emphasis on gender and impact of publications. A sample of N=245 documents was selected, with n=72 obtained from the main primary search engines (Web of Science, Scopus), and n=173 from secondary search engines (Dialnet, JSTOR, RUA, Springer or DOAJ among others). We used an ex post facto retrospective design in the historiographic bibliometric variant and a frequency analysis using Microsoft Excel. Compared to existing works, it presented a more exhaustive analysis and substantial changes in the variables in terms of search engines, gender analysis, document impact and authors' h-index. The main results showed that the literature published in Spain and written in Spanish in book chapter format and indexed in secondary search engines prevails; that although there is a greater number of female authors, there is a predominance of works written by only men and a greater male participation; and that the educational field, at the Primary Education stage, is the most investigated through quantitative intervention studies, quasi-experimental design, control and experimental group, and repeated measures (pretest-posttest) with validated test as the main evaluation instrument.

**Keywords:** Body percussion, BAPNE, motor control, neuromotricity, bibliometry.

**Resumen.** La percusión corporal es una materia emergente que ha experimentado un crecimiento exponencial en la última década. El objetivo de este estudio es presentar el estado de la cuestión de la percusión corporal de 2001 hasta 2022 en base a los documentos indexados en motores de búsqueda primarios y secundarios con énfasis en el género y en el impacto de las publicaciones. Se seleccionó una muestra de N=245 documentos, siendo n=72 obtenidos de los principales motores de búsqueda primarios (Web of Science, Scopus), y n=173 de motores de búsqueda secundarios (Dialnet, JSTOR, RUA, Springer o DOAJ entre otros). Se utilizó un diseño ex post facto retrospectivo en la variante historiográfico bibliométrico y un análisis de frecuencia a través del programa Excel de Microsoft. Respecto a trabajos existentes, presentó un análisis más exhaustivo y cambios sustanciales en las variables en cuanto a motores de búsqueda, análisis de género, impacto de documentos e índice h de los autores. Los principales resultados mostraron que prevalece la literatura de fundamentación publicada en España y escrita en español en formato capítulo de libro e indexada en motores de búsqueda secundarios; que aun existiendo mayor número de autores de género femenino predominan los trabajos escritos por solo varones y una mayor participación masculina; y que el ámbito educativo, en la etapa de Educación Primaria, es el más investigado a través de estudios de intervención cuantitativos, diseño cuasi-experimental, grupo control y experimental, y medidas repetidas (pretest-postest) con test validado como principal instrumento de evaluación.

**Palabras clave:** Percusión corporal, BAPNE, control motor, neuromotricidad, bibliometría

Fecha recepción: 16-08-23. Fecha de aceptación: 15-10-23

Antonio Francisco Arnau-Mollá

antoniofrancisco.arnau@gmail.com

### Introduction

Body percussion is an emerging subject that is increasing its presence in research by leaps and bounds, with 88.98% of the documents currently found being published in the last decade. Up to 2022, 188 authors contribute to the creation of literature, of which 88 are male (46.81%) and 100 are female (53.19%), producing 173 documents indexed in secondary search engines and 72 in primary search engines, with a greater presence of works written only by men, followed by those written only by women and those written only by men.

Body percussion was studied at bibliometric level in several researches until 2017 (Serna et al., 2018) and until 2021 respectively (Arnau-Mollá & Romero-Naranjo, 2022a, 2022b) whose objects of study presented substantial differences between them in terms of the inclusion of primary or secondary search engines on the one hand, and in the inclusion or exclusion of documents of second order treatment that did not deal with body percussion exclusively, but considerably or analysed the effect of activities

on some dependent variable on the other.

This suggests the need to bring together in a single document the evolution of the scientific-academic production on body percussion in order to present a more reliable state of the question, as a result of the symbiosis and broadening of the possibilities of analysis presented in these works. Therefore, this study can provide a much broader and more detailed vision, since it presents substantial differences, an analysis of variables never before provided, as well as a large amount of complementary data. These main differences are:

- In terms of databases, it collects information from two primary and 12 secondary search engines. It is true that Serna et al. (2018) already did this, but in a very elementary way, using two primary and four secondary search engines, and publishing the article with practically no modifications in memory of the main author who died in 2018.

- The inclusion of the study of gender, providing in all the variables data related to collaboration between authors, i.e. whether the documents were written by only men, only women, or in a mixed form.

- Male or female participation, detailing in each variable the degree of participation according to the gender of the authors.

- The impact of the documents, showing the citations obtained at all times.

- The impact of the authors, presenting the h-index obtained in this study based on the number of publications and citations received, a factor of great importance and very much taken into account in high-impact publications.

- The inclusion and answering of 18 research questions that will present the current landscape of body percussion until 2022.

- The contribution of a large number of tables that provide the results in a detailed and exhaustive manner, which will allow the reader to make interpretations that would be impossible to reflect textually in an article of these characteristics, as only the main results are written in this one, with the rest of the information being shown in the tables.

The first contributions on body percussion in different cultures were collected by missionaries, chroniclers, travellers and researchers (Kartomi, 2010; Romero-Naranjo, 2008c, 2013b, 2014a, 2014b, 2017, 2019a). In terms of research, it began in 2001 with a small volume of literature and periods of non-publication until 2008, when it began to be published uninterruptedly until the present day.

There are different classifications of body percussion (Romero-Naranjo, 2006; 2008b; 2011), the most recent and significant being those presented by Romero-Naranjo (2020c), which divide it into recreational body percussion and academic body percussion in terms of the use made of it, and that of Romero-Naranjo (2022a) in terms of the type of publications of scientific-academic literature: (a) justification papers, (b) didactic papers, (c) research design papers, and (d) statistical results papers. Of this last classification, Arnau-Mollá & Romero-Naranjo (2022b) present an extensive list of references for each module. On the other hand, Romero-Naranjo, (2020a) makes another classification, from a theoretical-practical point of view, of the 11 fields of action of body percussion, dividing them into: didactic, ethnographic, Neuropsychological, kinaesthetic, socio-emotional, Space and Architecture, team building, historical, foundational, transversal learning, and spectacle.

The type of work par excellence in relation to body percussion are the foundational and didactic documents, since 79.18% of the literature has been written on these two modules, with 151 documents found in the secondary search engines and 43 in the primary search engines. In the following, and due to the volume of documents found, only a few examples of each module are presented:

- Justification papers (Alonso-Marco & Romero-Naranjo, 2022; Alonso-Sanz & Romero-Naranjo, 2015; Andreu-Cabrera & Romero-Naranjo, 2021; Arnau-Mollá & Romero-Naranjo, 2022a, 2022b, 2022d; Bango et al, 2017; Bravo, 2022; Crespo et al., 2015; Di Russo & Romero-

Naranjo, 2023; Emer & Romero-Naranjo, 2014; García et al., 2018; Jauset et al., 2014; Lee, 2021; Pons-Terrés, Romero-Naranjo, A. A et al., 2014; Romero-Naranjo, 2008b, 2008c, 2012, 2012, 2013a, 2013b, 2013c, 2013d, 2020c; Romero-Naranjo & Andreu-Cabrera, 2023a, 2023b, 2023c; Romero-Naranjo & Andreu-Cabrera et al., 2023; Romero-Naranjo & Llorca-Garnero, 2023; Romero-Naranjo & Romero-Naranjo, 2022; Sánchez et al., 2018; Sayago-Martínez et al., 2021; Salerno & Romero-Naranjo, 2022; Serna et al., 2018; Trives-Martínez & Vicente-Nicolás, 2013).

- Didactics (Arnau-Mollá & Romero-Naranjo, 2022e; Arnau-Mollá et al., 2022; Asurmendi & Romero-Naranjo, 2022; Conti & Romero-Naranjo, 2015, 2017; Cozzutti et al., 2014; Cozzutti, Blessano et al., 2017; De Munari et al., 2016; Di Russo & Romero-Naranjo, 2021a, 2021b, 2023; Di Russo et al., 2022; Gonzalez & Romero-Naranjo, 2022; Gonzalez et al., 2022; Gonzalez-Sanchez et al., 2021; Liendo-Cárdenas & Romero-Naranjo, 2022; Navarro-Maciá & Romero-Naranjo, 2023; Piqueres et al., 2018; Pozzo et al, 2015; Quarello et al., 2014; Romero-Naranjo, 2008a, 2015, 2019a, 2019b, 2019c, 2019d, 2019e, 2019f, 2019g, 2019h, 2019i, 2019j, 2019k, 2021a, 2021b, 2021c, 2021d, 2022b; Romero-Naranjo & Andreu-Cabrera; 2023a; Romero-Naranjo, Arnau-Mollá, Di Russo et al..., 2022; Romero-Naranjo, Arnau-Mollá, González, Liendo et al., 2022; Romero-Naranjo, Arnau-Mollá, González, Salerno et al., 2022; Romero-Naranjo & González, 2022a, 2022b; Romero-Naranjo & Sayago-Martínez, 2021a; 2021b).

In 2013, the first work on intervention in education through body percussion was found (Romero-Naranjo & Alonso-Sanz, 2013), as a result of which work of these characteristics began uninterruptedly until 2023 in the following areas and populations:

- Education
  - o Primary Education (Almoguera, 2019; Arnau-Mollá & Romero-Naranjo, 2020; Carretero-Martínez et al., 2014; Castelló et al., 2019; Cozzutti, Guaran et al., 2017; Díaz, 2016; García, 2020; Lima et al., 2016; Pérez, 2014; Riera & Casals, 2021; Romero-Naranjo, Pujalte-Cantó et al., 2023; Torró-Biosca et al., 2019; Yun & Myungia, 2020).
  - o Secondary education (Álvarez-Morales & Romero-Naranjo, 2019; Botella & Adell, 2016; Fabra-Brell & Romero-Naranjo, 2017b; Latre-Navas et al., 2019; Peker & Karagöz, 2021; Piqueres et al., 2019a, 2019b; Romero Naranjo, Sayago-Martínez et al., 2023).
  - o Initial training (Aycan, 2017; Chung, 2022; Garcías, 2021b; Garcías & et al., 2022; Romero-Naranjo & Alonso-Sanz, 2013).
  - o Lifelong learning (Garcías de Ves, 2021a, 2021c; Garcías & Joven, 2020).
  - o Primary and secondary education (Koka & Altuntaş, 2020; Piscazzi, 2015).
  - o University business education (Heldal et al., 2018).

- Special education

- Primary (Lotfi et al., 2018; Toksoy & BaŞar, 2017).
- Secondary (Sutela et al., 2020; Sutela et al., 2021).

- Music education

- Elementary conservatory (Ros-Silla et al., 2019).
- Intermediate conservatory (Moral et al., 2020).

- Active ageing

- Elderly (Crespo-Colomino et al., 2014; González et al., 2019; Pons-Terrés, Romero-Naranjo, FJ et al., 2014; Romero-Naranjo, 2014c).

- Therapy

- Adults (Romero-Naranjo et al., 2014; Sotelo et al., 2022).

In addition, in 2017, 2021 and 2022, articles appeared presenting a protocol-like research design on education on the one hand (Arnau-Mollá & Romero-Naranjo, 2022c; Fabra-Brell & Romero-Naranjo, 2017a; Marcuzzi & Romero-Naranjo, 2017; Jiménez-Molina et al., 2017; Moreno-Cebrian et al., 2017; Presti & Romero-Naranjo, 2017), and on rehabilitation/therapy on the other (Cavan et al., 2017; Iguasina & Saquisela, 2021; Salerno et al., 2017).

Talking about body percussion necessarily entails mentioning the BAPNE method and its creator, Phd. Francisco Javier Romero-Naranjo, as the leading exponents on the subject with 158 publications and 1173 citations. Of these documents, 43 are indexed in primary search engines, cited 550 times, and 115 in secondary search engines with 623 citations. It should be noted that he publishes 63 papers alone, 60 in secondary search engines cited 415 times, and three in primary search engines with 120 citations. This teaching and research trajectory of more than 20 years has been recognised with the culture prize of the city of Alicante as well as an Honorary Doctorate in Brazil in 2023.

The BAPNE method is continuously growing and has gone through seven different stages from its beginnings to the present (Arnau-Mollá & Romero-Naranjo, 2022d):

- 1st gestation stage (before 1998). Considered to be a phase of ignorance in which an attempt is made to do something different, but without the intention of creating a method.

- 2nd Stage 2001-2006. Birth. With the aim of differentiating his project (Body Music Body Percussion) from the musical methodologies that emerged at the beginning of the 20th century with the first publications of dossiers and compendiums of activities.

- 3rd Stage 2008-2013. Development and first period of foundation. In this stage is where he attributes the name BAPNE and bases his methodology on Howard Gardner's multiple intelligences.

- 4th Stage 2014-2016. Creation of the school and expansion. In this stage, interventions in international education congresses, as well as publications in English indexed in Wos, the creation of the first Masters on body percussion in Spain, Italy, Mexico and Costa Rica, and the

first quantitative research on intervention, as well as a first approach to executive functions.

- 5th Stage 2017-2018. Research designs and second period of substantiation. This stage is characterised by the progressive abandonment of multiple intelligences in favour of the stimulation of cognitive and executive functions, as well as the publication of research design articles by the students of the first promotion of the Master in Body Percussion and the beginning of interest in neuromotricity.

- 6th Phase 2019-2020. Quantitative intervention and third period of foundation. The main features of this stage are the quantitative intervention research focused on the stimulation of executive functions by the second graduating class of the Master of Body Percussion, and the extensive publication of books that substantiate neuromotricity and executive functions.

- 7th Phase 2021-2022. Continuation of the foundation and agglutination of the literature. In this stage, the methodology continues to be based on the executive functions and neuromotricity; bibliometric studies on body percussion appear; the first kinetic study is published; and two research studies are carried out, still pending data analysis, with a sample of N=298 and N=289 students of Didactics of Musical Expression of the Degree in Early Childhood Teaching of the Faculty of Education of the University of Alicante.

Until 2022 there was only one research group that wrote exclusively first-order papers on body percussion and the possible stimulation of cognitive and executive functions (Arnau-Mollá & Romero-Naranjo, 2022b). This is the BAPNE method research group with more than 45 publications in Wos. It is made up of 88 interdisciplinary professionals from the fields of Music, Psychology, Neurology, Neuropsychology, Music Therapy, Physiotherapy and Pedagogy, among others.

In 2023, also directed by Phd Romero-Naranjo, the official research group of the University of Alicante Neuromotricity and Motor Literacy (Neuromotricity) was constituted in the area of humanities, which presents the following lines of research:

1. Neuromotricity.
2. BAPNE method.
3. Body percussion, body expression, creativity and education.
4. Motor development and motor learning.
5. Ethnomusicology and movement.
6. Cognitive functions, executive functions and movement.
7. Eye tracking, electroencephalogram, functional magnetic resonance imaging, ergo-spirometry, electromyography and movement.
8. Motor literacy.
9. Developmental disorders, music, movement and physical activity.
10. Play, music, plastic arts, physical activity and sport. Congresses, symposiums and events.
11. Technical consultancy in neuromotricity and motor

literacy. BAPNE FIT.

12. Neuromotricity and digital competence.

13. Neuromotricity, clapping games, nursery rhymes and gender.

14. Neuromotricity and Alzheimer's, Parkinson's, ADHD, ASD and Brain Injury.

15. Neuromotricity in education. Mathematical competence. Learning a foreign language. Cognitive Solfege, performing arts and theatre (Universidad de Alicante, 2023).

This is a research group with a high level of activity, as in 2023 it has published ten first-order papers indexed in Wos. Among them are quantitative intervention studies with statistically significant results in selective attention in Primary Education (Romero-Naranjo, Pujalte-Cantó et al., 2023) and attention and anxiety in Secondary Education (Romero-Naranjo, Sayago-Martínez et al., 2023); ethnographic, on body percussion and traditional dances (Di Russo & Romero-Naranjo, 2023); neuromotricity and body schema, which presents the basis for the use of body percussion in physical education and sport sciences, as well as the possible benefits and contents of neuromotor work at kinaesthetic/anatomical, psychological, neurological/cognitive, ethnomusicological, musical, visual arts, creativity, evaluation and research levels (Romero-Naranjo, Andreu-Cabrera et al., 2023); theoretical justification on neuromotricity as an interdisciplinary resource (Romero-Naranjo, Andreu-Cabrera, 2023a); Theoretical-practical justification on physical condition and neuromotricity (Romero-Naranjo & Andreu-Cabrera, 2023b) and on the ten pillars of neuromotricity (Romero-Naranjo & Andreu-Cabrera, 2023c); bibliometric studies on dual-task and movement (Mas-Mas et al., 2023) and on traditional dances in Spain (Penalva et al., 2023); and the first case study that evaluates, through body percussion, cardiorespiratory aspects and ergo-spirometry or stress test with gas analysis, and that demonstrates that BAPNE FIT activities favour and increase heart rate and maximum oxygen consumption (Romero-Naranjo & Llorca-Garnero, 2023).

On the other hand, in relation to independent authors or those who do not form part of any exclusive research group on body percussion, seven documents appeared in 2023, five first-order and two second-order, found in secondary search engines.

First order, and in the field of education, papers were published on the creation of a mobile application for the autonomous practice of body percussion outside school, which aimed to reinforce the lack of time available for music in primary education, which does not allow students to receive the best teaching (Bravo, 2023); the creation of video-based body percussion activities based on Dalcroze's eurhythmics for online music classes enforced by COVID 19 (Dihita & Aria, 2023); body percussion as a means of rhythmic education for preschoolers (Леоненко, 2023); and the development of musical and rhythmic abilities and motor coordination of children in music classes and extracurricular activities with the help of body percussion

(Аюбова, 2023). Also of first order, but in the gerontological field, a quantitative intervention study was published with statistically significant results on the effect of body percussion activities on balance in the elderly (Siminghalam et al., 2023).

In reference to the documents found in 2023 of second order and related to Education, studies were published on methods of developing children's rhythmic thinking in vocal ensembles that used, among others, body percussion activities (Стоильская, 2023); and an analysis of the Youtube channel Musication that searched for the most significant musical elements in musicograms to be applied in Infant, Primary and Secondary Education (López et al., 2023).

The aim of this study is to present a bibliometric study that reflects the state of the art of body percussion from 2001 to 2022 through the existing international scientific-academic publications indexed in the main primary and secondary search engines and that unravels the impact and role of the genre in research on the subject. In addition, we aim to find out the participation of authors according to their gender, as well as the type of collaboration between them by answering the following research questions:

Q1: What is the chronological evolution of productivity and citation?

Q2: What is the productivity and citation by country?

Q3: What is the productivity and citation by language?

Q4: What is the productivity and citation by publisher?

Q5: What is the productivity and citation by conference?

Q6: What is the productivity and citation by journals?

Q7: What is the prevalence of document types?

Q8: How many citations per paper were obtained?

Q9: What is the main number of authors per paper?

Q10: What is the h-index of the authors in the selected sample?

Q11: What is the scientific output of the authors?

Q12: Who are the most representative authors?

Q13: Which papers were the most cited?

Q14: What is the productivity per research group?

Q15: What type of work prevails?

Q16: What research designs predominate in intervention work?

Q17: What types of assessment instruments are used in intervention work?

Q18: Which settings and populations are most researched in intervention work?

## Methodology

According to the classification presented by Montero and León (2005) on the description and classification of research methodologies in Psychology, this study responds to an ex post facto retrospective design in the bibliometric historiographic variant. This type of study tests relationships between variables in past situations in which the units of analysis are objects, generally documents,

rather than people. Moreover, a frequency analysis was applied to deal with the selected variables.

### Sample

A sample of N=245 documents published over a time period of 22 years (2001-2022) was selected. The final sample consisted of n=72 papers extracted from two primary search engines (Wos/Scopus) and n=173 from 11 secondary search engines (Dialnet, JSTOR, RUA, Springer, DOAJ, DergiParkAkademi, Redalyc, CORA TDX, Oapen, Open Access, REDIB, and EBSCO), as well as four web pages that hosted documents that, although known to exist, did not appear in any database.

### Materials and instruments

The resources offered by the aforementioned search engines were used to search, sift and select the information, taking advantage of the possibilities of filtering and creating lists, as well as the options of exporting the information to the bibliographic managers Refworks and Mendeley for the creation of references. In addition, a database was created with Microsoft Excel to which all the information was transferred for subsequent analysis and the creation of tables and figures.

### Procedure

The search for information was carried out in the databases included under the subscription of the University of Alicante in the period from November 2021 to January 2022 applying the following search strategy limited in time until 2022: ("Body percussion") or ("Bodypercussion") or ("Percusión corporal") or ("Percusió corporal") or ("BAPNE") or ("Body music") or ("Body music") or ("Bodymusic").

Inclusion criteria were established for the documents found in order to be selected and included in the final sample. These were: 1) Material published and edited up to 2022 that dealt exclusively with body percussion (1st order), or at least dealt with it considerably at a descriptive level as part of a study, or conducted and evaluated the impact of body percussion activities as an independent variable (2nd order); and 2) Material that presented in the title, abstract or key words a term from the search strategy.

The information was then screened in all search engines starting with the primary search engines and saving the selected documents in result lists and in the bibliographic managers Refworks and Mendeley to determine which database would be taken as the main one according to the number of valid results it presented. The same procedure was then followed for the secondary search engines.

Once the information had been selected in all search engines, a comparison of duplicates was carried out. The main databases used were Wos in the primary search engines and Dialnet in the secondary search engines. Therefore, any document found in primary or secondary search engines that was indexed in Wos was counted in Wos and the others were excluded. Similarly, any document

found in any secondary search engine that was indexed in Dialnet was counted in Dialnet and excluded from the other search engines.

The final selection of documents extracted from primary and secondary search engines is presented in Table 1.

Table 1.  
Final selection of documents

Search engine/Database	Doc	% Sample
Secondary	173	70.61%
Dialnet	107	43.67%
BAPNE	15	6.12%
JSTOR	14	5.71%
RUA	8	3.27%
ERPA 2021	6	2.45%
SPRINGER	5	2.04%
DOAJ	4	1.63%
DergiParkAkademi	4	1.63%
Redalyc	4	1.63%
CORA TDX	1	0.41%
Oapen. Open Acces	1	0.41%
Procompal	1	0.41%
REDIB	1	0.41%
EBSCO	1	0.41%
El Argonauta	1	0.41%
Primary	72	29.39%
WOS	68	27.76%
SCOPUS	4	1.63%
Total	245	100.00%

Once the duplicates had been compared and the final selection of documents had been made, a database was created in the Microsoft Excel programme in which all the information gathered in the search engines was aggregated for classification, analysis and subsequent extraction of results. The columns contained information criteria to be extracted from each document, such as: reference, research group, index of databases, databases, year of publication, languages; publishers; countries; types of documents; names of conferences; journals; research areas; citations; sum of citations; years of citations; number of authors; position of each author in the document; authors alone; gender of authors; type of collaboration between authors (male only, female only, mixed), h-index of authors in this sample; order of treatment; type of intervention; methodology; research approach; research design; type of group; assessment; assessment instruments; subject matter; population; and line of research.

In the classification and breakdown of the information, we encountered some problems in the counting of authors and citations that we had to solve. With regard to authors, we often found different signatures to refer to the same author. Specifically, these problems were the use of one or two surnames indistinctly; the use or not of hyphens between surnames; compound surnames; and the use of accents. This distorted the results, as it attributed a higher number of authors to the analysis, as well as a lower number of published documents to each author affected by several signatures. To solve this problem, coding criteria were established to be followed for all authors without exception, so that they could be counted without duplication. These were: 1) Write the two surnames separated by a hyphen. 2) Exclude accents. 3) Always write the compound surname. 4) Do not include a full stop between the initials of compound names. With regard to citations, we encountered the

problem of unifying the accounting, as the metric system is different in Wos, Scopus and Dialnet. Therefore, we used the citation system offered by Google Scholar, which allowed us to compare and classify the total and partial citations by year obtained by each document and attribute them to each of the authors who signed the papers.

Finally, after extracting all the information from the search engines and classifying it in the Excel database, the data analysis was carried out using pivot tables, in which the information was mixed and triangulated to obtain the results and to express them in the text of the work, as well as in the tables and figures resulting from this analysis.

## Results

### Documents by year

A total of 245 documents were found in this research from 2001 to 2022 with an average age of publications of 6.18 years old. No publications were found in three of the 22 years that emerged in the analysis (2002, 2003 and 2007). Uninterrupted publication annually until 2022 started in 2008. The range of publications ranged from one to 37 with the most prolific years being 2019 with 37 papers (15.10%) and 2014 with 32 (13.06%). The last ten years (2013-2022) saw an increase in annual output to more than 10 papers per year with an average publication rate of 21.80 papers per year.

On the other hand, the 245 documents found received a total of 1565 citations with no concordance found between the years with the highest production of documents and the most cited years. The range of citations per year ranged from zero from 2001 to 2008 to 516 in 2022 (32.97%) with these being the least and most cited years. Four years were found with less than ten citations (0.38%), four years with between 39 and 94 (15.91%),

four more years between 104 and 162 (34.89%), and two years between 248 and 516 (48.82%). On the other hand, with regard to the year of publication of the documents, it was found that the range of citations ranged from zero for those written in 2005 to 315 for those written in 2013.

In reference to the type of collaboration, papers written only by men predominated with 120 documents (48.99%), followed by mixed papers with 91 documents (37.14%), and papers written only by women with 34 documents (13.88%). The years with the highest production according to the type of collaboration were: 2019 with 19 papers written only by men (7.76%), 2014 with 20 mixed papers (8.16%), and 2019 and 2021 with seven papers each year published only by women (2.86% each year).

In terms of the number of authors, a total of 188 authors were found, with a predominance of females (53.19% of female authors (100) over 46.81% of male authors (88). In the selected sample (245), the 188 authors appeared a total of 540 times, taking into account that each author could participate in more than one document. Male participation predominated with 60.74% (328 participations) compared to 39.26% of female participation (212). The year with the highest presence of male authors was 2022 with 47 participations (8.70%) and 2014 was the year with the highest female participation with 212 (39.26%).

The participation of women did not start until 2005 with a mixed paper in which two women participated, and until 2010 alone. Moreover, female participation was only equal to male participation in 2005 and 2010 and higher in 2014 and 2015, i.e. in four of the 19 years in which papers were published.

Table 2 presents in detail the number of papers, citations, type of collaboration and participation according to the gender of the authors in the years analysed.

Table 2.

Documents by year

Year	Docs	% Sam	Cit.	% Cit.	O.M	% O.M	O.W	% O.W	Mix	%Mix	M.P.	% M.P	F.P	% F.P
2001	1	0.41%	6	0.38%	1	0.41%					1	0.19%		
2004	1	0.41%	15	0.96%	1	0.41%					1	0.19%		
2005	1	0.41%	0	0.00%					1	0.41%	2	0.37%	2	0.37%
2006	2	0.82%	9	0.58%	2	0.82%					2	0.37%		
2008	3	1.22%	71	4.54%	3	1.22%					3	0.56%		
2009	1	0.41%	12	0.77%	1	0.41%					1	0.19%		
2010	3	1.22%	42	2.68%	1	0.41%	1	0.41%	1	0.41%	2	0.37%	2	0.37%
2011	7	2.86%	32	2.04%	4	1.63%	1	0.41%	2	0.82%	6	1.11%	3	0.56%
2012	8	3.27%	80	5.11%	6	2.45%	2	0.82%			6	1.11%	2	0.37%
2013	18	7.35%	315	20.13%	13	5.31%	1	0.41%	4	1.63%	23	4.26%	5	0.93%
2014	32	13.06%	286	18.27%	9	3.67%	3	1.22%	20	8.16%	46	8.52%	50	9.26%
2015	15	6.12%	72	4.60%	5	2.04%	3	1.22%	7	2.86%	17	3.15%	24	4.44%
2016	14	5.71%	65	4.15%	6	2.45%	3	1.22%	5	2.04%	15	2.78%	9	1.67%
2017	22	8.98%	214	13.67%	10	4.08%	1	0.41%	11	4.49%	34	6.30%	23	4.26%
2018	12	4.90%	39	2.49%	4	1.63%	1	0.41%	7	2.86%	28	5.19%	14	2.59%
2019	37	15.10%	131	8.37%	19	7.76%	7	2.86%	11	4.49%	46	8.52%	30	5.56%
2020	17	6.94%	79	5.05%	11	4.49%	1	0.41%	5	2.04%	20	3.70%	9	1.67%
2021	23	9.39%	72	4.60%	13	5.31%	7	2.86%	3	1.22%	28	5.19%	13	2.41%
2022	28	11.43%	25	1.60%	11	4.49%	3	1.22%	14	5.71%	47	8.70%	26	4.81%
Total	245	100%	1565	100%	120	48.98%	34	13.88%	91	37.14%	328	60.74%	212	39.26%

### Documents by country

A total of 19 countries were found to have published on the topic. Six of them published only one paper each (2.45%) and a further six published two papers each (4.90%). The most productive country was Spain with 159 papers (64.90%) followed by the UK with 39 (15.92%).

In terms of number of citations, four countries received no citations, seven between two and nine (2.49%) and six more between 19 and 33 citations (9.07%). The two most cited countries accounted for 80.43% of the citations, Spain with 899 (57.44%) and the United Kingdom with 485 (30.99%).

In terms of collaboration between authors, six countries published mostly papers written by men only (Spain, Turkey, Chile, South Korea and Mexico), five countries with papers written by women only (Germany/UK, USA, Brazil, Russia and Ecuador), and eight countries with a predominance of mixed papers (UK, Germany, France, Greece, India, Russia, Italy and Iran). Spain is the country with the highest number of documents of each type of collaboration, namely 94 written only by men (38.37%), 16 written only by women (6.53%) and 49 mixed (20.00%).

With regard to participation according to the gender of

the authors, it was found that male participation predominated in nine countries (Spain, United Kingdom, Turkey, South Korea, Netherlands, Greece, Mexico, Italy and Iran), and female participation in another six (Germany/United Kingdom, USA, Germany, Chile, Russia and Ecuador). On the other hand, equal participation of men and women was found in four countries (Brazil, France, India and Colombia).

Table 3 presents in detail the documents, citations, type of collaboration and participation according to the gender of the authors in the emerging countries in this study.

Table 3.

Documents by country

Countries	Docs	% Sam	Cit.	% Cit.	O.M	% O.M	O.W	% O.W	Mix	% Mix	M.P.	% M.P	F.P	% F.P
Spain	159	64.90%	899	57.44%	94	38.37%	16	6.53%	49	20.00%	210	38.89%	119	22.04%
United Kingdom	39	15.92%	485	30.99%	13	5.31%	3	1.22%	23	9.39%	68	12.59%	51	9.44%
Turkey	11	4.49%	24	1.53%	6	2.45%	2	0.82%	3	1.22%	14	2.59%	8	1.48%
Germany/United Kingdom	6	2.45%	4	0.26%			4	1.63%	2	0.82%	3	0.56%	7	1.30%
USA	5	2.04%	24	1.53%	1	0.41%	3	1.22%	1	0.41%	2	0.37%	4	0.74%
Brazil	4	1.63%			1	0.41%	2	0.82%	1	0.41%	4	0.74%	4	0.74%
Germany	3	1.22%					1	0.41%	2	0.82%	3	0.56%	4	0.74%
Chile	2	0.82%	7	0.45%	1	0.41%			1	0.41%	2	0.37%	1	0.19%
South Korea	2	0.82%	2	0.13%	2	0.82%					3	0.56%		
France	2	0.82%							2	0.82%	2	0.37%	2	0.37%
Netherlands	2	0.82%	21	1.34%	1	0.41%	1	0.41%			2	0.37%	1	0.19%
Greece	2	0.82%	9	0.58%					2	0.82%	4	0.74%	2	0.37%
India	2	0.82%	33	2.11%					2	0.82%	3	0.56%	3	0.56%
Mexico	1	0.41%	21	1.34%	1	0.41%					1	0.19%		
Russia	1	0.41%					1	0.41%					1	0.19%
Colombia	1	0.41%	19	1.21%					1	0.41%	1	0.19%	1	0.19%
Ecuador	1	0.41%	7	0.45%			1	0.41%					2	0.37%
Italy	1	0.41%	8	0.51%					1	0.41%	3	0.56%	1	0.19%
Iran	1	0.41%	2	0.13%					1	0.41%	3	0.56%	1	0.19%
Total	245	100.00%	1565	100.00%	120	48.98%	34	13.88%	91	37.14%	328	60.74%	212	39.26%

### Documents by language

In the selected sample (245), 210 documents were written in 10 different languages (85.71%) plus 24 papers (9.80%) written in four languages (Spanish, English, French and Italian) and 11 documents (4.49%) written in two languages (Spanish and English). Papers written in Spanish predominated with 99 documents (40.41%) followed by 92 in English (37.55%), 24 written in four languages (9.80%), and 11 bilingual (4.49%).

Equality was found between the papers written only by men and only by women in terms of the number of languages used (eight), taking into account the languages included in the bilingual and quadrilingual papers. On the other hand, a total of five different languages were used in the mixed papers. Spanish predominated in the 45 papers written by men only (18.37%) and in the 16 written by women only (6.53%), while English predominated in the mixed papers with 47 papers (19.18%).

In terms of citations, the only papers that exceeded the overall average (6.39) were the 120 papers written only by men (7.57), while the mixed papers and those written only by women were lower.

With regard to citations, it was found that 92.33% of the citations (1445) were received by papers written in English with 734 citations (46.90%) followed by those written in Spanish with 711 citations (45.43%). On the other hand, there were five languages that did not receive any citations in any type of collaboration (Portuguese,

Galician, German, Italian and Russian) and one in those written by women only (Turkish).

In terms of the type of collaboration, the only papers that exceeded the overall mean number of citations per paper (6.39) were the 120 papers written by men only (7.57), with mixed papers and those written by women only (5.95 and 3.41) being below. Similarly, the only languages that exceeded the average number of citations per paper were those written in English (7.98) and Spanish (7.18).

With regard to collaboration according to the gender of the authors, male participation predominated with 159 participations in papers written only by men (29.44%) compared to those written only by women with 38 (7.04%). On the other hand, in the mixed papers, female participation predominated with 174 participations (32.22%) compared to 169 male participations (31.30%).

The languages with the highest participation were, in the case of men, English with 65 participations in the papers written only by men (12.04%) and 90 in the mixed papers (16.67%), and in the case of women, Spanish with 18 participations in the papers written only by women (3.33%) and English with 87 participations in the mixed papers (16.11%).

Table 4 presents in detail the documents by language, as well as the number of citations, the type of collaboration and the participation according to the gender of the authors.

Table 4.  
Documents by language

Colaboration	Language	Docs.	% Sam.	Cit.	% Cit	Average cit.	M.P.	% M.P.	F.P	% F.P	
Only men		120	48.98%	908	58.02%	7.57	159	29.44%			
	Spanish	45	18.37%	480	30.67%	10.67	50	9.26%			
	English	33	13.47%	312	19.94%	9.45	65	12.04%			
	4 Languages	24	9.80%	77	4.92%	3.21	24	4.44%			
	2 Languages	11	4.49%	29	1.85%	2.64	11	2.04%			
	Turkish	2	0.82%	8	0.51%	4.00	2	0.37%			
	Korean	2	0.82%	2	0.13%	1.00	3	0.56%			
	Portuguese	1	0.41%	0	0.00%	0.00	2	0.37%			
	Gallego	2	0.82%	0	0.00%	0.00	2	0.37%			
Mixed		91	37.14%	541	34.57%	5.95	169	31.30%	174	32.22%	
	English	47	19.18%	338	21.60%	7.19	90	16.67%	87	16.11%	
	Spanish	38	15.51%	200	12.78%	5.26	71	13.15%	79	14.63%	
	Turkish	2	0.82%	3	0.19%	1.50	2	0.37%	2	0.37%	
	German	2	0.82%	0	0.00%	0.00	3	0.56%	3	0.56%	
	Portuguese	2	0.82%	0	0.00%	0.00	3	0.56%	3	0.56%	
Only women		34	13.88%	116	7.41%	3.41			38	7.04%	
	English	12	4.90%	84	5.37%	7.00			13	2.41%	
	Spanish	16	6.53%	31	1.98%	1.94			18	3.33%	
	Catalan	1	0.41%	1	0.06%	1.00			1	0.19%	
	German	1	0.41%	0	0.00%	0.00			1	0.19%	
	Russian	1	0.41%	0	0.00%	0.00			1	0.19%	
	Turkish	1	0.41%	0	0.00%	0.00			2	0.37%	
	Portuguese	1	0.41%	0	0.00%	0.00			1	0.19%	
		Italian	1	0.41%	0	0.00%	0.00			1	0.19%
	General total	11 Languages	245	100%	1565	100.00%	6.39	328	60.74%	212	39.26%

Table 5.  
Documents by publisher

Colaboration	Publisher	Docs.	% Sam.	Cit.	% Cit.	Av.Cit.	M.P.	% M.P.	F.P	% F.P	
Only men		64	26.12%	236	15.08%	3.69	76	14.07%			
	Body Music-Body Percussion Press	36	14.69%	106	6.77%	2.94	36	6.67%			
	Universidad de Alicante	7	2.86%	95	6.07%	13.57	10	1.85%			
	Dykinson, S.L.	5	2.04%				12	2.22%			
	Grupo Stellae/IARTEM	2	0.82%				2	0.37%			
	ASIRE	2	0.82%	2	0.13%	1.00	2	0.37%			
	Procompal Publicaciones	2	0.82%	3	0.19%	1.50	2	0.37%			
	Ramón Torres Gosálvez	2	0.82%	6	0.38%	3.00	2	0.37%			
	Ediciones Aljibe	1	0.41%				1	0.19%			
	Adaya Press	1	0.41%	4	0.26%	4.00	1	0.19%			
	Silex Ediciones	1	0.41%				1	0.19%			
	Universidad de Santiago de Compostela	1	0.41%				1	0.19%			
	European Proceedings of Social and Behavioural Sciences	1	0.41%	7	0.45%	7.00	2	0.37%			
	Universidad Pontificia de Salamanca	1	0.41%	1	0.06%	1.00	1	0.19%			
	Fernando Ramos	1	0.41%	12	0.77%	12.00	1	0.19%			
	Graó	1	0.41%				2	0.37%			
Mixed		43	17.55%	141	9.01%	3.28	88	16.30%	93	17.22%	
	Universidad de Alicante	13	5.31%	97	6.20%	7.46	26	4.81%	27	5.00%	
	Dykinson, S.L.	9	3.67%				20	3.70%	17	3.15%	
	Universidad de Murcia	9	3.67%	28	1.79%	3.11	27	5.00%	27	5.00%	
	EDP Sciences	2	0.82%				2	0.37%	2	0.37%	
	Springer Nature	2	0.82%	3	0.19%	1.50	3	0.56%	3	0.56%	
	Letra de palo	2	0.82%	3	0.19%	1.50	2	0.37%	5	0.93%	
	Libargo	2	0.82%	5	0.32%	2.50	3	0.56%	5	0.93%	
	REDINE	2	0.82%	5	0.32%	2.50	3	0.56%	3	0.56%	
	UNED	1	0.41%				1	0.19%	1	0.19%	
	Universidad de Almería	1	0.41%				1	0.19%	3	0.56%	
	Only women		14	5.71%	15	0.96%	1.07			15	2.78%
		Springer Nature	4	1.63%	1	0.06%	0.25			4	0.74%
Universidad de Alicante		3	1.22%						3	0.56%	
University of Illinois Press		2	0.82%						2	0.37%	
Dykinson, S.L.		2	0.82%	6	0.38%	3.00			2	0.37%	
Roulegde		1	0.41%	6	0.38%	6.00			1	0.19%	
Transcript-verlag		1	0.41%						1	0.19%	
Actividad Física y Expresión Corporal (AFYEC)		1	0.41%	2	0.13%	2.00			2	0.37%	
General total	27 publishers	121	49.39%	392	25.05%	6.39	164	30.37%	108	20.00%	

### Documents by publisher

A total of 27 editorials were found in which 121 papers were published (49.39%) of which 64 were written by males only (26.12%), 43 mixed (17.55%) and 14 by females only (5.71%). These papers received a total of 392 citations (22.05%) and a total of 164 male (30.37%) and 108 female (20.00%) entries emerged.

The most productive publishers were Body Music-Body Percussion Press with 36 papers (14.69%) written exclusively by males and the University of Alicante with 23 papers (9.39%) of which 13 were mixed (5.31%), seven

written by males only (2.86%) and three by females only (1.22%). On the other hand, 13 of the 27 publishers were found to have published only one paper each (5.31%).

In terms of the number of publishers by type of collaboration, male-only papers predominated with 64 papers (26.12%) published in 15 of the 27 publishers (55.55%) with Body Music-Body Percussion Press being the most productive with 36 papers (14.69%) followed by the 43 mixed papers (17.55%) published in 10 of the 27 publishers. 55%) published in 10 of the 27 publishers (37.04%) with the University of Alicante predominating

with seven papers (2.86%) and the 14 papers (5.71%) published in seven of the 27 publishers written only by women in which the 4 papers published by Springer Nature predominate (1.63%).

In terms of citations, a total of 392 (25.05%) were obtained, ranging from zero to 192 citations per publisher. There were 10 publishers with no citations and 15 between one and 28 citations. The most cited publisher was the University of Alicante with 192 citations (12.27%) and overall, 24 of the 27 publishers (88.88%) did not exceed the average number of citations per document of 6.39. Documents written by men only were the most cited with 236 citations (15.08%), with Body Music-Body Percussion Press being the most representative with 106 citations (6.77%). Next, mixed papers received a total of 141 citations (9.01%) and the most cited publisher was the University of Alicante with 97 citations (6.20%). Finally, articles written by women only received 15 citations (0.96%) with the most cited publishers being Dykinson, S.L and Roulegde with six citations each (0.38%).

As for the participation of authors according to gender, a total of 272 participations (50.37%) were found, with male participation predominating (30.37%) as opposed to female participation (20.00%). The highest participation of authors was found in the 181 participations (33.52%) of the mixed papers with a higher participation of females (17.22%) than males (16.30%), predominantly in four of the 10 editorials that emerged. On the other hand, in terms of works written only by men or only by women, male participation predominated with 76 participations (14.07%) compared to female participation with 15 (2.78%).

Table 5 shows in more detail the list of documents by publisher, as well as the citations, the type of collaboration and the participation of the authors according to gender.

#### *Documents by congress*

A total of 27 congresses were found at which 78 papers were published (31.84%) of which 45 were mixed (18.37%), 30 written by men only (12.24%), and three by women only (1.22%). These papers received a total of 666 citations (42.56%) and a total of 136 male (25.19%) and 100 female (18.52%) participations emerged.

The conference with the highest number of publications was the 7th International Conference on Intercultural Education - Education, Health and ICT - From a Transcultural Perspective (EDUHEM) with 12 papers published (4.90%), six of them mixed (2.45%) and another six by males only (2.45%). On the other hand, 15 congresses were found in which only one paper was published in each one (6.12%), 12 of them mixed (4.90%) and three written only by men (1.22%).

With regard to the type of collaboration, it was found that papers written only by men participated in the largest number of congresses, 18 (66.66% of the congresses), while those written only by men participated in 15 (55.55%) and those written only by women in two

(7.41%).

In terms of citations, the most cited conferences were the 7th International Conference on Intercultural Education - Education, Health and ICT - From a Transcultural Perspective (EDUHEM) with 162 citations (10.35%) followed by the ERPA International Congress on Education (ERPA CONGRESS 2014) with 118 (7.54%). On the other hand, four congresses were found with no citations, 11 between two and 10, six between 12 and 40, and three between 59 and 86.

The most cited types of collaboration were mixed papers with 369 citations (23.58%) with the most cited congress being ERPA CONGRESS 2014 with 118 citations (7.54%), followed by papers written only by men with 96 (6.13%), all of them received in EDUHEM (6.13%), while papers written only by women did not receive any citations.

Overall, the average number of citations per paper (6.39) was exceeded by both mixed (8.20) and male-only papers (9.90). More specifically, of the 15 conferences that published mixed papers, seven (25.96%) exceeded the average number of citations, while of the 18 that published papers written only by men, 10 (37.04%) exceeded the average number of citations.

In reference to the 236 author participations according to gender (43.70%), 53 male participations (9.81%) were found in papers written only by men and three female participations (0.56%) in papers written only by women. On the other hand, in the mixed papers there were more female than male participations, 97 female (17.96%) and 83 male (15.37%). In these, equality between the gender of authors predominated in eight of the 15 congresses (29.63%), followed by a higher number of female participation in four of the 15 (14.81%) and male participation in three of the 15 (11.11%).

Table 6 shows in greater detail the conferences found with the number of publications and citations, the type of collaboration and the participation of the authors according to gender.

#### *Documents by journal*

A total of 51 journals from 17 countries were found in which 109 papers (44.49%) were published, including 72 articles (29.39%), 35 proceedings papers (14.29%) and two reviews (0.82%). The most prolific journals were the 21 Spanish journals with 43 papers (17.55%) followed by the 7 UK journals with 37 papers (15.10%).

The 46 papers written by men only (18.78%) and the 46 mixed (18.78%) were equally predominant compared to the 17 written by women only (6.94%). At the same time, there was a greater presence of men than women, with 141 participations (26.11%) for men and 98 (18.15%) for women. On the other hand, in the mixed papers, there was a greater presence of women with 78 participations (14.44%) compared to 76 for men (14.07%).

Of the 51 journals found, 19 were included in the 2022 Scimago Journal Rank (37.25%). They came from eight countries and published a total of 51 papers (20.82%). The

h-index of the journals ranged from three to 67, with five being the most representative. Spain had the highest number of journals (seven) while the UK had the most prolific journal with 26 papers (10.61%), the most cited journal with 350 (22.36%) and the highest h-index (67).

The predominant quartiles were Q2 with six journals (31.58%) followed by Q1 and Q3 with five journals each (26.32% each quartile). Four subject areas were found in these journals, with Arts and Humanities being the most representative (9) followed by Social Sciences (7). In

addition, seven different categories were found, the most representative being Music, present in 8 journals (42.11%) followed by Education in 5 (26.32%).

The most prolific journals were Procedia-Social and Behavioral Sciences with 26 papers (10.61%) and Retos-Nuevas Tendencias en Educación Física, Deporte y Recreación with 6 papers (2.45%).

Table 7 shows the 19 journals included in the Scimago Journal Rank 2022.

Table 6. Documents by congress

Colaboration	Docs.	% Sam.	Cit.	% Cit.	Av.Cit.	M.P.	% M.P.	F.P	% F.P
Mixed	45	18.37%	369	23.58%	8.20	83	15.37%	97	17.96%
ERPA International Congress on Education (ERPA CONGRESS 2014)	9	3.67%	118	7.54%	13.11	15	2.78%	19	3.52%
XII Jornadas de redes de investigación en docencia universitaria	7	2.86%	63	4.03%	9.00	17	3.15%	20	3.70%
8th International Conference on Intercultural Education / International Conference on Transcultural Health (EDUIHEM)	6	2.45%	49	3.13%	8.17	18	3.33%	14	2.59%
7th International Conference on Intercultural Education - Education, Health and ICT - From a Transcultural Perspective (EDUIHEM)	6	2.45%	66	4.22%	11.00	9	1.67%	12	2.22%
Innovación y enseñanza en educación Primaria	3	1.22%	5	0.32%	1.67	5	0.93%	12	2.22%
ERPA International Congresses on Education 2015 (ERPA 2015)	2	0.82%	9	0.58%	4.50	4	0.74%	2	0.37%
ERPA 2022	2	0.82%				2	0.37%	2	0.37%
Eduvatic 2019 conference proceedings. 4th Virtual International Conference on Education, Innovation and ICT: 18-19 December, 2019	2	0.82%	5	0.32%	2.50	3	0.56%	3	0.56%
XI Jornadas de Redes de Investigación en Docencia Universitaria	2	0.82%	20	1.28%	10.00	2	0.37%	2	0.37%
Fronteras reales, fronteras imaginadas	1	0.41%	2	0.13%	2.00	1	0.19%	4	0.74%
IX Jornades de xarxes d'investigació en docència universitària	1	0.41%	7	0.45%	7.00	1	0.19%	1	0.19%
6th International Conference on Intercultural Education - Education and Health - From a Transcultural Perspective (Eduhem)	1	0.41%	17	1.09%	17.00	1	0.19%	1	0.19%
XIII Jornadas de redes de investigación en docencia universitaria	1	0.41%	4	0.26%	4.00	2	0.37%	2	0.37%
4th International Conference on Movement and Computing (MOCO)	1	0.41%	4	0.26%	4.00	1	0.19%	1	0.19%
ERPA International Congresses On Education (ERPA 2021)	1	0.41%				2	0.37%	2	0.37%
Only men	30	12.24%	297	18.98%	9.90	53	9.81%		
7th International Conference on Intercultural Education - Education, Health and ICT - From a Transcultural Perspective (EDUIHEM)	6	2.45%	96	6.13%	16.00	15	2.78%		
ERPA International Congresses On Education (ERPA 2021)	5	2.04%	13	0.83%	2.60	13	2.41%		
XI Jornadas de Redes de Investigación en Docencia Universitaria	4	1.63%	66	4.22%	16.50	7	1.30%		
Innovaciones metodológicas en docencia universitaria: Resultados de investigación	1	0.41%	3	0.19%	3.00	1	0.19%		
I congreso internacional y V congreso psicoeducativo. Educando el futuro	1	0.41%				1	0.19%		
VII Jornades de música: Barcelona, Spain	1	0.41%	12	0.77%	12.00	1	0.19%		
6th International Conference on Intercultural Education - Education and Health - From a Transcultural Perspective (Eduhem)	1	0.41%	23	1.47%	23.00	1	0.19%		
7th World Conference on Educational Sciences	1	0.41%	12	0.77%	12.00	2	0.37%		
European Proceedings of Social and Behavioural Sciences (OPIICS 2019)	1	0.41%	7	0.45%	7.00	2	0.37%		
8th International Conference on Intercultural Education / International Conference on Transcultural Health (EDUIHEM)	1	0.41%	10	0.64%	10.00	2	0.37%		
II congreso galego de investigación en ciencias da educación	1	0.41%				1	0.19%		
Actas de las ponencias Con Euterpe	1	0.41%	3	0.19%	3.00	1	0.19%		
Investigación y propuestas innovadoras de redes UA para la mejora docente	1	0.41%	17	1.09%	17.00	1	0.19%		
Cyprus International Conference on Educational Research (CY-ICER)	1	0.41%	8	0.51%	8.00	1	0.19%		
X Jornades de Xarxes d'Investigació en Docència Universitària	1	0.41%	13	0.83%	13.00	1	0.19%		
Danza, Educación e Investigación. Pasado y Presente	1	0.41%				1	0.19%		
5th World Conference on Educational Sciences	1	0.41%	10	0.64%	10.00	1	0.19%		
Eduvatic 2019 conference proceedings. 4th Virtual International Conference on Education, Innovation and ICT: 18-19 December, 2019	1	0.41%	4	0.26%	4.00	1	0.19%		
Only women	3	1.22%						3	0.56%
XII Jornadas de redes de investigación en docencia universitaria	2	0.82%						2	0.37%
XIII Jornadas de redes de investigación en docencia universitaria	1	0.41%						1	0.19%
General total	78	31.84%	666	42.56%	6.39	136	25.19%	100	18.52%

Table 7. Impact of journals

Journal	Doc.	Cit.	SJR 2022	Q SJR 2022	Subject area SJR	Category	h index SJR 2022	Country
Procedia-Social and Behavioral Sciences	26	350	-	-	Social Sciences	Social Sciences	67	United Kingdom
New Ideas in Psychology	1	2	0.98	Q1	Psychology	Miscellaneous	48	United Kingdom
Revista de Psicología del Deporte	1	0	0.25	Q4	Health Professions	Sport Science	32	Spain
Journal of Human Sport and Exercise	2	101	0.22	Q4	Health Professions	Sport Science	30	Spain

Research Studies in Music Education	1	6	0.81	Q1	Social Sciences	Education	29	United Kingdom
British Journal of Music Education	1	21	0.74	Q1	Social Sciences	Education	26	United Kingdom
Retos-Nuevas Tendencias en Educación Física Deporte y Recreación	6	35	0.34	Q3	Social Sciences	Education	24	Spain
Bijdragen Tot de Taal-, Land- En Volkenkunde	1	21	0.19	Q2	Social Sciences	Cultural Studies	17	Netherlands
Yearbook for Traditional Music	1	12	0.11	Q3	Arts and Humanities	Music	13	United States
Musicology Australia	1	40	0.11	Q3	Arts and Humanities	Music	10	United Kingdom
Arte Individuo y Sociedad	1	0	0.35	Q1	Arts and Humanities	Visual Arts and Performing	10	Spain
Revista Musical Chilena	1	0	0.13	Q2	Arts and Humanities	Music	6	Chile
Cuadernos de Música, Artes Visuales y Artes Escénicas	1	19	0.13	Q2	Arts and Humanities	Music	5	Colombia
Musica Hodie	1	0	0.2	Q2	Arts and Humanities	Music	5	Brazil
Revista Electrónica de Leeme	1	23	0.38	Q1	Arts and Humanities	Music	5	Spain
Artseduca	2	1	0.24	Q3	Social Sciences	Education	4	Spain
Revista Interuniversitaria de Formación del Profesorado	1	4	0.21	Q3	Social Sciences	Education	4	Spain
Music Art and Education	1	0	0.14	Q2	Arts and Humanities	Music	3	Russia
Opus	1	0	0.14	Q2	Arts and Humanities	Music	3	Brazil

### Documents by type of document

A total of eight different types of documents were found. Book chapters predominated with 80 publications (32.65%). The most cited document type was the article with 600 citations (38.34%). The highest participation of authors according to gender was observed in the book chapter with a male participation of 121 (22.41%) and a female participation of 102 (18.88%).

With regard to the type of collaboration, 120 documents written by men only (48.98%) predominated, with six different types of documents, of which the most significant were the 38 documents in book format (15.51%). This was followed by 91 mixed papers (37.14%) written in three formats, with a predominance of book chapters with 39 documents (15.92%), and finally 34 papers written by women only (13.88%) written in four different types of documents, with a predilection for articles with 17 printouts (6.94%).

In terms of citations, the most cited document types were articles with 600 citations (38.34%) followed by proceedings papers with 451 (28.82%). The range of citations ranged from zero to 600 per document type. Two types of papers were found that did not receive any citations. According to the type of collaboration, the most cited were the 120 papers written only by men (48.98%) which received 908 citations (50.02%) being the only type

of collaboration that exceeded the overall average of 6.39 citations per paper (7.57). The most cited document types were: articles in papers written only by men with 368 citations (23.51%) and in papers written only by women with 95 citations (6.07%), and proceedings papers in mixed papers with 268 citations (17.12%).

With regard to the participation of authors according to gender, mixed papers were those with the highest participation (343), with a predominance of women with 174 participations (32.22%) compared to men with 169 (31.30%). In addition, women had greater participation than men in book chapters with 88 participations compared to 83 (16.30% compared to 15.37%) and in proceedings papers with 56 compared to 55 (10.37% compared to 10.19%). In contrast, male participation was higher than female participation in the article format with 31 versus 30 (5.74% versus 5.56%).

Finally, documents written only by men obtained a higher participation than those written only by women with a ratio of 159 vs. 38 (29.44% vs. 7.04%). In both cases, the article prevailed as the format with the greatest presence with 40 male authors (7.41%) and 20 female authors (3.70%).

Table 8 shows in greater detail the number of papers according to the type of document, as well as the citations, the type of collaboration and the participation of the authors according to gender.

Table 8.

Document types

Collaboration	Document type	Docs.	% Sam.	Cit.	% Cit	Av.Cit.	M.P.	% M.P.	F.P	% F.P
Only men		120	48.98%	908	58.02%	7.57	159	29.44%		
	Book	38	15.51%	112	7.16%	2.95	38	7.04%		
	Article	33	13.47%	368	23.51%	11.15	40	7.41%		
	Book chapter	28	11.43%	144	9.20%	5.14	38	7.04%		
	Proceedings Paper	18	7.35%	183	11.69%	10.17	38	7.04%		
	Review	2	0.82%	101	6.45%	50.50	3	0.56%		
Mixed	Patent	1	0.41%				2	0.37%		
		91	37.14%	541	34.57%	5.95	169	31.30%	174	32.22%
	Book chapter	39	15.92%	136	8.69%	3.49	83	15.37%	88	16.30%
	Proceedings Paper	30	12.24%	268	17.12%	8.93	55	10.19%	56	10.37%
	Article	22	8.98%	137	8.75%	6.23	31	5.74%	30	5.56%
Only women		34	13.88%	116	7.41%	3.41			38	7.04%
	Article	17	6.94%	95	6.07%	5.59			20	3.70%
	Book chapter	13	5.31%	15	0.96%	1.15			14	2.59%
	Thesis	3	1.22%	6	0.38%	2.00			3	0.56%
	Work Entry In depth	1	0.41%						1	0.19%
General total	8 types of documents	245	100.00%	1565	100.00%	6.39	328	60.74%	212	39.26%

### Citations by document

In the 245 documents selected in the final sample, we found a range of citations per document between zero and 97, and an average of 6.39 citations per document.

Overall, 84 articles were predominantly uncited

(34.28%) with 69 found in secondary search engines (28.16%) and 15 in primary search engines (6.12%). Among these, a total of 40 papers written by males only (16.33%) were found, 35 in secondary search engines (14.29%) and five in primary (2.04%); 26 mixed

(10.61%), 21 in secondary search engines (8.57%) and five in primary (2.04%); and 18 written by females only (7.35%), 13 in secondary search engines (5.31%) and five in primary (2.04%). The participation of authors by gender was predominantly male with 97 participations (17.96%) in both secondary search engines with 83 participations (15.37%) and primary search engines with 14 participations (2.59%).

On the other hand, the four papers written alone by a

single male that obtained more than 50 citations each were noteworthy. These were: one indexed in primary search engines which received 97 citations (6.19%); one in secondary search engines cited 57 times (3.64%); and two more in secondary search engines cited 56 times each (3.58% each).

Table 9 presents the number of citations per paper based on the type of collaboration and search engines, as well as the participation according to the authors' gender.

Table 9. Citations by document

Cit	Doc	% Sam	Sum cit	% Cit	Primary engines										Secondary engines											
					O.M	Cit.	O.W	Cit	Mix	Cit.	M.P	% M.P	F.P	% F.P	O.M	Cit.	O.W	Cit	Mix	Cit.	M.P	% M.P	F.P	% F.P		
0	84	34.29%			5		5		5		14	2.59%	12	2.22%	35		13		21		83	15.37%	52	9.63%		
1	18	7.35%	18	1.15%					2	2	2	0.37%	3	0.56%	6	6	3	3	7	7	24	4.44%	16	2.96%		
2	18	7.35%	36	2.30%	2	4	3	6				3	0.56%	4	0.74%	7	14	2	4	4	8	19	3.52%	10	1.85%	
3	11	4.49%	33	2.11%	2	6			1	3	6	1.11%	1	0.19%	4	12			4	12	10	1.85%	13	2.41%		
4	15	6.12%	60	3.83%	1	4			2	8	4	0.74%	2	0.37%	7	28	1	4	4	16	13	2.41%	8	1.48%		
5	10	4.08%	50	3.19%					3	15	4	0.74%	4	0.74%	4	20			3	15	11	2.04%	5	0.93%		
6	11	4.49%	66	4.22%			1	6	3	18	8	1.48%	6	1.11%	6	36	1	6			7	1.30%	1	0.19%		
7	14	5.71%	98	6.26%	1	7			4	28	6	1.11%	13	2.41%	6	42	2	14	1	7	8	1.48%	4	0.74%		
8	6	2.45%	48	3.07%	1	8			2	16	6	1.11%	3	0.56%	2	16			1	8	6	1.11%	2	0.37%		
9	7	2.86%	63	4.03%					2	18	3	0.56%	5	0.93%	4	36			1	9	8	1.48%	2	0.37%		
10	4	1.63%	40	2.56%	2	20			1	10	8	1.48%	1	0.19%					1	10	2	0.37%	3	0.56%		
11	3	1.22%	33	2.11%											1	11			2	22	6	1.11%	8	1.48%		
12	8	3.27%	96	6.13%	3	36	1	12	1	12	13	2.41%	2	0.37%	3	36					4	0.74%				
13	3	1.22%	39	2.49%											2	26					1	13	4	0.74%	1	0.19%
15	4	1.63%	60	3.83%					2	30	2	0.37%	7	1.30%	1	15			1	15	2	0.37%	1	0.19%		
16	3	1.22%	48	3.07%					3	48	5	0.93%	3	0.56%												
17	2	0.82%	34	2.17%					1	17	1	0.19%	1	0.19%	1	17					1				0.19%	
18	2	0.82%	36	2.30%	1	18			1	18	5	0.93%	1	0.19%												
19	3	1.22%	57	3.64%					1	19	2	0.37%	2	0.37%					2	38	3	0.56%	4	0.74%		
21	4	1.63%	84	5.37%	1	21	1	21	1	21	5	0.93%	3	0.56%	1	21					1				0.19%	
22	1	0.41%	22	1.41%															1	22	2	0.37%	2	0.37%		
23	3	1.22%	69	4.41%	1	23						1	0.19%			2	46					2			0.37%	
24	2	0.82%	48	3.07%	2	48						4	0.74%													
26	1	0.41%	26	1.66%											1	26						2			0.37%	
27	1	0.41%	27	1.73%					1	27	1	0.19%	3	0.56%												
29	1	0.41%	29	1.85%					1	29	1	0.19%	3	0.56%												
39	1	0.41%	39	2.49%											1	39					2				0.37%	
40	1	0.41%	40	2.56%			1	40						1	0.19%											
56	2	0.82%	112	7.16%											2	112					2				0.37%	
57	1	0.41%	57	3.64%											1	57					1				0.19%	
97	1	0.41%	97	6.20%	1	97						1	0.19%													
Total	245	100.00%	1565	100.00%	23	292	12	85	37	339	105	19.44%	80	14.81%	97	616	22	31	54	202	223	41.30%	132	24.44%		

**Number of authors by document**

In the selected sample we found papers written by 11 authors, with an average of 2.20 authors per paper. No papers written by nine and 10 authors were found. Solo authorship predominated with 119 papers (48.57%) followed by 59 papers written in collaboration between two authors (24.08%), 23 papers written by four authors (9.39%) and 19 papers written by three authors (7.76%). The remaining 10.20% of papers (25) were written between five and 11 authors. The index of collaboration between authors resulting from dividing the number of papers written collaboratively by the total number of papers is 0.51.

Among the papers written alone, those written by men predominated with 89 papers (36.33%) compared to 30 written by women (12.24%). In the rest of the collaborations (from two to 11 authors), mixed co-authorship between men and women prevailed with 91 documents (37.14%), with authorship between two authors standing out with 28 works (11.43%) followed by collaboration between four authors with 21 documents (8.57%). It should be noted that authorship between six and 11 authors was always mixed and that there were no

documents written only by women in collaboration between three, four and five authors.

With regard to the number of citations, the direct proportional relationship was maintained (the greater the number of documents, the greater the number of citations) with the exception of papers written by eight authors in relation to those written by 11 authors. The average of 6.39 citations per paper was exceeded by papers written by one, three, four, five and 11 authors. Similarly, the papers written only by men that exceeded the average number of citations were those written by one, two, three and four authors, and the mixed papers written by three, four, five and 11 authors. In contrast, none of the papers written only by women exceeded the average number of citations per paper.

The overall participation of authors (540) was mostly male (248) in all types of co-authorship (from one to 11 authors) with the exception of papers written by five, eight and 11 authors in which female participation predominated (47). On the other hand, in the mixed papers, the participation of women (174) prevailed over that of men (169), being higher in papers written by four, five, eight and 11 authors and the same in those written by two

authors.

Table 10 shows in more detail the number of authors per paper, as well as the number of citations, the type of

collaboration and the participation according to the gender of the authors.

Table 10.

Number of authors by document

Authors	Col.	Docs.	% Sam.	Cit.	% Cit	Average cit.	M.P.	% M.P.	F.P	% F.P
1		119	48.57%	763	48.75%	6.41	89	16.48%	30	5.56%
	Only men	89	36.33%	658	42.04%	7.39	89	16.48%		
	Only women	30	12.24%	105	6.71%	3.50			30	5.56%
2		59	24.08%	342	21.85%	5.80	82	15.19%	36	6.67%
	Mixed	28	11.43%	116	7.41%	4.14	28	5.19%	28	5.19%
	Only men	27	11.02%	215	13.74%	7.96	54	10.00%		
	Only women	4	1.63%	11	0.70%	2.75			8	1.48%
3		19	7.76%	128	8.18%	6.74	32	5.93%	25	4.63%
	Mixed	18	7.35%	116	7.41%	6.44	29	5.37%	25	4.63%
	Only men	1	0.41%	12	0.77%	12.00	3	0.56%		
4		23	9.39%	191	12.20%	8.30	48	8.89%	44	8.15%
	Mixed	21	8.57%	170	10.86%	8.10	40	7.41%	44	8.15%
	Only men	2	0.82%	21	1.34%	10.50	8	1.48%		
5		10	4.08%	73	4.66%	7.30	19	3.52%	31	5.74%
	Mixed	9	3.67%	71	4.54%	7.89	14	2.59%	31	5.74%
	Only men	1	0.41%	2	0.13%	2.00	5	0.93%		
6		7	2.86%	36	2.30%	5.14	27	5.00%	15	2.78%
	Mixed	7	2.86%	36	2.30%	5.14	27	5.00%	15	2.78%
7		5	2.04%	18	1.15%	3.60	20	3.70%	15	2.78%
	Mixed	5	2.04%	18	1.15%	3.60	20	3.70%	15	2.78%
8		2	0.82%	3	0.19%	1.50	7	1.30%	9	1.67%
	Mixed	2	0.82%	3	0.19%	1.50	7	1.30%	9	1.67%
11		1	0.41%	11	0.70%	11.00	4	0.74%	7	1.30%
	Mixed	1	0.41%	11	0.70%	11.00	4	0.74%	7	1.30%
General total		245	100.00%	1565	100.00%	6.39	328	60.74%	212	39.26%

Table 11.

h-index of the authors

h-Index	Auth	% Auth	Docs	% Docs	Cit	% Cit	Men	% Men	Wom.	% Wom	Tot % Men	Tot % Wom
17	1	0.53%	158	64.49%	1173	74.95%	1	0.53%		0.00%	0.53%	
8	1	0.53%	7	2.86%	75	4.79%			1	0.53%		0.53%
7	1	0.53%	10	4.08%	111	7.09%			1	0.53%		
	1	0.53%	15	6.12%	141	9.01%			1	0.53%		1.06%
6	1	0.53%	11	4.49%	107	6.84%	1	0.53%			0.53%	
5	1	0.53%	15	6.12%	87	5.56%			1	0.53%		0.53%
	1	0.53%	4	1.63%	50	3.19%	1	0.53%				
4	1	0.53%	6	2.45%	79	5.05%			1	0.53%	0.53%	1.60%
	2	1.06%	7	2.86%	60	3.83%			2	1.06%		
3	5	2.66%	3	1.22%	185	11.82%	2	1.06%	3	1.60%		
	2	1.06%	4	1.63%	76	4.86%	1	0.53%	1	0.53%		
	2	1.06%	5	2.04%	46	2.94%	2	1.06%			3.72%	2.66%
	2	1.06%	10	4.08%	109	6.96%	1	0.53%	1	0.53%		
2	1	0.53%	13	5.31%	29	1.85%	1	0.53%				
	9	4.79%	2	0.82%	233	14.89%	6	3.19%	3	1.60%		
	3	1.60%	3	1.22%	31	1.98%			3	1.60%		
	1	0.53%	5	2.04%	30	1.92%	1	0.53%			4.79%	3.72%
1	2	1.06%	7	2.86%	20	1.28%	2	1.06%				
	1	0.53%	8	3.27%	13	0.83%			1	0.53%		
	86	45.74%	1	0.41%	713	45.56%	40	21.28%	46	24.47%	24.47%	28.19%
0	11	5.85%	2	0.82%	66	4.22%	4	2.13%	7	3.72%		
	2	1.06%	3	1.22%	13	0.83%	2	1.06%				
Total	46	24.47%	1	0.41%			22	11.70%	24	12.77%		
	2	1.06%	2	0.82%			1	0.53%	1	0.53%		
	1	0.53%	3	1.22%			1	0.53%			12.77%	14.36%
	1	0.53%	6	2.45%					1	0.53%		
	1	0.53%	7	2.86%					1	0.53%		
Total	188	100.00%					89	47.34%	99	52.66%	47.34%	52.66%

### *h-index of the authors in the selected sample*

A total of 188 authors were found, 89 male (47.34%) and 99 female (52.66%). In relation to the 245 documents analysed in this sample, an author h-index ranging from zero to 17 was found. The h-index 1 was predominant with 99 authors (52.66%), of which 53 were female (28.19%) and 46 were male (24.47%). On the other hand, 46 authors

were found with zero h-index (24.47%), 24 females (12.77%) and 22 males (11.70%). In addition, only one author was found in four different h-indexes, with females in five and eight, and males in six and 17. Finally, more females were found in h-indexes one, with 53 females and 46 males, zero, with 27 females and 24 males, and four, with three females and one male. In contrast, males

prevailed over females in h-index two and h-index three with a male to female ratio of nine to seven and seven to five respectively.

In terms of citations received, the only male author with h-index 17 was predominant, receiving 1173 citations (74.95%) in 158 documents (64.49%) followed by the 99 authors with h-index one who received 792 citations, 410 received by females and 382 by males.

Table 11 presents in more detail the number of authors per h-index obtained as a function of citations and the number of documents published in the 245 documents analysed in this study.

**Scientific productivity of the authors**

Based on Crane's (1969) classification of scientific productivity in this study, a transience index of 70.21% was found, with a predominance of 132 transient authors who published only one paper each, with 37.23% female participation (70 female authors) and 32.98% male participation (62 authors). This was followed by 36 small producers (19.15%) who published between two and four

papers with 18 male and 18 female participants (9.57% respectively) and 12 moderate producers (6.38%) who published between five and eight papers with a female participation of seven (3.72%) and male participation of five (2.66%). Finally, a total of eight large producers (4.26%) were found who published between 10 and 158 papers with equal male and female participation (four authors of each gender). It should be noted that there was only one male author who participated in 158 papers.

In terms of the number of citations, and bearing in mind that the same citation can be counted among several authors, large producers predominate with 1757 citations, 1380 among men and 377 among women. This was followed by transients with 713, 370 for women and 343 for men. Small producers received 654 citations, 393 for men and 261 for women. The authors who received the fewest citations were moderate producers with 323 citations, 227 for women and 96 for men.

Table 12 shows more specifically and according to gender the scientific productivity of the authors and the citations received.

Table 12. Authors' scientific productivity

Clas. Crane (1969)	Docs by author	Total authors	% total authors	Part. Sam	% Part. Sam	Male	% Male	Cit	% Cit	Female	% Female	Cit	% Cit	Tot Cit	% Tot Cit	Range Cit
Bystanders	1	132	70.21%	132	24.44%	62	32.98%	343	21.92%	70	37.23%	370	23.64%	713	45.56%	0-27
	2	22	11.70%	44	8.15%	11	5.85%	208	13.29%	11	5.85%	91	5.81%	299	19.11%	0-48
Small producers	3	11	5.85%	33	6.11%	5	2.66%	92	5.88%	6	3.19%	137	8.75%	229	14.63%	0-58
	4	3	1.60%	12	2.22%	2	1.06%	93	5.94%	1	0.53%	33	2.11%	126	8.05%	33-50
Moderate producers	5	3	1.60%	15	2.78%	3	1.60%	76	4.86%					76	4.86%	23-30
	6	2	1.06%	12	2.22%					2	1.06%	79	5.05%	79	5.05%	0-79
	7	6	3.19%	42	7.78%	2	1.06%	20	1.28%	4	2.13%	135	8.63%	155	9.90%	0-75
	8	1	0.53%	8	1.48%					1	0.53%	13	0.83%	13	0.83%	13
Large producers	10	3	1.60%	30	5.56%	1	0.53%	71	4.54%	2	1.06%	149	9.52%	220	14.06%	38-111
	11	1	0.53%	11	2.04%	1	0.53%	107	6.84%					107	6.84%	107
	13	1	0.53%	13	2.41%	1	0.53%	29	1.85%					29	1.85%	29
	15	2	1.06%	30	5.56%					2	1.06%	228	14.57%	228	14.57%	87-141
	158	1	0.53%	158	29.26%	1	0.53%	1173	74.95%					1173	74.95%	1173
Total	188	100.00%	540	100.00%	89	47.34%				99	52.66%					

**Large producers according to Crane's classification (1969).**

Eight large producers were found who published between 10 and 158 first order papers of which four were male (2.13%) and four female (2.13%), all of them belonging to the BAPNE research group with an h-index between 3 and 17. The range of publications indexed in primary search engines (Wos/Scopus) ranged between 0 and 43 with a range of citations per author between 0 and 550. On the other hand, the range of papers indexed in secondary search engines ranged between 10 and 115 papers whose authors received between nine and 623 citations.

The most productive and representative author in all aspects was Romero-Naranjo, FJ who presented an h-index of 17 and 158 first order papers with 43 of them appearing

in primary search engines cited 550 times, and 115 papers in secondary search engines with 623 citations. It participated in 64.49% of the publications in this analysis and received a total of 1173 citations (74.95%). In addition, he published 52.95% of the papers written alone (63 out of 119) and was also the most representative author in this field. On the other hand, the most representative women were Crespo-Colomino, N with 15 papers each in primary search engines with six papers and 88 citations, and Liendo-Cardenas, A in secondary search engines with 13 publications and 54 citations.

Table 13 shows more specifically the h-index, number of papers and citations in primary and secondary search engines, as well as the gender and research group of the major producers of first-order literature on body percussion.

Table 13. Large producers according to Cranes's classification (1969)

Authors	Gender	R. Group	h-Index	Docs	% Sam	Cit	% Cit	Ord	1st Eng	% 1st Eng	Cit	% Cit	2nd Eng	% 2nd Eng	Cit	% Cit
Romero-Naranjo, FJ	Male	BAPNE	17	158	64.49%	1173	74.95%	1st	43	17.55%	550	35.14%	115	46.94%	623	39.81%
Crespo-Colomino, N	Female	BAPNE	7	15	6.12%	141	9.01%	1st	6	2.45%	88	5.62%	9	3.67%	53	3.39%
Liendo-Cardenas, A	Female	BAPNE	5	15	6.12%	87	5.56%	1st	2	0.82%	33	2.11%	13	5.31%	54	3.45%

Arnau-Molla, AF	Male	BAPNE	3	13	5.31%	29	1.85%	1st	3	1.22%	20	1.28%	10	4.08%	9	0.58%
Romero-Naranjo, AA	Male	BAPNE	6	11	4.49%	107	6.84%	1st	2	0.82%	21	1.34%	9	3.67%	86	5.50%
Alonso-Sanz, A	Female	BAPNE	3	10	4.08%	38	2.43%	1st	2	0.82%	1	0.06%	8	3.27%	37	2.36%
Pons-Terres, JM	Female	BAPNE	7	10	4.08%	111	7.09%	1st	4	1.63%	66	4.22%	6	2.45%	45	2.88%
Trives-Martinez, EA	Male	BAPNE	3	10	4.08%	71	4.54%	1st	0	0.00%	0	0.00%	10	4.08%	71	4.54%

### Most cited articles

The range of citations of the five most relevant papers was between 40 and 97 receiving in total 20.00% of the citations in this study (313). All of them were written alone, four first-order articles written by a man and one second-order article by a woman. Moreover, three of the five articles are indexed in secondary search engines and the other two in primary search engines.

The author of the most cited article was Romero-Naranjo, FJ who wrote in English in 2013 the paper Science & Art of body percussion: A review in the Spanish Journal of Human Sport and Exercise and received 97 citations (6.20%).

Table 14 presents the five most cited papers from this research.

Table 14.  
Most cited documents

Reference	Cit	% Cit	Research engine	Order	Research Group	Col
Romero Naranjo, F. J. (2013d). Science & art of body percussion: A review. <i>Journal of Human Sport and Exercise</i> , 8(2), 442-457. <a href="https://doi.org/10.4100/jhse.2012.82.11">https://doi.org/10.4100/jhse.2012.82.11</a>	97	6.20%	1st eng	1st Ord	BAPNE	O.M
Romero Naranjo, F. J. (2008c). Percusión corporal en diferentes culturas. <i>Música y Educación: Revista Trimestral de Pedagogía Musical</i> , 21(76), 46-97.	63	4.03%	2nd eng	1st Ord	BAPNE	O.M
Romero Naranjo, F. J. (2013a). Criterios de evaluación en la didáctica de la percusión corporal - método BAPNE. <i>Educación Siglo XXI: Revista De La Facultad De Educación</i> , 31(1), 235-254.	57	3.64%	2nd eng	1st Ord	BAPNE	O.M
Romero Naranjo, F. J. (2012). Percusión corporal y lateralidad. <i>Método BAPNE. Música y Educación: Revista Trimestral de Pedagogía Musical</i> , 25(91), 30-51.	56	3.58%	2nd eng	1st Ord	BAPNE	O.M
Kartomi, M. (2014). Concepts, terminology and methodology in music performativity research. <i>Musicology Australia</i> , 36(2), 189-208. <a href="https://doi.org/10.1080/08145857.2014.958268">https://doi.org/10.1080/08145857.2014.958268</a>	40	2.56%	1st eng	2nd Ord	No BAPNE	O.W

### Documents by research group

In the analysis carried out, only one research group (BAPNE) was found, made up of 88 authors who participated at some time in the group, 40 of whom were men (45.45%) and 48 women (54.55%). This group, led by Phd. Francisco Javier Romero Naranjo (creator of the method), published only and exclusively first-order documents, both intervention, non-intervention or justification and research protocol, indexed in primary (Wos/Scopus) and secondary search engines on different topics and populations, with body percussion and the stimulation of cognitive and executive functions being the central axis of their research.

On the other hand, the rest of the independent authors or those belonging to a research group not exclusively focused on body percussion consisted of 101 researchers, of which 50 were male (49.51%) and 51 were female (50.49%). It should be noted that one author was found to participate in both groups. These independent authors published first and second order papers both intervention and non-intervention or justification and research protocol papers indexed in primary and secondary search engines.

It was observed that publications from the BAPNE research group predominated with 161 papers, all first order (65.71%) receiving 1232 citations (78.72%). These were divided into 118 documents found in secondary search engines (48.16%) with 682 citations (43.58%) and 43 in primary search engines (17.55%) cited 550 times (35.14%).

In terms of collaboration between authors, 91 documents written only by men predominated (37.14%) with 783 citations (50.03), 76 of them indexed in secondary search engines (31.02%) with 513 citations (32.78%) and 15 in primary search engines (6.12%) with 270 citations

(17.25%). On the other hand, there was also a predominance of 70 mixed papers (28.57%) with 449 citations (28.69%) distributed in 42 papers found in secondary search engines (17.14%) with 169 citations (10.80%) and 28 papers in primary search engines (11.43%) cited 280 times (17.89%). It is noteworthy that no papers written only by women were found in this group.

Continuing with the collaboration between authors, the 34 papers from the non-BAPNE group (13.88%) predominated with 116 citations (7.41%) divided into 22 papers found in secondary search engines (8.98%) with 31 citations (1.98%), and 12 papers found in primary search engines (4.90%) with 85 citations (5.43%). It is noteworthy to mention that in these documents written only by women not belonging to any exclusive research group on body percussion, second-order documents predominated, both in primary and secondary search engines.

In relation to the type of intervention with body percussion activities, the 135 non-intervention or justification papers published by the BAPNE research group predominated (55.10%) and cited 928 times (59.30%). These were divided into 114 papers found in secondary search engines (46.53%) and 675 citations (43.13%), and 21 in primary search engines (8.57%) cited 253 times (16.17%). Similarly, under the BAPNE research group registration there were also eight research protocol articles (3.27%) cited 90 times (5.75%) with seven in primary search engines (2.86%) with 90 citations (5.75%), and one with no citations in secondary search engines.

Continuing with the type of intervention with body percussion activities, the 24 intervention articles carried out by the group of independent authors predominated (9.80%) cited 99 times (6.33%) with 17 of them found in

secondary search engines (6.94%) and cited 57 times (3.64%). It should be noted that in this group, second-order papers (10) predominated over first-order papers (7) in secondary search engines, and first-order papers (4) over second-order papers (3) in primary search engines. On the other hand, it was observed that the BAPNE research group published the largest number of intervention papers in primary search engines, specifically 15 documents (6.12%) that received 207 citations (13.23%).

Finally, and looking at the participation according to the gender of the authors, at a general level, a male

predominance was found with 328 participations (60.74%) compared to women with 212 (39.26%). The BAPNE research group presented a higher number of participations than the non-BAPNE group in both the 267 male participations (49.44%) and the 145 female participations (26.85%). In the BAPNE research group there were more male than female participants (267-145), while the opposite was true for the non-BAPNE group (67-61).

Table 15 shows in more detail the number of documents, citations, collaboration and participation of authors according to gender based on research groups.

Table 15.  
Documents by research group

Research group	Docs.	Cit.	Colaboration					Intervention with acts. B.P					Gender participation			
			O.M	Cit.	O.W	Cit.	Mix	Cit.	Int.	Cit.	No int.	Cit.	Prot.	Cit.	M.P	F.P
BAPNE	161	1232	91	783			70	449	18	214	135	928	8	90	267	145
Secondary engines	118	682	76	513			42	169	3	7	114	675	1		185	93
1st Order	118	682	76	513			42	169	3	7	114	675	1		185	93
Primary engines	43	550	15	270			28	280	15	207	21	253	7	90	82	52
1st Order	43	550	15	270			28	280	15	207	21	253	7	90	82	52
No BAPNE	84	333	29	125	34	116	21	92	24	99	59	227	1	7	61	67
Secondary engines	55	167	21	103	22	31	12	33	17	57	37	103	1	7	38	39
1st Order	22	36	10	19	8	13	4	4	7	10	14	19	1	7	17	15
2nd Order	33	131	11	84	14	18	8	29	10	47	23	84			21	24
Primary engines	29	166	8	22	12	85	9	59	7	42	22	124			23	28
1st Order	8	42	3	12	2	3	28	4	15	4	27			8	9	
2nd Order	21	124	5	10	10	83	6	31	3	27	18	97			15	19
TOTAL	245	1565	120	908	34	116	91	541	42	313	194	1155	9	97	328	212
Secondary engines	173	849	97	616	22	31	54	202	20	64	151	778	2	7	223	132
1st Order	140	718	86	532	8	13	46	173	10	17	128	694	2	7	202	108
2nd Order	33	131	11	84	14	18	8	29	10	47	23	84			21	24
Primary engines	72	716	23	292	12	85	37	339	22	249	43	377	7	90	105	80
1st Order	51	592	18	282	2	2	31	308	19	222	25	280	7	90	90	61
2nd Order	21	124	5	10	10	83	6	31	3	27	18	97			15	19

Table 16.  
Documents by type of intervention

Type of intervention	Col.	Docs.	% Sam.	Cit.	% Cit	M.P	% M.P	F.P	% F.P	S.W	% S.W	Men	% Men	Women	% Women
Intervention		42	17.14%	313	20.00%	57	10.56%	60	11.11%	11	4.49%	4	1.63%	7	2.86%
Mixed		26	10.61%	207	13.23%	45	8.33%	51	9.44%						
Only men		8	3.27%	85	5.43%	12	2.22%								
Only women		8	3.27%	21	1.34%			9	1.67%						
No intervention		194	79.18%	1155	73.80%	255	47.22%	145	26.85%	108	55.67%	85	15.74%	23	4.26%
Mixed		62	25.31%	304	19.42%	121	22.41%	118	21.85%						
Only men		107	43.67%	763	48.75%	134	24.81%								
Only women		25	10.20%	88	5.62%			27	5.00%						
Protocol		9	3.67%	97	6.20%	16	2.96%	7	1.30%	0					
Mixed		3	1.22%	30	1.92%	3	0.56%	5	0.93%						
Only men		5	2.04%	60	3.83%	13	2.41%								
Only women		1	0.41%	7	0.45%			2	0.37%						
Total		245	100.00%	1565	100.00%	328	60.74%	212	39.26%	119	60.16%	89	17.37%	30	7.12%

### Documents by type of intervention

The 245 documents analysed in this study were classified as intervention documents when some type of treatment was applied to participants with body percussion activities and in turn some dependent variable was measured; non-intervention, when no treatment was applied, but the use of body percussion was substantiated; and protocol, when a research design was presented as a model that was not carried out.

In terms of the number of papers, citations received, papers written alone and authors' participation according to gender, 194 non-intervention papers (79.18%) predominated, receiving a total of 1155 citations (73.80%), with 245 male participants (47.22%) and 145 female participants (26.85%). It should be noted that 108 of these non-intervention papers (44.08%) were written alone, 85 by men (34.69%) and 23 by women (9.39%).

In terms of collaboration between authors, the 107 papers written by men alone in the non-intervention papers (43.67%) and the five research protocol papers (2.04%) were noteworthy. On the other hand, in the intervention papers, 26 mixed papers predominated (10.61%), with a higher participation of women than men, with 51 female authors (9.44%) compared to 45 male authors (8.33%). Similarly, at the general level, in the 42 intervention documents (17.14%), the female presence prevailed with 60 participations (11.11%) compared to 57 male participations (10.56%).

Table 16 shows the list of documents, citations, collaboration between authors and participation of authors based on the intervention with body percussion activities.

### Documents by research design and type of intervention study activities

A total of 42 intervention papers were found with 313 citations (20.00%) of which 28 were quantitative (11.43%), 11 qualitative (4.49%) and three mixed (1.22%). Sixteen were found in primary search engines (6.53%) and 12 in secondary search engines (4.90%). It was noted that both control and experimental group type (21) and experimental group only (21) were used equally in these investigations. A repeated measures (pre-post) type of evaluation was administered in 28 investigations (11.43%) and non-repeated (post only) in 14 (5.71%). Twenty-six papers (10.61%) were found in mixed (male-female) collaboration, eight written by males only (3.27%) and eight by females only (3.27%). There were 60 female contributions (11.11%) and 57 male contributions (10.55%). It was noted that 11 intervention papers were written alone (4.49%) with seven written by women (2.86%) and four by men (1.63%).

Regarding the type of activities used as intervention treatment, 19 studies were found with BAPNE activities (7.76%); another 19 with body percussion activities not located under any method (7.76%); and four studies that applied body percussion activities based on some methodology, two of them based on Dalcroze (0.82%), one

on Orff (0.41%) and another on Kodaly (0.41%).

On the other hand, eight different research designs were found. Quasi-experimental design was used in 17 investigations (6.94%); action research in 12 (4.90%); experimental design in 5 (2.04%); case study in two (0.82%); in-depth study in one (0.41%); ethnographic also in one (0.41%); single case study in another (0.41%); and three studies did not specify (1.22%).

Quantitative studies found in primary search engines using BAPNE body percussion activities, with quasi-experimental design, repeated measures (pre-post) applied to control and experimental groups, predominated. In addition, there was a predominance of mixed male-female collaborative studies, with male participation being more pronounced. Finally, the research written by women alone found in secondary search engines that used body percussion activities not ascribed to any methodology, with action research as design, with only experimental group and with repeated measures (pre-post) were remarkable.

Table 17 shows in more detail the number of intervention papers based on the research design and the type of body percussion activities used.

Table 17. Documents by research design and type of intervention study activities

Intervention design	Doc	% Doc	Cit	% Cit	Research engine		Group type		Evaluation type		Collaboration			Gender part.		Solo work		
					1st Eng	2nd Eng	Exp	Exp/Cont	Pre/Post	Only post	O.M	O.W	Mix	M.P	F.P	Doc	Men	Wom
Quantitative	28	11.43%	218	13.93%	16	12	10	18	25	3	7	6	15	43	38	8	3	5
BAPNE act.	15	6.12%	191	12.20%	12	3	1	14	15		4	1	10	31	26	2	1	1
Quasi-experimental	10	4.08%	130	8.31%	7	3		10	10		2	1	7	22	15	1		1
D. Experimental	4	1.63%	38	2.43%	4		1	3	4		1		3	8	11			
Unspecified	1	0.41%	23	1.47%	1			1	1		1			1		1	1	
Body percussion act.	13	5.31%	27	1.73%	4	9	9	4	10	3	3	5	5	12	12	6	2	4
Quasi-experimental	6	2.45%	15	0.96%	3	3	2	4	6		2	1	3	8	6	1	1	
Single case study	1	0.41%			1	1		1	1				1	2	1			
Research-Action	6	2.45%	12	0.77%	1	5	6		3		1	4	1	2	5	5	1	4
Qualitative	11	4.49%	69	4.41%	5	6	10	1	11		1	1	9	12	18	2	1	1
Body percussion act.	4	1.63%	10	0.64%	1	3	3	1	4			1	3	4	6	1		1
In-Depth study	1	0.41%			1			1	1				1	1	1			
Research-Action	2	0.82%	7	0.45%	2	2		2	2			1	1	2	3	1		1
Unspecified	1	0.41%	3	0.19%	1	1		1	1				1	1	2			
BAPNE act.	3	1.22%	22	1.41%	2	1	3		3				3	3	8			
D. Experimental	1	0.41%	15	0.96%	1		1		1				1	1	3			
Research-Action	1	0.41%			1	1		1	1				1	1	1			
Unspecified	1	0.41%	7	0.45%	1		1		1				1	1	4			
Dalcroze BP act.	2	0.82%	27	1.73%	2		2		2				2	3	3			
Case study	1	0.41%	21	1.34%	1		1		1				1	1	2			
Ethnographic	1	0.41%	6	0.38%	1		1		1				1	2	1			
Orff BP act.	1	0.41%	3	0.19%		1	1		1				1	1	1			
Case study	1	0.41%	3	0.19%		1	1		1				1	1	1			
Kodaly BP act.	1	0.41%	7	0.45%		1	1		1		1		1			1	1	
Research-Action	1	0.41%	7	0.45%		1	1		1		1		1			1	1	
Mixed	3	1.22%	26	1.66%	1	2	1	2	3			1	2	2	4	1		1
Body percussion act.	2	0.82%	19	1.21%		2	1	1	2			1	1	1	2	1		1
Research-Action	2	0.82%	19	1.21%		2	1	1	2			1	1	1	2	1		1
BAPNE act.	1	0.41%	7	0.45%		1		1	1				1	1	2			
Quasi-experimental	1	0.41%	7	0.45%		1		1	1				1	1	2			
Total	42	17.14%	313	20.00%	22	20	21	21	28	14	8	8	26	57	60	11	4	7

**Evaluation instruments for intervention papers**

A total of 25 different assessment instruments were found in the 42 intervention investigations. A range of one to six assessment instruments were used per intervention paper. The 29 papers that made use of a single assessment instrument predominated (11.84%) and were cited 187 times (11.95%). Of these, 26 were first order (10.61%)

and three were second order (1.22%), with 16 indexed in primary search engines (6.53%) and 13 in secondary search engines (5.31%). The BAPNE research group published 15 of these 29 intervention papers using a single assessment instrument (6.12%), all of them first-order, while the other 14 papers (5.71%) were published by independent authors. In addition, there was a predominance of mixed papers with

17 printings (6.94%) and more female participation with 44 participations (8.15%) than male with 43 (7.96%).

Table 18 shows the number of evaluation instruments per intervention paper, as well as citations, indexation, research group, order of treatment, collaboration between authors and participation according to authors' gender.

On the other hand, of the 25 different assessment instruments found in the 42 intervention papers, the test and the questionnaire predominated, the former being used in 15 papers (6.12%) and the latter in 11 (4.49%). Both types of evaluation instruments were more present in first-order papers (14 and 8) than in second-order papers (one and three), as well as in primary search engines (11 and six)

than in secondary ones (four and five).

Mixed papers used the test more frequently (11 papers), with more male participation (31) than female participation (28). However, the questionnaire was used more in the 6 papers written by women only (2.45%) and had more female participation (13) than male (7).

The BAPNE research group made use of six different types of assessment instruments and the test predominated with 13 uses. In contrast, the independent authors used 23 different types, with the questionnaire predominating with 8 uses.

Finally, the scale, the video recording and the interview were used in five works each (2.04%).

Table 18.  
Number of evaluation instruments by intervention paper

Evaluation tools	Doc	% Doc	Cit	% Cit	1st engines	2nd engines	BAPNE	No BAPNE	1st Order	2nd Order	O.M	O.W	Mix	M.P	F.P
1	29	11.84%	187	11.95%	16	13	15	14	26	3	6	6	17	43	44
2	8	3.27%	80	5.11%	4	4	2	6	2	6	2	1	5	9	6
3	4	1.63%	46	2.94%	2	2	1	3	1	3		1	3	3	9
6	1	0.41%	0	0.00%		1		1		1			1	2	1
Total	42	17.14%	313	20.00%	22	20	18	24	29	13	8	8	26	57	60

Table 19 presents the assessment instruments found in the intervention studies, as well as the indexation, research group, order of treatment, collaboration between authors and participation according to the gender of the authors.

Table 19.  
Evaluation instruments for intervention studies

Evaluation tools	Docs	% Sample	1st engines	2nd engines	BAPNE	No BAPNE	1st Order	2nd Order	O.M	O.W	Mix	M.P	F.P
Test	15	6.12%	11	4	13	2	14	1	3	1	11	31	28
Questionnaire	11	4.49%	6	5	3	8	8	3	2	6	3	7	13
Scale	5	2.04%	2	3	1	4	4	1	1	1	3	7	5
Video recording	5	2.04%	3	2		5	5	1	1	3	5	5	5
Interview	5	2.04%	4	1	2	3	2	3		1	4	5	11
Unspecified	2	0.82%		2	1	1	2				2	2	4
Cortisol study	2	0.82%	2		2		2		1		1	2	4
Rubric	1	0.41%		1		1		1	1			1	
Moments of distress	1	0.41%		1		1		1			1	2	1
Recurrent dysfunctional imagery and flash-back	1	0.41%		1		1		1			1	2	1
Semi-structured interview	1	0.41%		1		1		1	1			1	
Participant observation	1	0.41%		1		1		1		1			1
Open-ended interviews	1	0.41%		1		1		1			1	1	2
Unstructured interview	1	0.41%		1		1		1			1	1	1
Questionnaire in process of validation	1	0.41%		1		1	1				1	1	1
Inventory	1	0.41%		1		1		1			1	2	1
Research diary	1	0.41%	1			1		1			1	1	2
Observation	1	0.41%		1		1		1			1	1	2
Behavioural activation	1	0.41%		1		1		1			1	2	1
Objective test	1	0.41%		1		1		1			1	1	1
Form	1	0.41%		1		1		1			1	1	1
Discussion analysis	1	0.41%		1		1		1			1	1	2
Heart rate	1	0.41%		1		1		1			1	2	1
Survey	1	0.41%		1		1		1			1	1	1
Focus group	1	0.41%	1			1		1			1	1	1

### Intervention documents by subject and population

The 42 intervention documents were located around five research subjects. Those in education predominated with 36 papers (14.69%) and 246 citations. These were divided into: 30 general education papers (15.72%) receiving 186 citations (11.88%); four special education (1.63%) cited 32 times (2.04%); and two music education (0.82%) with 28 citations (1.79%). Seventeen research papers in education were found in primary search engines (6.94%) and 19 in secondary search engines (7.76%). Twenty-four first-order papers were found (9.80%) and 12 second-order papers (4.90%). Mixed author collaboration predominated with 21 papers (8.57%), followed by eight papers written only by women (3.27%) and seven written only by men

(2.86%). Finally, in these 36 papers on education, there was a greater presence of male authors with 50 participations (9.26%) than female authors with 46 (8.52%).

Other subjects that emerged in this analysis other than education were active ageing with four research papers (1.63%) and 52 citations (3.32%), and therapy with two papers (0.82%) cited 28 times (1.79%).

In terms of the populations to which interventions were applied, there were 10 different ones. Interventions in primary education predominated with 14 studies (5.71%) receiving 104 citations (6.65%), followed by nine in secondary education (3.67%) cited 93 times (5.94%), and five in initial teacher training (2.04%) with 12 citations (0.77%).

Both primary and secondary populations were dominated by first-order papers indexed in primary search engines. However, although first-order papers also predominated in initial teacher education, they were mainly

found in secondary search engines.

Table 20 presents in detail the intervention papers found according to research subject and participant population.

Table 20.  
Intervention documents by research subject and participant population

Subject/Population	Doc	% Doc	Cit	% Cit	Research engine		Treatment order		Collaboration			Gender part.	
					1st Eng	2nd Eng	1st Ord	2nd Ord	O.M	O.W	Mix	M.P	F.P
Education	30	12.24%	186	11.88%	13	17	21	9	7	8	15	35	39
Primary	12	4.90%	99	6.33%	7	5	8	4	4	2	6	18	15
Secondary	7	2.86%	66	4.22%	4	3	6	1	2	1	4	11	12
Initial teacher training	5	2.04%	12	0.77%	1	4	3	2	1	2	2	3	5
Permanent teacher training	3	1.22%	6	0.38%	1	2	3			2	1	1	3
Primary and secondary	2	0.82%	0	0.00%		2	1	1		1	1	1	2
University business training	1	0.41%	3	0.19%		1		1			1	1	2
Active ageing	4	1.63%	52	3.32%	4		4		1		3	4	9
Elderly	4	1.63%	52	3.32%	4		4		1		3	4	9
Special education	4	1.63%	32	2.04%	2	2	1	3			4	7	5
Secondary	2	0.82%	27	1.73%	2			2			2	3	3
Primary	2	0.82%	5	0.32%		2	1	1			2	4	2
Therapy	2	0.82%	15	0.96%	1	1	1	1			2	3	5
Adults	2	0.82%	15	0.96%	1	1	1	1			2	3	5
Music education	2	0.82%	28	1.79%	2		2				2	8	2
Intermediate conservatory	1	0.41%	16	1.02%	1		1				1	2	1
Elementary conservatory	1	0.41%	12	0.77%	1		1				1	6	1
Total	42	17.14%	313	20.00%	22	20	29	13	8	8	26	57	60

## Discussion

Q1: What is the chronological evolution of productivity and citation?

The uninterrupted annual publication starts in 2008 and the most productive years were 2019 with 37 publications and 2014 with 32. This is consistent with the 6th (2019-2020) and 4th (2014-2016) stages of evolution of the BAPNE method proposed by Arnau-Mollá and Romero-Naranjo (2022d). The main characteristics of the 6th stage were the quantitative intervention focused on the stimulation of executive functions as a result of the second promotion of the master's degree in body percussion (7 works), and the third period of substantiation with 14 books written by Romero-Naranjo that substantiate neuromotricity and executive functions. It also contributed that this year was the most productive year for independent authors with 12 publications. On the other hand, the second year with the highest number of publications (2014) coincides with the 4th stage (creation of the school and expansion) in which participation in national and international congresses began (18 papers) and six foundation books were created.

In terms of citations, 2022 was the year with the highest number of citations with 516, in which a total of 119 papers were cited, receiving between one and 20 citations, with the most significant jump between years, going from 248 in 2021 to 516 in 2022. This may be due to the fact that in this year 24 first-order papers were published that exclusively allude to body percussion (Serna et al., 2018; Arnau-Mollá & Romero-Naranjo, 2022a, 2022b), each of them citing a large number of references on body percussion.

In reference to collaboration between authors, the 120 documents written by only men predominate. Here we find two reasons that justify these results. The first is that Romero-Naranjo, as the most significant author, publishes 63 documents alone, and there are also 26 more documents

written alone by independent male authors. The second is that Romero-Naranjo, as director of the BAPNE research group, is part of all the publications created by this group, supervising their content. Therefore, there are no publications written by women alone in 65.71% of the publications in this sample (161 papers).

Alluding to gender and participation, the number of authors has tripled in the last five years since Serna et al., 2018 which collects a total of 62 authors with 49.10% male (26) and 58.10% female (36). A total of 188 authors and 540 participations are found in this study. There are more women (100) than men (88). On the other hand, participation is more male (328) than female (212). The reason that even though there are more women, the higher number of male authors is due, once again, to the presence of Romero-Naranjo, who alone has 158 participations out of the 328 total of male authors. In fact, in the mixed papers, the female presence is slightly predominant with 174 participations compared to 169 male ones.

Q2: What is the productivity and citation by country?

There are 19 participating countries in this sample, with Spain being the most productive and significant with 159 papers and 899 citations, followed by the UK with 39 papers and 485 citations.

The predominance of Spain is in line with the work presented by Arnau-Mollá and Romero-Naranjo (2022a, 2022b) and Serna et al. (2018). This is linked to the fact that 72.67% of the papers written by the BAPNE research group (117) and 50.00% of the production of the independent authors (42) are published in Spanish journals, conferences and publishing houses. On the other hand, the second position occupied by the United Kingdom with 39 documents is mostly linked to the 4th, 5th and 6th stages presented by Arnau-Mollá and Romero-Naranjo, (2022d), in which collaborations in international congresses emerge in the 4th stage; the research designs of the first training of the Master of Body Percussion in the 5th stage; and the

quantitative intervention research focused on the stimulation of the executive functions of the second promotion of the Master of Body Percussion. It should be noted that all but one of the documents found in this country are found in primary search engines.

In terms of citations, both the predominance of Spain as the most cited country (899), and the second place occupied by the United Kingdom (485), are closely linked to the order of treatment of the published documents and the number of first-order references they contain, 136 out of 159 in the case of Spain, and 31 out of 39 in the case of the United Kingdom.

In terms of collaboration and author participation, there is a predominance of mixed papers used in eight countries and male participation in nine others. Equal male and female participation is found in four countries.

Q3: What is the productivity and citation by language?

Ten different languages are found, with Spanish predominating with 99 documents and 711 citations, followed by English with 92 papers and 734 citations. These results are in line with Arnau-Mollá and Romero-Naranjo (2022a, 2022b) when sectioned into secondary search engines, in which Spanish is predominant, and primary search engines, in which English is predominant. The fact that Spanish predominates is due to the greater number of documents published in secondary search engines, as just over half of the sample (51.02%) is found in these, with Spanish occupying 35.41%.

As far as citations are concerned, we can say that the papers in English from primary search engines are the most cited, as they obtain the highest number of citations with the lowest number of documents.

In reference to the number of languages according to the collaboration between the authors, we find parity in the works written by only men with those written by only women, with eight languages each. In both cases, Spanish is predominant, while in the mixed papers it is English.

The predominant participation of men is English and that of women is Spanish in the papers written by only women and English in the mixed papers.

Q4: What is the productivity and citation by publisher?

In the selected sample (245) there are 27 different publishers that publish 121 documents, 117 of them in secondary search engines, cited on 392 occasions, with a predominance of works written only by men and with male participation. It should be noted that all of them are of first order, with the exception of the four papers indexed in primary search engines, which are of second order.

The most significant are Body Music-Body Percussion Press with 36 documents, followed by the University of Alicante with 23. This predominance is linked to the BAPNE research group, since the former publishes 36 of the 38 books on neuromotricity fundamentals and activities of the BAPNE method written by a single author; and the latter publishes 82.61% of the authors belonging to this group under the signature of the University of Alicante.

In terms of citations, the University of Alicante, with

fewer documents, obtains a greater number of citations. This is due to the fact that the books published in Body Music-Body Percussion Press are not in open access or in pdf, but in the library of the University of Alicante, which greatly reduces the possibility of their consultation, and with it the possibility that they can be cited.

Q5: What is the productivity and citation by conference?

A total of 27 congresses appear in which 78 papers are published, mostly in secondary search engines, cited 666 times mainly in primary search engines, with a predominance of mixed papers (with a higher number of women) and male participation in general.

The most representative conference, in terms of papers and citations, is the 7th International Conference on Intercultural Education - Education, Health and ICT - From a Transcultural Perspective (EDUHEM) with 12 papers all in primary search engines, written in English and entirely belonging to the BAPNE research group, cited 162 times.

This prevalence is associated with the 5th stage of evolution of the BAPNE method from 2017-2018 (Arnau-Mollá & Romero-Naranjo, 2022d) whose main characteristic is the publication of protocol or research design articles resulting from the first training of the master's degree in body percussion, as well as the second period of foundation in which the interest in multiple intelligences is progressively abandoned and focuses on the stimulation of cognitive and executive functions.

Q6: What is the productivity and citation by journals?

A total of 51 journals are found, publishing 109 papers and 1110 citations, mainly indexed in primary search engines in article format.

The most prolific are the 21 Spanish journals, followed by the seven from the United Kingdom, which publish an equal number of papers written only by men and mixed journals in which male participation predominates. It is worth noting that the journal *Música y Educación: Revista Trimestral de Pedagogía Musical*, one of the two most productive Spanish journals until 2022, ceased its activity in 2014, being a great loss for the subject, since it accepted first-rate papers on body percussion with more than considerable extensions of between 40 and 50 pages (Romero-Naranjo, 2006; 2008c).

There are 19 journals from eight different countries included in the 2022 Scimago Journal Rank, publishing 51 papers. In these, it is also observed that Spanish journals predominate, followed by those from the United Kingdom.

The most representative quartile is Q2, closely followed by Q1 and Q3, with the main subject area being Arts and Humanities, and the category Music.

The most prolific journals are *Procedia-Social and Behavioral Sciences* with 26 papers and *Retos-Nuevas Tendencias en Educación Física, Deporte y Recreación* with 6 papers. The former has an h-index of 67, the highest found in this study. It is part of the prestigious Elsevier publishing house and is an open access collection, indexed in

Wos that published conference proceedings presented between 2009 and 2018, focusing on the basic disciplines of the social and behavioural sciences. Following the cessation of its publications in 2018, the journal Retos appears to be the journal that will lead the way in body percussion publications in the coming years, with 14 publications as of August 2023 instead of the six represented in this study up to 2022. This journal is likely to be the most representative journal for body percussion from 2024 onwards.

Q7: What is the prevalence of document types?

Eight different document types are found with a predominance of book chapter, indexed in secondary search engines, mixed collaboration (with a greater presence of women), and male participation.

In contrast, the most cited document type is the proceeding paper indexed in primary search engines followed by the secondary search engine article. This is due to the fact that 34 of the 36 proceeding papers found are first-order treatment papers that refer exclusively to body percussion.

Q8: How many citations per paper were obtained?

The selected sample obtained a total of 1565 citations with an average of 6.39 citations per document and a range between zero and 97. Documents without citations in secondary search engines, written by men only, and with greater male participation, predominate, followed by documents with one and two citations.

If we look at the average number of citations per document, we can see that primary search engines have a higher average number of citations (9.94) than secondary ones (4.91); first order papers (6.86) more than second order papers (4.72); papers written only by men (7.57) more than mixed papers (5.95) and those written only by women (3.41); and finally, those written alone by women (3.50) more than those written by men (1.13). Again, as on previous occasions, it is noticeable that documents of the first order of treatment receive a greater number of citations (1310) than those of the second order (255).

Q9: What is the main number of authors per paper?

We found documents written alone or in collaboration with 11 authors with an average of 2.20 authors per document and a co-authorship index of 0.51, with solo authorship predominating followed by co-authorship between two and four signatories.

The co-authorship index found is very similar to that found by Arnau-Mollá and Romero-Naranjo (2022a) in which co-authorship between two authors predominates (0.59), but not to that reported by Arnau-Mollá and Romero-Naranjo (2022b) in which single authorship predominates (0.36). This difference is due to the large number of documents found in the latter with a single author, mainly in the books on foundations and activities.

With reference to the search engines, in the primary search engines, co-authorship between two authors predominates and a collaboration index of 0.74 is found, as 72 documents were found, 19 of which were written alone. In the secondary ones, single authorship prevails, with a

collaboration index of 0.42, and 173 papers were found, of which 100 were written alone.

In terms of the type of collaboration, studies written by men only have between one and five authors, with single authorship prevailing; mixed studies are written by between two and 11, with a greater number of documents published by two authors; those written by women only are written by between one and two authors, with single authorship prevailing.

On the other hand, 119 single-authored papers were found, 100 of which were indexed in primary search engines and 19 in secondary ones. In primary search engines, men publish four times more papers than women, while in secondary search engines, women publish three times more papers.

Q10: What is the h-index of the authors in the selected sample?

A total of 188 authors were found, of which 99 are female (52.66%) and 89 male (47.34%). They publish between one paper and 158 papers each. Based on the number of citations they received in the selected papers in this sample, an h-index of the authors emerged, ranging from zero to 17, with a predominance of h-index one, slightly higher in females (53.53%) than in males (51.67%).

Next, the 46 authors with a zero h-index are the most representative, with 24.72% of male authors and 24.24% of female authors. On the other hand, there are very few authors with the highest h-indexes, with the male author having an h-index of 17 and the female author having an h-index of 8.

Q11: What is the scientific output of the authors?

According to Crane's (1969) classification, a transience index of 70.21% is found in this study, due to the 132 transient authors who publish a single document, in which 70.70% of the authors in this study and 69.66% of the authors appear.

These results are slightly lower than the estimate proposed by Price (cited in Vallejo, 2005) according to which 75% of the authors are transient, i.e. they publish only one paper, while the remaining 25% are permanent authors.

In contrast, a higher rate of transience (81.55%) is found in Arnau-Mollá and Romero-Naranjo (2022a), and lower (58.44% and 59.70%) in Arnau-Mollá and Romero-Naranjo (2022b) and Serna et al. (2018).

Q12: Who are the most representative authors?

Eight major producers are found, among which Romero-Naranjo, FJ as a man with 158 documents, 1173 citations and index h 17; and Crespo-Colomino, N as a woman with 15 papers, 141 citations and index h 7. It should be noted that Liendo-Cardenas, A, with index h 5 obtains the same documents as Crespo-Colomino, N, but with a lower number of citations and indexed papers in primary search engines. The two most representative authors coincide in Arnau-Mollá and Romero-Naranjo (2022a) and Serna et al. (2018), but not in Arnau-Mollá and Romero-Naranjo (2022b) in which Trives-Martinez, EA

occupies the second position.

Romero-Naranjo, FJ, only published first-order papers exclusively on body percussion in 2001, 2004, 2006 and 2008, and continuously since 2011. His production is dominated by the foundational literature (132), followed by intervention (18) and research design (8), with 115 documents in secondary search engines, 60 of which are solo, and 43 in primary search engines with three solo.

Q13: Which papers were the most cited?

The most representative works are, in primary engines, Science & Art of body percussion: A review, written in 2013 by Romero-Naranjo, FJ in the Spanish Journal of Human Sport and Exercise with 97 citations; and in secondary engines, Percusión corporal en diferentes culturas, also by Romero-Naranjo, FJ published in 2008 by the journal *Música y Educación: Revista Trimestral de Pedagogía Musical* with 63 citations.

The former is the only review article to date on body percussion that is already a decade old and contains a critical classification of the subject up to 2013. Therefore, due to the great evolution in the literature presented in this study, a new review paper is needed to more accurately reflect the current state of body percussion.

Q14: What is the productivity per research group?

In this analysis there is only one research group that writes exclusively first-order papers on body percussion, led by the creator of the BAPNE method, Phd. Francisco Javier Romero-Naranjo. This group is made up of 88 authors (45.45% male and 54.55% female) and publishes 65.71% of the sample analysed (161) receiving 78.72% of the total citations (1232).

In secondary search engines it publishes, since 2001 and continuously since 2011, 73.29% of its production (118) receiving 55.36% of its citations (682). These include 114 works of rationale (70.81%), three of intervention in education (1.86%), and one of research design (0.62%), divided into four different formats, being 54 book chapters (33.54%), 38 books (23.60%), 14 articles (8.70%), and 12 proceedings paper (7.45%).

Moreover, 26.71% of its publication (43 papers) is indexed in primary search engines since 2013 uninterruptedly and receives 44.64% of citations (550). Of this production, 21 documents are of rationale (13.04%), 15 of intervention (9.32%), and seven of research design (4.35%), and are divided into three different formats, being 33 proceedings papers (20.50%), eight articles (4.97%), and two reviews (1.24%).

In reference to the type of collaboration, 56.52% of their production (91) is published by men only, while 43.48% is in mixed collaboration (70). The fact that within this group there are no works written by women only is due to the fact that the director of the group reviews and supervises all the documents, and therefore participates as co-author in all of them.

According to Crane's classification (1969), this group has a transience of 53.41% (47 authors with only one paper), a far cry from the 75% indicated by Price (Vallejo,

2005). On the other hand, there are 23 small producers who write between two and four papers (26.14%), 10 moderate producers between five and nine (11.36%), and eight large producers with more than 10 papers (9.09%).

If we refer to the gender of the authors in this group, we find a higher percentage of transient (55.00%/52.08%), moderate (12.50%/10.42%), and large producers (10.00%/8.33%) in men than in women, while women have a higher number of small producers than men (29.16%/22.50%). It should be noted that even though there are more women in the group, men participate more regularly in both secondary (185/93) and primary (82/52) search engine indexed documents.

Finally, and without being the subject of this study, it is worth mentioning the new appearance in 2023 of the research group of the University of Alicante Neuromotricity and Motor Literacy (Neuromotricity). This group is directed by Phd Romero-Naranjo and under which all future publications focused on the 15 lines of research mentioned in the introduction will be collected, rendering obsolete the former BAPNE research group that operated from 2001 to 2022.

Q15: What type of work prevails?

It is found that 74.98% of the documents are of substantiation or non-intervention (194). In secondary search engines 61.63% (151) were found with 47.94% of the papers written only by men (93), while in primary search engines 18 mixed papers (9.28%) predominated with a greater male participation (30).

The predominance in the secondary search engines is due to the presence of Romero-Naranjo, who alone publishes 38 books, 11 of the 26 book chapters, 10 of the 23 articles, and one proceeding paper out of the six that have appeared. In addition, the remaining five proceedings papers are written by men only.

Q16: What research designs predominate in intervention work?

In the selected sample, 17.14% of papers apply an intervention treatment (42), with 22 papers in primary search engines (10 first-order and 10 second-order) and 20 in secondary search engines (19 first-order and 3 second-order).

The intervention papers appeared in 2013 in secondary search engines and began to be published continuously from 2015 onwards. In these, there is a predominance of mixed papers (10) and equal participation of men and women (14). On the other hand, primary search engines start a little later, in 2014, and from 2019 they are published regularly every year. In this case, there is also a predominance of mixed jobs (16), while participation is mostly female (37/31).

The quantitative approach with a quasi-experimental design predominates, with a control and experimental group and repeated measures before and after the intervention with body percussion activities of the BAPNE method (pretest-posttest), all of them in the educational setting. Specifically in the stages of Primary Education

(Arnau-Mollá & Romero-Naranjo, 2020; Carretero-Martínez et al., 2014; Cozzutti et al., 2019; Díaz, 2016; Torró-Biosca et al., 2019); Secondary Education (Fabra-Brell & Romero-Naranjo, 2017b; Piqueres et al., 2019a, 2019b); Elementary Grade in music conservatories (Ros-Silla et al., 2019), and Intermediate Grade in music conservatories (Moral et al., 2020). This prevalence in the type of design of the intervention works fully coincides with Arnau-Mollá and Romero-Naranjo (2022a). In contrast, with Arnau-Mollá and Romero-Naranjo (2022b), only the type of quantitative approach and the type of BAPNE activities coincide, while in the latter, action research, the absence of a control group, and the use of a single evaluation measure (only post-test) predominate.

Q17: What types of assessment instruments are used in intervention work?

A total of 25 different assessment instruments were found in the 42 intervention papers, with a range of one to six per paper. Most of the research uses a single assessment instrument (29), refers exclusively to body percussion (26), is indexed in primary search engines (16), and has mixed collaboration (17). In addition, female participation is minimally higher than male participation (44/43).

The most frequently used type of evaluation instrument is the test (15) followed by the questionnaire (11), and they are more present in first-order documents (14/8) and in primary search engines (11/6). Mixed papers use the test most regularly (11), usually with slightly more male than female participation (31/28) in the test, and vice versa in the questionnaire (13/7). The tendency to use the test followed by the questionnaire is also observed in Arnau-Mollá and Romero-Naranjo (2022a), but not in Arnau-Mollá and Romero-Naranjo (2022b), where the questionnaire prevails over the test.

The BAPNE research group uses only six types of assessment instruments in their 18 intervention studies, while the independent authors use 23. This is due to the fact that, as a research group, they plan research on the same line and population, and thus the type of assessment instruments to be used.

Q18: Which settings and populations are most researched in intervention work?

There are five areas in which we intervene through body percussion, among which the educational area predominates with 36 documents and 246 citations, 19 of them indexed in secondary search engines with 64 citations, and the other 17 in primary search engines with 182 citations. The main target population is primary school pupils (6 to 12 years old) followed by secondary school pupils (12 to 16 years old). On the other hand, there is a prevalence of first order papers (24/12) and mixed collaboration with 21 papers with a higher participation of males than females (50/46). These results are in line with those found by Arnau-Mollá and Romero-Naranjo (2022b) in terms of the scope and population involved.

Most of the interventions carried out in Primary Education are related to the stimulation of cognitive

functions and executive functions (Arnau-Mollá & Romero-Naranjo, 2020; Castelló et al., 2019; Cozzutti et al., 2019; Torró-Biosca et al., 2019), socioemotional education (Almoguera, 2019; García, 2020; Lima et al., 2016) or psychomotor or coordination development (Carretero-Martínez et al., 2014; Díaz, 2016). In addition, there is work on the enjoyment of dance (Yun & Myungia, 2020), hand games (Riera & Casals, 2021) or the inclusion of different cultures (Pérez, 2014).

## Conclusion

The scientific-academic study of body percussion has grown exponentially, as 88.98% of the papers have been published in the last decade. This study presents the state of the art of body percussion up to 2022, through the bibliometric evolution of the subject based on the documents found in primary and secondary search engines, and with a focus on gender and the impact of the publications.

The main results obtained in this research are as follows:

a) That most of the literature is of a theoretical or foundational nature that deals exclusively with body percussion, published in Spain and written in Spanish in book chapter format and indexed in secondary search engines, whose maximum exponent is the Phd Francisco Javier Romero-Naranjo who directs the only exclusive research group on body percussion in the line of stimulation of cognitive and executive functions, as well as the new research group of the University of Alicante, Neuromotricity and Motor Literacy (Neuromotricity) with 15 open lines of research.

b) That there is a predominance of documents written by men only, as well as greater male participation, although there is a greater number of female authors.

c) That most of the intervention research is applied in the field of Primary Education through a quantitative approach, quasi-experimental design, with a control and experimental group, and repeated measures (pretest-posttest) using the test as an evaluation instrument.

This work can be of great help and serve as a basis for future researchers who intend to carry out work on the subject, as they will find a global vision of the current panorama of body percussion, as well as a large number of references to existing works. On the other hand, it presents new variables and substantial differences with previous works, in terms of the combination of primary and secondary search engines, including more databases than the previous ones in the secondary ones; inclusion of the study of gender, providing information on the type of collaboration between authors (only men, only women, mixed) and the degree of participation according to gender; the impact of the documents, providing the number of citations in all variables; the impact of the authors, showing the h-index obtained in this study based on their number of publications and citations received; the inclusion and discussion of 18 research questions that will summarise the

main results obtained; the provision of tables with a large amount of additional information. All this will allow readers not only to know the general results, but also to appreciate in a very detailed way the breakdown of the results, allowing them to make additional unwritten interpretations of each variable.

Some limitations of the study could be, on the one hand, the lack of figures or graphs that summarise the main results in a more visual way; and on the other, the inclusion of some documents not found in scientific-academic search engines, but which we are absolutely certain meet the inclusion criteria of this study.

Finally, and as a line for the future, it would be advisable to carry out a review study that would include and critically treat the content found in this study, given that the existing content is already a decade old. Furthermore, a statistical analysis could be carried out to determine whether the differences in impact and publication according to gender are significant or not; and a systematic review with meta-analysis could be carried out to exclude the significance of the results found in the body percussion intervention studies.

## References

- Аюбова, Н. А. (2023). Application of elements of body percussion technique at music lessons and in extracurricular activities as a means of developing musical and rhythmic musical and rhythmic abilities and motor coordination of children. *НАУЧНЫЙ АСПЕКТ*, 4(9), 1035-1039.
- Almoguera Martón, A. (2019). Una intervención psicoeducativa y musical en educación primaria [A psychoeducational and musical intervention in primary education]. *International Journal of Developmental and Educational Psychology*, 2(1), 151-159.
- Alonso-Marco, M., & Romero-Naranjo, F. J. (2022). Introducción al análisis cinemático de los movimientos básicos de la percusión corporal según el Método BAPNE. *Retos*, 46, 950–971. <https://doi.org/10.47197/retos.v46.94773>
- Alonso-Sanz, A., & Romero-Naranjo, F. J. (2015). El círculo en la relación espacio y cuerpo. Foto-Ensayo a partir de Isidro Blasco y el método BAPNE [The circle in the relationship between space and body. Photo-Essay based on Isidro Blasco and the BAPNE method]. *Arte Individuo y Sociedad*, 27(3), 357-372. [https://doi.org/10.5209/rev\\_ARIS.2015.v27.n3.41382](https://doi.org/10.5209/rev_ARIS.2015.v27.n3.41382)
- Álvarez-Morales, L. J., & Romero-Naranjo, F. J. (2019). Pilot study into executive functions with muslim and christian pupils in the city of Ceuta using body percussion. *The European Proceedings of Social & Behavioural Sciences EpSBS*, 60, Article 92. <https://dx.doi.org/10.15405/epsbs.2019.04.02.92>
- Andreu-Cabrera, E., & Romero-Naranjo, F. J. (2021). Neuromotricidad, Psicomotricidad y Motricidad. Nuevas aproximaciones metodológicas [Neuromotricity, Psychomotricity and Motor skills. New methodological approaches]. *Retos*, 42, 924–938. <https://doi.org/10.47197/retos.v42i0.89992>
- Arnau-Mollá, A. F., Asurmendi Telleria, E., Romero-Naranjo, F. J. & Di Russo, S. (2022). Esku dantza: Creative proposal through neuromotricity, BAPNE method. In Á. Martos Martínez, A. B. Barragán Martín, M. d. C. Pérez Fuentes, M. d. M. Molero Jurado, M. d. M. Simón Márquez & M. Sisto (Comps.), *Acercamiento Multidisciplinar Para la Investigación e Intervención en Contextos Educativos* (pp. 495-505). Dykinson, S.L.
- Arnau-Mollá, A. F., & Romero-Naranjo, F. J. (2020). Quantitative study on selective attention in children aged 8-9 years through bodypercussion. *European Proceedings of Social and Behavioural Sciences*, 84(6), 50-60. <https://doi.org/10.15405/epsbs.2020.05.6>
- Arnau-Mollá, A., & Romero-Naranjo, F. (2022a). A bibliometric study on body percussion based on high impact search engines. *Retos*, 45, 679-692. <https://doi.org/10.47197/retos.v45i0.92653>
- Arnau-Mollá, A. F., & Romero-Naranjo, F. J. (2022b). Body percussion as a pedagogical resource. Bibliometric study on body percussion based exclusively on secondary search engines. *Retos*, 46, 809–825. <https://doi.org/10.47197/retos.v46.95178>
- Arnau-Mollá, A. F. & Romero-Naranjo, F. J. (2022c). Body percussion research as an object of study based on neuromotricity and executive functions: Research design. In M. d. M. Molero Jurado, A. B. Barragán Martín, M. d. M. Simón Márquez, & Á. Martos Martínez (Comps.), *Innovación Docente e Investigación en Educación: Experiencias de Cambio en la Metodología Docente* (pp. 775-785). Dykinson, S.L.
- Arnau-Mollá, A. F. & Romero-Naranjo, F. J. (2022d). Evolution of the bapne method as an innovation method based on its justification in scientific-academic publications. In M. d. M. Molero Jurado, A. B. Barragán Martín, M. d. M. Simón Márquez, & Á. Martos Martínez (Comps.), *Innovación Docente e Investigación en Educación: Experiencias de Cambio en la Metodología Docente* (pp. 485-496). Dykinson, S.L.
- Arnau-Mollá, A. F. & Romero-Naranjo, F. J. (2022e). Urban rhythms and creativity: Proposals for didactic innovation from neuromotricity through the BAPNE method. In Á. Martos Martínez, A. B. Barragán Martín, M. d. C. Pérez Fuentes, M. d. M. Molero Jurado, M. d. M. Simón Márquez & M. Sisto (Comps.), *Acercamiento Multidisciplinar Para la Investigación e Intervención en Contextos Educativos* (pp. 463-474). Dykinson, S.L.
- Asurmendi Telleria, E. & Romero-Naranjo, F. J. (2022). How to teach body percussion through neuromotricity in the BAPNE method. In M. d. M. Molero Jurado, A. B. Barragán Martín, M. d. M. Simón Márquez, & Á. Martos Martínez (Comps.), *Innovación Docente e Investigación en Educación: Experiencias de Cambio en la Metodología Docente* (pp. 767-774). Dykinson, S.L.
- AYCAN, K. (2017). Kodály Metodundan Uyarlanan Deşifre Şarkı Söyleme Uygulamaları. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, 17(4), 1683–1701. <https://doi.org/10.17240/aibuefd.2017.17.32772-363960>
- Bango Melcon, P., Romero-Naranjo, J. L., Serena Drago, F., & Romero-Naranjo, F. J. (2017). Dimension analysis and architectural model of BAPNE classroom for pre-School and primary education. *Procedia - Social and Behavioral Sciences*, 237(February 21, 2017), 1284-1290. <https://doi.org/10.1016/j.sbspro.2017.02.211>
- Botella Nicolás, A. M., & Adell Valero, J. R. (2016). Una propuesta experimental en la enseñanza de la música en secundaria. *Cuadernos de Música, Artes Visuales y Artes Escénicas*, 11(1), 1-15.
- Bravo Fuentes, P. (2023). Proyecto de inclusión tecnológica para el estudio de la percusión corporal. *Tecnología, Ciencia y Educación*, 24, 169-194.

- <https://doi.org/10.51302/tce.2023.3265>
- Carretero-Martínez, A., Romero-Naranjo, F. J., Pons-Terres, J. M., & Crespo-Colomino, N. (2014). Cognitive, visual-Spatial and psychomotor development in students of primary education through the body percussion - BAPNE method. *Procedia – Social and Behavioral Sciences*, 152(October 7, 2014), 1282-1287. <https://doi.org/10.1016/j.sbspro.2014.09.363>
- Castelló-Juan, B., Antón-Suay, M. T., Flores-Morales, N., Vicedo-Reche, M., & Romero-Naranjo, F. J. (2019). Evaluating executive functions in primary school children in Alicante using body percussion. *The European Proceedings of Social & Behavioural Sciences EpSBS*, 60, Article 70. <https://dx.doi.org/10.15405/epsbs.2019.04.02.70>
- Cavan, V., Romero-Naranjo, F. J., & Bagolin, M. (2017). The efficacy of BAPNE method in dementia treatment: A research proposal in friuli venezia giulia, italy. *Procedia - Social and Behavioral Sciences*, 237(February 21, 2017), 1223-1228. <https://doi.org/10.1016/j.sbspro.2017.02.193>
- Chung, F. M. Y. (2022). Impacts of Music Teacher Education: Developing Generalists' Self-Efficacy Regarding Teaching Music to Young Children. In *Music and Play in Early Childhood Education* (pp. 97-130). Palgrave Macmillan, Singapore. [https://doi.org/10.1007/978-981-19-5033-9\\_4](https://doi.org/10.1007/978-981-19-5033-9_4)
- Conti, D., & Romero-Naranjo, F. J. (2015). Singing BAPNE®: Body percussion and voice as a didactic element. *Procedia - Social and Behavioral Sciences*, 197(July 25, 2015), 2498-2505. <https://doi.org/10.1016/j.sbspro.2015.07.322>
- Conti, D., & Romero-Naranjo, F. J. (2017). Body percussion and voice, time and pitch: An exercise in "singing BAPNE (R)" methodologically analyzed. *Education, Health and Ict for a Transcultural World*, 237, 798-803. <https://10.1016/j.sbspro.2017.02.150>
- Cozzutti, G., Blessano, E., de Biaggio, C., Tomasin, B., & Romero-Naranjo, F. J. (2017). Body solfège in the BAPNE method - measures and divisions. *Education, Health and Ict for a Transcultural World*, 237, 1572-1575. <https://10.1016/j.sbspro.2017.02.247>
- Cozzutti, G., Blessano, E., & Romero-Naranjo, F. J. (2014). Music, rhythm and movement: A comparative study between the BAPNE and willems methods. *Erpa International Congress on Education (Erpa Congress 2014)*, 152, 13-18. <https://10.1016/j.sbspro.2014.09.147>
- Cozzutti, G., Guaran, F., Blessano, E., & Romero-Naranjo, F. J. (2017). Effects on executive functions in the BAPNE method; A study on 8-9 years old children in Friuli Venezia Giulia, Italy. *Procedia – Social and Behavioral Sciences*, 237(February 21, 2017), 900-907. <https://doi.org/10.1016/j.sbspro.2017.02.126>
- Grane, D. (1969). Social structures in a group of scientist: A test of the 'Invisible College' hypothesis. *American Sociological Review*, 34, 335-352.
- Crespo-Colomino, N., Alonso Sanz, A., Romero-Naranjo, F. J., Moreno Cebrián, C., Pozzo, T., Andreu Guerrero, R., Liendo Cárdenas, A., & Romero Naranjo, A. A. (2015). ¿Para qué sirve la percusión corporal - método bapne? [What is the purpose of body percussion - Bapne method?]. In R. A. Rodríguez Pérez & M. B. Alfágeme González (Eds.), *Innovación y enseñanza en Educación Primaria* (1st ed., pp. 215-228). Ediciones de la Universidad de Murcia.
- Crespo-Colomino, N., Romero-Naranjo, F. J., Pons Terres, J. M., Carretero-Esteve, A., & Perez-Bravo, E. (2014). Perceived sensations related to the state of flowing factors produced during the performance of cognitive stimulation: Exercises through the didactics of the body percussion BAPNE method. *Procedia – Social and Behavioral Sciences*, 152(October 7, 2014), 1201-1206. <https://doi.org/10.1016/j.sbspro.2014.09.299>
- Стоильская, Н.Н. (2023). Methods of developing rhythmic thinking in children in vocal ensembles. *ВЕСТНИК НАУКИ*, 1(58) Т-5, 115-124.
- De Munari, E., Cozzutti, G., & Romero-Naranjo, F. J. (2016). Music and movement: A comparative study between the BAPNE and suzuki methods. *Erpa International Congresses on Education 2015 (Erpa 2015)*, 26, UNSP 01099. <https://10.1051/shsconf/20162601099>
- Di Russo, S., & Romero-Naranjo, F. J. (2021a). *Body Percussion in Spanish Music: A Methodological Approximation* [Written submission]. ERPA 2021 International Congresses on Education, Sakarya, Turkiye.
- Di Russo, S., & Romero-Naranjo, F. J. (2021b). *Body Percussion In The Work Of Composer Oscar Navarro. \*The Case Of "Libertadores* [Written submission]. ERPA 2021 International Congresses on Education, Sakarya, Turkiye.
- Di Russo, S., & Romero-Naranjo, F. J. (2023). The case of Ball dels Moretons in Mallorca. *Retos*, 49, 442-458. <https://doi.org/10.47197/retos.v49.97609>
- Di Russo, S., Salerno, G., Romero-Naranjo, F. J. & Arnau-Mollá, A. F. (2022). Las panaderas is creativity: From tradition to innovation. In Á. Martos Martínez, A. B. Barragán Martín, M. d. C. Pérez Fuentes, M. d. M. Molero Jurado, M. d. M. Simón Márquez & M. Sisto (Comps.), *Acercamiento Multidisciplinar Para la Investigación e Intervención en Contextos Educativos* (pp. 403-414). Dykinson, S.L.
- Díaz Pérez, A. (2016). *Trastorno del desarrollo de la coordinación: Programa de intervención a través de la música, la danza y la percusión corporal (método BAPNE)* [Developmental coordination disorder: Intervention programme through music, dance and body percussion (BAPNE method)] [Tesis Doctoral. Universidad de Murcia]. DIGITUM.
- Dihita Sagala, M., & Aria Widyatama, Z. (2023). Video Body Percussion: Pembelajaran Ritmik Bagi Siswa Sekolah Dasar. *Cinematology: Journal Anthology of Film and Television Studies*, 2(3), 49-57. <https://doi.org/10.17509/ftv-upi.v2i3.55252>
- Emer, V., & Romero-Naranjo, F. J. (2014). The use of body percussion in contemporary choral music. *Erpa International Congress on Education (Erpa Congress 2014)*, 152, 53-57. <https://10.1016/j.sbspro.2014.09.153>
- Fabra-Brell, E., & Romero-Naranjo, F. J. (2017a). Body percussion: Social competence between equals using the method BAPNE in secondary education (design research). *Education, Health and Ict for a Transcultural World*, 237, 1138-1142. <https://10.1016/j.sbspro.2017.02.168>
- Fabra-Brell, E., & Romero-Naranjo, F. J. (2017b). Social competence between equals through body percussion according to method BAPNE in secondary students. *Procedia-Social and Behavioral Sciences*, 237(February 21, 2017), 829-836. <https://doi.org/10.1016/j.sbspro.2017.02.179>
- García Mahamud, Á. (2020). Propuestas de plataformas emocionales de aprendizaje a través de la música y la percusión corporal. *Educación siglo XXI: Propuestas y experiencias educativas* (1st ed., pp. 18-26). ASIRE.
- García Sala, M., Piqueres de Juan, I., Sánchez González, E., Serna Domínguez, M., Trives Martínez, E. A., & Romero-Naranjo, F. J. (2018). El uso de la percusión corporal en las músicas urbanas [The use of body percussion in urban music]. In C.

- Guerrero Romera & P. Miralles Martínez (Eds.), *Innovación y modelos de enseñanza-Aprendizaje en la educación superior* (1st ed., pp. 131-140). Editum. <https://doi.org/10.6018/editum.2679>
- Garcías de Ves, S. (2021a). La percusión corporal: Del escenario al aula [Body percussion: From the stage to the classroom]. In S. Olivero Guidobono (Coord.), *El Devenir de las Civilizaciones: Interacciones Entre el Entorno Humano, Natural y Cultural* (pp.1588-1614). Dykinson, S.L.
- Garcías de Ves, S. (2021b). La percusión corporal en la formación inicial del profesorado de educación física. Satisfacción y/o frustración de las necesidades psicológicas básicas de los estudiantes universitarios [Body percussion in the initial training of physical education teachers. Satisfaction and/or frustration of the basic psychological needs of university students]. In O. Buzón-García, C. Romero-García, y A. Verdú-Vázquez (Coords.), *Innovaciones Metodológicas con TIC en Educación* (pp.2611-2637). Dykinson, S.L.
- Garcías de Ves, S. (2021c). Impacto positivo de una máster class online de percusión corporal para docentes [Positive impact of an online body percussion master class for teachers]. *Retos*, 42, 296-305. <https://doi.org/10.47197/retos.v42i0.87059>
- Garcías de Ves, S., & Joven, A. (2020). Percusión corporal en el aula. Superando barreras [Body percussion in the classroom. Overcoming barriers]. In A. M. Díaz, J. M. Alonso, & J. B. Llorens (Eds.), *Comunicar en Danza* (pp. 327-340). Libargo Editorial.
- Garcías de Ves, S., Joven Pérez, A., & Lorente-Catalán, E. (2022). Percusión corporal a través de la Esku Dantza. Efectos sobre las emociones en estudiantes de grado en Ciencias de la Actividad Física y el Deporte [Body percussion through Esku Dantza. Effects on emotions in students of Physical Activity and Sport Science]. *Retos*, 45, 326–336. <https://doi.org/10.47197/retos.v45i0.91463>
- González de Benatuil, M. L. M., Liendo Cárdenas, A., Asurmendi Telleria, E. & Romero-Naranjo, F. J. (2022). Bruno Mars and body percussion: Creative strategies from neuromotricity with the BAPNE method. In Á. Martos Martínez, A. B. Barragán Martín, M. d. C. Pérez Fuentes, M. d. M. Molero Jurado, M. d. M. Simón Márquez & M. Sisto (Comps.), *Acercamiento Multidisciplinar Para la Investigación e Intervención en Contextos Educativos* (pp. 449-461). Dykinson, S.L.
- González de Benatuil, M. L. M. & Romero-Naranjo, F. J. (2022). New methodologies in angola: The use of dual task as a pedagogical resource in music teaching. In M. d. M. Molero Jurado, A. B. Barragán Martín, M. d. M. Simón Márquez, & Á. Martos Martínez (Comps.), *Innovación Docente e Investigación en Educación: Experiencias de Cambio en la Metodología Docente* (pp. 681-688). Dykinson, S.L.
- González Sánchez, O. S., Romeu López, C. E., & Romero-Naranjo, F. J (2019). Pilot study of executive functions in elderly adults in care homes. *The European Proceedings of Social & Behavioural Sciences EpSBS*, 60, Article 95. <https://dx.doi.org/10.15405/epsbs.2019.04.02.95>
- González-Sánchez, O. S., Romeu-López, C. E., Sayago-Martínez, R. & Romero-Naranjo, F.J. (2021). *Body percussion and the cuban clave in the BAPNE Method* [Written submission]. ERPA 2021 International Congresses on Education, Sakarya, Turkiye.
- Heldal, F., Sacramento, I., & Wennes, G. (2018). Learning Entrepreneurship by Hand Clapping: ABM in Use in Entrepreneurship Education. In *Arts-Based Methods and Organizational Learning* (pp. 171-196). Palgrave Macmillan, Cham. [https://doi.org/10.1007/978-3-319-63808-9\\_8](https://doi.org/10.1007/978-3-319-63808-9_8)
- Iguasnia, S., & Saquisela, M. (2021). Estrés laboral, causas y consecuencias en los docentes de la unidad educativa fiscal jaimé roldós aguilera del distrito ximena 2 de la ciudad de guayaquil [Stress at work, causes and consequences in the teachers of the jaimé roldós aguilera educational unit in the ximena 2 district of the city of guayaquil]. *593 Digital Publisher CEIT*, 6(1), 18-28.
- Jauset Berrocal, J. A., Tripovic, Y., & Romero-Naranjo, F. J. (2014). El método BAPNE y su repercusión en las capacidades cognitivas [The BAPNE method and its impact on cognitive abilities]. In M. T., Tortosa Ybáñez, J. D. Álvarez Teruel & N. Pellín Buades (coords.), *XII Jornadas de Redes de Investigación en Docencia Universitaria. El reconocimiento docente: Innovar e investigar con criterios de calidad* (1st ed., pp. 1672-1686). Universidad de Alicante.
- Леоненко, А. О. (2023). Body percussion as a means of rhythmic education of preschoolers. In *The 12 th International scientific and practical conference "Modern research in world science"(February 26-28, 2023) SPC "Sci-conf. com. ua", Lviv, Ukraine. 2023. 1161 p.* (p. 508).
- Jiménez-Molina, J. B., Vicedo-Cantó, E., Sayago-Martínez, R., & Romero-Naranjo, F. J. (2017). Evaluating attention, socioemotional factors and anxiety in secondary school students in Murcia (Spain) using the BAPNE® method. Research protocol. *Procedia - Social and Behavioral Sciences*, 237(February 21, 2017), 1071-1075. <https://doi.org/10.1016/j.sbspro.2017.02.157>
- Kartomi, M. (2010). The development of the acehnese sitting song-Dances and frame-Drum genres as part of religious conversion and continuing piety. *Bijdragen Tot De Taal-, Land- En Volkenkunde*, 166(1), 83-106. <https://doi.org/10.1163/22134379-90003626>
- Kartomi, M. (2014). Concepts, terminology and methodology in music performativity research. *Musicology Australia*, 36(2), 189-208. <https://doi.org/10.1080/08145857.2014.958268>
- Koca, R. B. & Altuntaş, O. (2020). Dikkat Eksikliği ve Hiperaktivite Bozukluğu Olan Çocuklarda Beden Perküsyonu Eğitiminin Benlik Algısına Etkisi. *Ergoterapi ve Rehabilitasyon Dergisi*, 8(1), 39–44. <https://doi.org/10.30720/ered.525694>
- Latre-Nava, S., Martínez-Fernández, X., Rodríguez-Masafrets, A., Puigdevall-Cayuela, A., Torre, G., Finestres-Alverola, J., & Romero-Naranjo, F. J (2019). Cognitive stimulation in adolescents at risk of exclusion using the BAPNE® method. *The European Proceedings of Social & Behavioural Sciences EpSBS*, 60, Article 62. <https://dx.doi.org/10.15405/epsbs.2019.04.02.62>
- Lee, H. (2021). Utilizing body-percussion in music class. *Korean Journal of Research in Music Education*, 50(1), 131-154.
- Liendo Cárdenas, A. & Romero-Naranjo, F. J. (2022). Cognitive and socioemotional stimulation for elderly people in venezuela: BAPNE for seniors in Caracas. In M. d. M. Molero Jurado, A. B. Barragán Martín, M. d. M. Simón Márquez, & Á. Martos Martínez (Comps.), *Innovación Docente e Investigación en Educación: Experiencias de Cambio en la Metodología Docente* (pp. 739-744). Dykinson, S.L.
- Lima Brasil, M., Pontes da Silva, D., Donizete Gomes, J., & Dantas, R. (2016). Reflexões sobre a percussão corporal na escola municipal Aleixo Pereira Braga II [Reflections on body percussion at the municipal school Aleixo Pereira Braga II].

- Conexoes Culturais. *Revista de Linguagens, Artes e Estudos em Cultura*, 2(1), 372-379. <https://doi.org/10.23899/relacult.v2i1.153>
- Lotfi, S., Khalafbeigi, M., Sadr, N. M., & Saneii, S. H. (2018). The effectiveness of body percussion rhythmic exercises on motor skills in children with mild intellectual disability between 8-12 years old. *Function and Disability Journal*, 1(3), 40-47.
- López Melgarejo, A. M., López Núñez, N., & de Moya Martínez, M. V. (2023). Musication: un recurso TIC para docentes de música [Musication: an ICT resource for music teachers]. *ENSAYOS, Revista de la Facultad de Educación de Albacete*, 38(1), 63-79.
- Marcuzzi, C., & Javier Romero-Naranjo, F. (2017). BAPNE method, developmental dyslexia and inclusive education: Cognitive, socio-emotional and psychomotor stimulation in secondary school. A practical resource for education within a cross curriculum. *Education, Health and Ict for a Transcultural World*, 237, 1291-1298. <https://10.1016/j.sbspro.2017.02.212>
- Mas-Mas, D., Arnau-Mollá, A. F., & Romero-Naranjo, F. J. (2023). Dual-task and movement: a bibliometric study based on high-impact search engines. *Retos*, 50, 995-1009. <https://doi.org/10.47197/retos.v50.100176>
- Montero, I. & León, O. G. (2005). Sistema de clasificación del método en los informes de investigación en Psicología [Method classification system in psychology research reports]. *International Journal of Clinical and Health Psychology*, 5, 115-127.
- Moral Bofill, L., Vicedo Molla, F., & Romero Naranjo, F. J. (2020). Estudio piloto de variables socio-Emocionales, ansiedad y flow en alumnos de grado profesional de música mediante actividades BAPNE [Pilot study of socio-Emotional variables, anxiety and flow in music students through BAPNE activities]. *Educatio Siglo XXI*, 38(2), 193-212. <https://doi.org/10.6018/educatio.432971>
- Moreno-Cebrian, C., Romero-Naranjo, F. J., & Crespo-Colomino, N. (2017). BAPNE as a mediation and conflict resolution tool in education. Methodological introduction. *Education, Health and Ict for a Transcultural World*, 237, 1551-1556. <https://10.1016/j.sbspro.2017.02.244>
- Navarro-Maciá, V., & Romero-Naranjo, F. J. (2023). Jazz and body percussion. A proposal of creative strategies with the BAPNE method. *Retos*, 51, 509-518. <https://doi.org/10.47197/retos.v51.100544>
- Peker Togay, A. G. & Karagöz Dursun, B. (2021). Beden Müziğinin 13-14 Yaş Grubu Öğrencilerinin Olumsuz Düşüncelerine Etkisi [The Effect of Body Music on the Negative Thoughts of 13 -14-Year-Old Students]. *Inonu University Journal of the Faculty of Education*, 22(3), 2606-2627. <https://doi.org/10.17679/inuefd.1030823>
- Penalva Martínez, R., Arnau-Mollá, A. F., & Romero-Naranjo, F. J. (2023). Traditional dances in Spain. Bibliometric study based on high impact search engines. *Retos*, 51, 18-31. <https://doi.org/10.47197/retos.v51.100338>
- Pérez Aldeguer, S. (2014). The influence of students' cultural music and classroom music activities on their attitudes towards their multiethnic peers. *Procedia - Social and Behavioral Sciences*, 116(February 21, 2014), 3471-3475. <https://doi.org/10.1016/j.sbspro.2014.01.786>
- Piqueres Juan, I., Sánchez González, E., Serna Domínguez, M., Trives Martínez, E. A., García Sala, M., & Romero-Naranjo, F. J. (2018). Aproximación a la justificación de la atención selectiva a través de la percusión corporal-Método BAPNE [An approach to the justification of selective attention through body percussion - Bapne Method]. In C. Guerrero Romera & P. Miralles Martínez (Eds.), *Innovación y modelos de enseñanza-Aprendizaje en la educación superior* (pp. 141-152). Edit.um. <https://doi.org/10.6018/editum.2679>
- Piqueres-Juan, I., Sarmiento-Alienes, S., Sánchez-González, E., & Romero-Naranjo, F. J. (2019a). Pilot study into sustained and selective attention using the BAPNE method. *The European Proceedings of Social & Behavioural Sciences EpSBS*, 60, Article 93. <https://dx.doi.org/10.15405/epsbs.2019.04.02.93>
- Piqueres-Juan, I., Sarmiento-Alienes, S., Sanchez-Gonzalez, E., & Javier Romero-Naranjo, F. (2019b). Pilot study into sustained and selective attention using the bapne method. *Viii International Conference on Intercultural Education and International Conference on Transcultural Health: The Value of Education and Health for a Global, Transcultural World (Eduhem 2018)*, 60, 751-759. <https://10.15405/epsbs.2019.04.02.93>
- Piscazzi, A. (2015). La sperimentazione de "El Sistema" di Antonio José Abreu nei nuclei musicali pugliesi [The experimentation of "El Sistema" by Antonio José Abreu in the musical nuclei in Puglia]. *RELAdeI: Revista Latinoamericana De Educación Infantil*, 4(2), 163-180.
- Pons-Terrés, J. M., Romero-Naranjo, A. A., Romero-Naranjo, F. J., Crespo-Colomino, N., & Liendo-Cárdenas, A. (2014). Estimulación de la atención dividida: Didáctica de la percusión corporal-Método BAPNE [Stimulation of divided attention: Didactics of body percussion - BAPNE Method]. In M. T., Tortosa Ybáñez, J. D. Álvarez Teruel & N. Pellín Bua-des (coords.), *XII Jornadas de Redes de Investigación en Docencia Universitaria. El reconocimiento docente: Innovar e investigar con criterios de calidad* (pp. 1040-1050). Universidad de Alicante.
- Pons-Terres, J. M., Romero-Naranjo, F. J., Carretero-Martinez, A., & Crespo-Colomino, N. (2014). Perceptions towards wellness and life quality through body percussion - BAPNE method and cognitive stimulation in elderly people. *Procedia - Social and Behavioral Sciences*, 152(October 7, 2014), 1108-1113. <https://doi.org/10.1016/j.sbspro.2014.09.283>
- Pozzo, T., Romero-Naranjo, F. J., Crespo Colomino, N., Moreno Cebrián, C., & Liendo Cárdenas, A. (2015). Estrategias básicas en la didáctica de la percusión corporal-método BAPNE [Basic strategies in the didactics of body percussion - BAPNE Method]. In R. A. Rodríguez Pérez & M. B. Alfageme González (Eds.), *Innovación y enseñanza en Educación Primaria* (1st ed., pp. 511-521). Universidad de Murcia.
- Presti, G., & Javier Romero-Naranjo, F. (2017). Singing canons: A didactic suggestion, using BAPNE method. *Education, Health and Ict for a Transcultural World*, 237, 1449-1454. <https://10.1016/j.sbspro.2017.02.229>
- Quarello, A., Pezzuto, E., Romero-Naranjo, F. J., & Liendo Cárdenas, A. (2014). Voice and movement in circle with body percussion. facilitation in learning observed in voice BAPNE® method and in circlesongs teaching. In M. T., Tortosa Ybáñez, J. D. Álvarez Teruel & N. Pellín Bua-des (coords.), *XII Jornadas de Redes de Investigación en Docencia Universitaria. El reconocimiento docente: Innovar e investigar con criterios de calidad* (1st ed., pp. 1522-1534). Universidad de Alicante.
- Riera Martínez, J., & Casals Ibáñez, A. (2021). ¡Coreografía, música... acción! Caracterización y patrones gestuales de los juegos de manos en castellano [Choreography, music... Action! Characterization and gestural patterns of hand clapping games in spanish]. *Revista Musical Chilena* 75(235), 101-131.

- <http://dx.doi.org/10.4067/S0716-27902021000100101>
- Romero-Naranjo, F. J. (2006). Body music! body percussion! Didáctica de la percusión corporal. *Música y Educación: Revista Trimestral de Pedagogía Musical*, 19(68), 49-88.
- Romero-Naranjo, F. J. (2008a). Bodymusic-bodypercusión: Ritmos de rock, funky, reage y samba con percusión corporal y su aplicación didáctica [Bodymusic-bodypercussion: Rock, funky, reage and samba rhythms with body percussion and their didactic application]. *Percepción y expresión en la cultura musical básica* (1st ed., pp. 121-137). Ministerio de Educación Cultura y Deporte, Subdirección General de Información y Publicaciones.
- Romero-Naranjo, F. J. (2008b). Percusión corporal e inteligencias múltiples [Body percussion and multiple intelligences]. *Actes de les VII jornades de música: Barcelona 3-4 setembre de 2008* (1st ed., pp. 21-38). Universitat de Barcelona, Institut de Ciències de l'Educació, ICE.
- Romero-Naranjo, F. J. (2008c). Percusión corporal en diferentes culturas [Body percussion in different cultures]. *Música y Educación: Revista Trimestral de Pedagogía Musical*, 21(76), 46-97.
- Romero-Naranjo, F. J. (2012). Percusión corporal y lateralidad. Método BAPNE [Body percussion and laterality . BAPNE Method]. *Música y Educación: Revista Trimestral de Pedagogía Musical*, 25(91), 30-51.
- Romero-Naranjo, F. J. (2013a). Criterios de evaluación en la didáctica de la percusión corporal - Método BAPNE [Evaluation criteria in the didactics of body percussion - BAPNE Method]. *Educatio Siglo Xxi*, 31(1), 235-253.
- Romero-Naranjo, F. J. (2013b). Percusión corporal como recurso terapéutico. Cuestiones metodológicas [Body percussion as a therapeutic resource. Methodological issues]. In J. D. Álvarez Teruel, M. T., Tortosa Ybáñez & N. Pellín Buades (coords.), *La producción científica y la actividad de innovación docente en proyectos de redes* (1st ed., pp. 2940-2954). Universidad de Alicante.
- Romero-Naranjo, F. J. (2013c). Percusión corporal en Indonesia y Sudáfrica: Recursos para el aula [Body Percussion in Indonesia and South Africa: Resources for the classroom]. *Música y Educación: Revista Trimestral de Pedagogía Musical*, 26(93), 38-47.
- Romero-Naranjo, F. J. (2013d). Science & art of body percussion: A review. *Journal of Human Sport & Exercise*, 8(2), 442-457. <https://doi.org/10.4100/jhse.2012.82.11>
- Romero-Naranjo, F. J. (2014a). *Body Percussion and Multiple Intelligences. Cognitive, Social-Emotional and Psychomotor Stimulation* (10ª Ed., Vol. 1). Body music Body percussion.
- Romero-Naranjo, F. J. (2014b). *Body Percussion and Multiple Intelligences. Cognitive, Social-Emotional and Psychomotor Stimulation* (10ª Ed., Vol. 2). Body music Body percussion.
- Romero-Naranjo, F. J. (2014c). Body percussion and memory for elderly people through the BAPNE method. *6th International Conference on Intercultural Education "Education and Health: From a Transcultural Perspective"*, 132, 533-537. <https://10.1016/j.sbspro.2014.04.349>
- Romero-Naranjo, F. J. (2015). Danza y Percusión Corporal. Una aproximación etnográfica [Dance and Body Percussion. An ethnographic approach]. In Chinchilla Minguet, J.L. & Díaz Olaya, A.M (Coords.), *Danza, Educación e Investigación. Pasado y Presente* (pp. 159-165). Ediciones Aljibe.
- Romero-Naranjo, F. J. (2017). *Bapne and african songs 3: Multiple intelligences, cognitive, socio-emotional and psychomotor stimulation: Body percussion* (3rd ed.). Body music Body percussion.
- Romero-Naranjo, F. J. (2019a). *Africa for children: Neuromotricity and executive functions*. 2-99 años (1st ed.). Body music Body percussion Press.
- Romero-Naranjo, F. J. (2019a). *BAPNE for Alzheimer -Neuromotricity- Justificación Teórico-Práctica*. Body music-Body Percussion Press.
- Romero-Naranjo, F. J. (2019b). *BAPNE & Expresión Corporal -Neuromotricity- Justificación Teórico-Práctica*. 2-99 años. Body music-Body Percussion Press.
- Romero-Naranjo, F. J. (2019c). *BAPNE for Babies -Neuromotricity- Justificación Teórico-Práctica*. Body Music Body Percussion Press.
- Romero-Naranjo, F. J. (2019d). *BAPNE for children & fine motor skills: Neuromotricity and executive functions*. 2-99 años (8th ed.). Body Music Body Percussion Press.
- Romero-Naranjo, F. J. (2019e). *BAPNE for children & gross motor skills: Neuromotricity and executive functions*. 2-99 años (8th ed.). Body Music Body Percussion Press.
- Romero-Naranjo, F. J. (2019f). *BAPNE for children: 3-6 años* (1st ed.). Body Music Body Percussion Press.
- Romero-Naranjo, F. J. (2019g). *BAPNE for Parkinson -Neuromotricity- Justificación Teórico-Práctica*. Body music-Body Percussion Press.
- Romero-Naranjo, F. J. (2019h). *BAPNE for Seniors -Neuromotricity- Justificación Teórico-Práctica*. Body music-Body Percussion Press.
- Romero-Naranjo, F. J. (2019i). *Cognitive solfege: Beat and motor control*. 2-99 años (10th ed.). Body Music Body Percussion Press.
- Romero-Naranjo, F. J. (2019j). *Cognitive solfege: Neuromotricity and executive functions*. 2-99 años (10th ed.). Body Music Body Percussion Press.
- Romero-Naranjo, F. J. (2019k). Recursos didácticos sobre percusión corporal y repertorio cubano: Una aproximación desde la perspectiva de las funciones ejecutivas [Teaching resources on body percussion and Cuban repertoire: An approach from the perspective of executive functions]. *Edunovatic 2021 conference proceedings: 6th virtual international conference on education, innovation and ICT: 1-2 december, 2021* (1st ed., pp. 977-981). REDINE (Red de Investigación e Innovación Educativa).
- Romero-Naranjo, F. J. (2020a). La percusión corporal como recurso interdisciplinar [Body percussion as an interdisciplinary resource]. In A. J. Calvino (Coord.), *Informe especial Odite sobre tendencias educativas: Educación en tiempos de pandemia* (nº 3, época 2, pp. 134-143). Procompal publicaciones.
- Romero-Naranjo, F. J. (2020b). Percusión corporal y "Solfeo cognitivo". Recursos pedagógicos según el método BAPNE [Body percussion and "Cognitive solfeggio". Pedagogical resources according to the BAPNE method]. *Pensamiento Actual*, 20(35), 105-121. <https://doi.org/10.15517/PA.V20I35.44398>
- Romero-Naranjo, F. J. (2020c). Body Percussion in the Physical Education and Sports Sciences . An Approach to its Systematization According to the BAPNE Method. *International Journal of Innovation and Research in Educational Sciences*, 7(5), 421-431.
- Romero-Naranjo, F. J. (2021a). Neuromotricidad y Matemáticas. 3/4 años [Neuromotricity and Mathematics. 3/4 years]. Body music-Body Percussion Press.
- Romero-Naranjo, F. J. (2021b). Neuromotricidad y Matemáticas. 4/5 años [Neuromotricity and Mathematics. 4/5 years]. Body music-Body Percussion Press.
- Romero-Naranjo, F. J. (2021c). Neuromotricidad y

- Matemáticas. 5/6 años [Neuromotricity and Mathematics. 5/6 years]. Body music-Body Percussion Press.
- Romero-Naranjo, F. J. (2022a). BAPNE Fit: Neuromotricity and body percussion in physical activity and sport sciences. *The Educational Review, USA*, 6(2), 37-44. <http://doi.org/10.26855/er.2022.02.001>
- Romero-Naranjo, F. J. (2022b). Visuomotor skills and neuromotricity in the BAPNE method. Real-Time signaling as a learning resource. In M. A. de la Ossa Martínez (ed.). *La educación y formación musical en el siglo XXI. ¿Somos competentes para el enfoque competencial?* (pp. 303-325). Silex Ediciones.
- Romero-Naranjo, F. J., & Alonso Sanz, A. (2013). Una experiencia educativa con anuncios televisivos y percusión corporal [An educational experience with TV commercials and body percussion]. *Reflexiones, análisis y propuestas sobre la formación del profesorado de educación secundaria* (1st ed., pp. 218-220). Universidad Nacional de Educación a Distancia – UNED.
- Romero-Naranjo, F. J., & Andreu Cabrera, E. . (2023a). Neuro-motricity as an interdisciplinary resource. Theoretical-practical justification through the BAPNE method. *Retos*, 49, 350–364. <https://doi.org/10.47197/retos.v49.98903>
- Romero-Naranjo, F. J., & Andreu-Cabrera, E. (2023b). Physical condition and neuromotricity. Theoretical-practical justification according to the BAPNE method. *Retos*, 50, 215–227. <https://doi.org/10.47197/retos.v50.98712>
- Romero Naranjo, F. J., & Andreu Cabrera, E. (2023c). The Ten Pillars of Neuromotricity. Theoretical-practical justification according to the BAPNE method. *Retos*, 50, 357–370. <https://doi.org/10.47197/retos.v50.98333>
- Romero-Naranjo, F. J., Andreu-Cabrera, E., & Arnau-Mollá, A. F. (2023). Neuromotricity and body schema. Bases for the use of body percussion in the sciences of physical education and sport. *Retos*, 47, 615–627. <https://doi.org/10.47197/retos.v47.95922>
- Romero-Naranjo, F. J., Arnau-Mollá, A. F., Di Russo, S., Salerno, G., Liendo Cárdenas, A., Asurmendi Telleria, E. & González de Benatuil, M. L. M. (2022). Bola cantabile: Creative strategies for the classroom from the BAPNE method. In Á. Martos Martínez, A. B. Barragán Martín, M. d. C. Pérez Fuentes, M. d. M. Molero Jurado, M. d. M. Simón Márquez & M. Sisto (Comps.), *Acercamiento Multidisciplinar Para la Investigación e Intervención en Contextos Educativos* (pp. 485-494). Dykinson, S.L.
- Romero-Naranjo, F. J., Arnau-Mollá, A. F., González de Benatuil, M. L. M., Liendo Cárdenas, A., Di Russo, S., Salerno, G., Asurmendi Telleria, E. & Sempere García, C. (2022). Neuromotricity and mathematics in children: Methodological approach based on rhythmic-Motor activities. In M. d. M. Molero Jurado, A. B. Barragán Martín, M. d. M. Simón Márquez, & Á. Martos Martínez (Comps.), *Innovación Docente e Investigación en Educación: Experiencias de Cambio en la Metodología Docente* (pp. 745-755). Dykinson, S.L.
- Romero-Naranjo, F. J., Arnau-Mollá, A. F., González de Benatuil, M. L. M., Salerno, G., Liendo Cárdenas, A., Asurmendi Telleria, E. & Di Russo, S. (2022). Chocolate: Body percussion and creativity from the BAPNE method. In Á. Martos Martínez, A. B. Barragán Martín, M. d. C. Pérez Fuentes, M. d. M. Molero Jurado, M. d. M. Simón Márquez & M. Sisto (Comps.), *Acercamiento Multidisciplinar Para la Investigación e Intervención en Contextos Educativos* (pp. 475-483). Dykinson, S.L.
- Romero-Naranjo, F. J., Crespo-Colomino, N., Liendo-Cardenas, A., Pons-Terres, J. M., & Carretero-Martinez, A. (2014). Drugs and body percussion: Rehabilitation therapy using the BAPNE method. *Procedia - Social and Behavioral Sciences*, 152(October 7, 2014) 1128-1132. <https://doi.org/10.1016/j.sbspro.2014.09.287>
- Romero-Naranjo, F. J., & González de Benatuil, L. M. (2022a). Body percussion and urban rhythms as an interdisciplinary resource. *SHS Web of Conferences*, 150, 1-7. <https://doi.org/10.1051/shsconf/202215001005>
- Romero-Naranjo, F. J., & González de Benatuil, L. M. (2022b). Practice of BAPNE FIT to Improve Cardiorespiratory Fitness. *SHS Web of Conferences*, 150, 1-8. <https://doi.org/10.1051/shsconf/202215001006>
- Romero-Naranjo, F. J., & Llorca-Garnero, J. . (2023). Ergospirometry & body percussion. Case study based on BAPNE FIT method. *Retos*, 48, 674–683. <https://doi.org/10.47197/retos.v48.97928>
- Romero-Naranjo, F. J., Pujalte Cantó, F. J., & Arnau-Mollá, A. F. . (2023). Body percussion and selective attention. Interdisciplinary quantitative study through neuromotricity activities BAPNE method based on the dual task in Primary Education. *Retos*, 48, 844–860. <https://doi.org/10.47197/retos.v48.97661>
- Romero-Naranjo, F. J. & Romero-Naranjo, A. A. (2022). Percusión corporal y salud [Body percussion and health]. *Eufonía: Didáctica de la Música*, (93), 16-23.
- Romero-Naranjo, F. J., & Sayago-Martínez, R. (2021a). *Music motor control and dual task. Handball change as a musical-Motor paradigm* [Written submission]. ERPA 2021 International Congresses on Education, Sakarya, Turkiye.
- Romero-Naranjo, F. J., & Sayago-Martínez, R. (2021b). *Rhythm, cognitive solfege and body percussion. Proposal for educational* [Written submission]. ERPA 2021 International Congresses on Education, Sakarya, Turkiye.
- Romero-Naranjo, F. J., Sayago-Martínez, R., Jiménez-Molina, J. B. ., & Arnau-Mollá, A. F. . (2023). Pilot Study of the Assessment of Anxiety and Attention through Body Percussion and Neuromotricity in Secondary School Students in Physical Education, Music and Visual Arts classes. *Retos*, 47, 573–588. <https://doi.org/10.47197/retos.v47.95595>
- Ros-Silla, E., Valcarcel-Marsa, S., Jaikel-Arce, D., Berlai, S., Giglio, R., Payro-Escobar, A., & Romero-Naranjo, F. J. (2019). Attention in conservatoire students using body percussion following the BAPNE method. *The European Proceedings of Social & Behavioural Sciences EpSBS*, 60, Article 57. <https://dx.doi.org/10.15405/epsbs.2019.04.02.57>
- Sánchez González, E., Romero-Naranjo, F. J., Trives Martínez, E. A., Serna Domínguez, M., Piqueres de Juan, I., & García Sala, M. (2018). Breve introducción a la evolución de la escritura musical en la didáctica de la percusión corporal desde 1960 hasta la actualidad [Brief introduction to the evolution of music writing in the teaching of body percussion from 1960 to the present day]. In C. Guerrero Romera & P. Miralles Martínez (Eds.), *Innovación y modelos de enseñanza-Aprendizaje en la educación superior* (1st ed., pp. 52-66). Editum. <https://doi.org/10.6018/editum.2679>
- Salerno, G., Cefaratti, L., & Javier Romero-Naranjo, F.J (2017). The BAPNE method: A new approach and treatment for depressive disorders. *Education, Health and Ict for a Transcultural World*, 237, 1439-1443. <https://doi.org/10.1016/j.sbspro.2017.02.225>
- Salerno, G. & Romero-Naranjo, F. J. (2022). Cognitive stimulation and neuromotricity: New treatment strategies for the

- prevention of neurodegenerative diseases and healthy active ageing. In Á. Martos Martínez, M. d. M. Molero Jurado, M. d. C. Pérez Fuentes, A. B. Barragán Martín & P. Molina Moreno (Comps.), *Innovación Docente e Investigación en Salud: Experiencias de Cambio en la Metodología Docente* (pp. 423-431). Dykinson, S.L.
- Sayago-Martínez, R., Salerno, G., Di Russo, S., Arnau-Mollá, A., & Romero-Naranjo, F. J. (2021, June 03-05). *Socioemotional aspects of music-Motor activities according to the BAPNE method* [Written submission]. ERPA 2021 International Congresses on Education, Sakarya, Turkiye.
- Serna Domínguez, M., Romero-Naranjo, F. J., Sánchez González, E., Piqueres de Juan, I., García Sala, M., & Trives Martínez, E. A. (2018). Investigación en percusión corporal: Estudio bibliométrico de la percusión corporal hasta 2017 [Research in body percussion: Bibliometric study of body percussion until 2017]. In C. Guerrero Romera & P. Miralles Martínez (Eds.), *Innovación y modelos de enseñanza-aprendizaje en la educación superior* (pp. 40-51). Edit.um.
- Siminghalam, M., Alibakhshi, H., Valikhani, N., Gholami, M., & Mirshoja, M.S. (2023). The Effects of Body Percussion Exercise on Balance in Older Adults. *Journal of Modern Rehabilitation*, 17(1), 57-62. <https://doi.org/10.18502/jmr.v17i1.11303>
- Sutela, K., Juntunen, M., & Ojala, J. (2020). Applying music-And-Movement to promote agency development in music education: A case study in a special school. *British Journal of Music Education*, 37(1), 71-85. <https://doi.org/10.1017/S0265051719000184>
- Sutela, K., Ojala, J., & Kielinen, M. (2021). Developing agency through music and movement. *Research Studies in Music Education*, 43(2), 195-211. <https://doi.org/10.1177/1321103X20934084>
- Sotelo Martín, J. A., Gamella González, D., & Fernández Cahill, M. (2022). Eficacia de la musicoterapia en un caso de duelo patológico. *Revista de Investigación en Musicoterapia*, 6(1), 46–69.
- Toksoy, A. C., & Başar, Ş. (2017). 6-12 Yaş Orta-Ağır Zihinsel Yetersizliği Olan Çocuklar İçin Ritim Uygulamaları. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, 17(1), 384–399. <https://doi.org/10.17240/aibuefd.2017.17.28551-304642>
- Torró-Biosca, R., Aparici-Mínguez, F., Arnau-Mollá, A. F., Ullate-Orozco, R. M., Cabrera-Quirós, D. A., & Romero-Naranjo, F. J. (2019). Pilot study into the executive functions of children aged 8-9 BAPNE method. *The European Proceedings of Social & Behavioural Sciences EpSBS*, 60, Article 94. <https://dx.doi.org/10.15405/epsbs.2019.04.02.94>
- Trives Martínez, E. A., & Vicente-Nicolás, G. (2013). Percusión corporal y los métodos didácticos musicales [Body percussion and music didactic methods]. In M. T., Tortosa Ybáñez, J. D. Álvarez Teruel & N. Pellín Buades (coords.), *XI Jornadas de Redes de Investigación en Docencia Universitaria. Retos de futuro en la enseñanza superior: Docencia e investigación para alcanzar la excelencia académica* (pp. 1748-1759). Universidad de Alicante.
- Universidad de Alicante (10 de agosto de 2023). *Neuromotricidad y Alfabetización Motora (Neuromotricity)*. [https://cvnet.cpd.ua.es/curriculum-breve/grp/es/neuromotricidad-y-alfabetizacion-motora-\(neuromotricity\)/721](https://cvnet.cpd.ua.es/curriculum-breve/grp/es/neuromotricidad-y-alfabetizacion-motora-(neuromotricity)/721)
- Vallejo Ruiz, M. (2005). Estudio longitudinal de la producción española de tesis doctorales en educación matemática (1975-2002) [Longitudinal study of the Spanish production of doctoral theses in mathematics education (1975-2002)] [Tesis doctoral, Universidad de Granada]. Digibug.
- Yun, S. H., & Myungja, H. (2020). The effect of rhythm expression class using body percussion on dance enjoyment. *Journal of Korean Society for Rhythmic Exercises*, 13(2), 15-26. <https://doi.org/10.34270/jksre.2020.13.2.15>