

Music education for the deaf: characteristics, barriers and successful practices

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Abstract

This work aimed at mapping the international scientific production concerning music education for the deaf, or musical notation for the deaf, in the ISI Web of Knowledge/Web of Science™, one of the main databases there is. Its temporal cut encompassed the years from 1956 to 2017. The study tried to identify the main articles concerning the topic with a focus on the analysis of the characteristics, barriers and successful practices of such type of education. A bibliometric study was used and it identified 217 articles whose data were processed through the HistCite™ software. The results pointed to the identification of the main journals, the most cited articles and the main authors in the area. Among the main characteristics in music education for the deaf, it was possible to see that it must be centered on melodic repetition, and that the presence of the family is essential in this process. The lack of listening skills and communication difficulties are the main barriers. The realization of interviews for the definition of criteria for the milestone of music education for the deaf, the creation of development inventories and the cognitive and auditory assessment are the main practices developed in the area. Thus, it was possible to imply that, along the period studied, a focus on the researches led the studies concerning the deafness issue in itself to the role of music education in the acquisition of basic skills by the deaf, as well as to studies on diversity and prejudice related to the deaf person. Likewise, it was possible to see that, concerning the role of the school, of the teacher and

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of the pedagogical infrastructure around music learning, the studies that were developed addressed deaf parents, children and adults as the main actors.

Keywords

Special education – Music education – Deafness – Characteristics – Barriers – Successful practices.

Introduction

Music is always present in the life of humans and in history as well (LIMA, 2015). It plays an interpretative role about human reality and presents itself as the expression of happiness, sadness, loss, victory, peace, and war, among other settings in the objective and subjective world. In the context of the deaf, which are the focus of this research, this reality is not very different for, despite hearing impairment, we are all sensitive to music (HAGUIARA-CERVellini, 2003; DUARTE, 2017).

However, history shows that the way deafness was seen influenced the way society interpreted the relationship between music and deafness. In the Eastern Classical Antiquity, the deaf, as well as the insane, were seen as irrational beings that had no possibility to be educated and inserted in society, for the spoken word was the device (of power) that separated them from social living (FOUCAULT, 1979).

In the 16th century, however, Italian doctor Girolamo Cardano (1501-1576) suggested literature and writing for deaf individuals, since he showed that, when exposed to certain signs and stimuli, deaf people could assimilate abstract ideas. Girolamo Cardano fought against the perspective that the deaf were unteachable. Upon coming up with a similar perspective, Charles-Michel de L'Épée (1712-1789), in France, founded the first public school for the deaf in the world (HAGUIARA-CERVellini, 2003).

In the Contemporary Age (1789-1900), especially in Europe and in the United States, deaf education earned a meaningful spot in society due to actions from American Gallaudet (1787-181) and L'Épée's disciple, French Laurent Clerc (1785-1869) (HAGUIARA-CERVellini, 2003), who caused the outbreak of humanistic reforms and revolutions in whose cores was the concern with respect to human rights and the valorization of each individual as a human being. At that time, the decisive historical milestones in deafness was the Congress of Milan, in 1880, through which deaf education was considered an exclusive method of education in this area (HAGUIARA-CERVellini, 2003). As a consequence of the change of perspective on deaf people, the 1980's United States witnessed the start of a movement known as Deaf Power, which entitled the deaf with the right to their own language and the right to be treated as different instead of deficient.

With the strengthening of identity specifications from the deaf community, Sign Language, as the natural language of the deaf, received political layouts, whose developments reached the formal education universe. Thus, amidst the achievements and advancements of science and technology in the 20th century, among them the development

of electroacoustic, the presence of sound-amplifying devices and the possibilities of surgical interventions, the possibility the deaf would break their musical silence barrier became an objective.

Following this train of thought, and despite the advancements recorded in history, it should be emphasized that when an individual is diagnosed with deafness, some qualities and possibilities are attributed to them, as well as some limitations. Society and, oftentimes, the family itself, decide what they will or not be able to do, especially concerning their musical practice. In most education, training and qualification plans for the deaf, music is only present to enable rhythmic speech development, and it is seen as a mean and not an end (HAGUIARA-CERVELLINI, 2003).

Therefore, music is seen as leisure to the deaf person, as an inclusive educational practice which can show the possibility of moving between the physical, the intellectual and the social world (BRAGANÇA; FERREIRA; PONTELO, 2015). Moreover, the moment of representing the deaf individuals' subjectivity representation still seems to be neglected.

According to Haguiara-Cervellini (2003), among parents and teachers, there is the disbelief concerning the possibility the deaf individual will experience music in their routine, since there is the idea that musical learning is centered on decoding and organizing sounds with the objective to create a musical sense. This way, "this impairment is noticed because the music auditory aspect is undervalued" (DUARTE, 2017, p. 11).

However, this won't stop the deaf from learning music, for, as Araújo (2018) states:

[...] although the human hearing system is the main responsible for capturing all the audible sound waves, and since they are unable to capture sounds, the deaf person uses their sight as the main mean of communication and perception. (ARAÚJO, 2018, p. 1).

In this sense, technology plays an important role upon showing deaf users how they should proceed when performing certain rhythmic measures that are present in music and in musical exercises (PEREIRA, 2015; ARAÚJO, 2018), which can be coded into multi-sensorial experiences that involve "vibrant sensations, body expression and the relationship between sound and image" (DUARTE, 2017, p. 25).

Despite the different actors and the different social, cultural and technological advancements involved in the music education for the deaf, it is necessary to carry on with the investigations to speed up aspects left aside by a large part of the studies, such as the characteristics, the barriers and the successful practices of music education for the deaf. From this observation, as one tries to understand what the international academy says and thinks about the topic through their most relevant articles, comes the following problem: what is published internationally about music education for the deaf and how do these publications address the characteristics, the barriers and the successful practices in this context of education?

With this problem in mind, the objective of this work was, therefore, to map the international scientific production about music education for the deaf, or musical notation for the deaf, in one of the main databases there is, the ISI Web of Knowledge/Web of Science™, in the temporal cut concerning the years from 1956 to 2017, and identify the

main articles concerning the topic when it comes to the characteristics, the barriers and the successful practices of this type of education.

This way, it is possible to present the general results obtained from the bibliometric survey, with a special focus on the evolutionary trajectory of the publications that deal with the theme shown, with the citations, the journals, the authors with the highest number of records published in the databases and with the geographical location of the main bonding institutions of the authors. Following this problematization, the articles that are mostly cited in the databases are assessed along with those which were mostly cited in the set of selected articles for this study.

Therefore, it is worth mentioning that, for the music education field, this research is justified for measuring the scientific production in the area concerning the identification of the reference journals about the topic. Moreover, and because of this, the present study problematizes aspects that are fairly addressed in specialized literature on music education for the deaf, such as the characteristics, the barriers and the successful practices of this type of education. It is believed that, from the reasons exposed, this investigation may contribute to the creation of public educational policies and inspire educators to try to overcome the musical silence that was historically and socially imposed upon deaf individuals.

The next section will clarify the methodological procedures done in this research, and the following sections will show the result analysis and the main remarks that come from this study.

Methodological procedures

Concerning the methodological procedures, the bibliometric analysis was used. The reason for such is that it quantitatively identifies the research trends and also measures indexes on the scientific production growth of a certain theme area (CIL, 2017).

The Web of Science™ database was used for the realization of this investigation due to its academic recognition since it is one of the largest journal databases in terms of knowledge area. Likewise, its choice considered the fact it supports software tools that enable the retrieval of data on references, authors, institutions, and countries, among other indexes (SILVA; HAYASHI; HAYASHI, 2011; MOURA et al., 2017), which enabled the analyses developed in this study.

As for data collection procedures, the search period available from the database for full years (1945-2017) was used with the objective to enable this research to be replicated or updated without the need to perform it again from the beginning. Thus, the following search terms were defined, in this order: music education or musical learning and deaf or deafness. Data collection was performed by searching these terms in the articles' titles.

The results pointed to the year 1956 as the first publication entry on the theme. After the search, some refinement was done for the works found through the application of filters offered by the search engine from the Web of Science's main collection. The first type of refinement applied was type of document with the option article selected, which generated results that presented only full articles published in journals, excluding book

chapters, reviews and articles published in academic events' annals. The second criterion of refinement was areas of knowledge, which highlighted the areas that produced the most on the theme of music education or musical notation for the deaf. They are: special education or music education research, which refer to areas that encompass contents that belong to the scientific field of music education for the deaf. Another filter applied was language, which searched for works in English, Portuguese or Spanish and encompassed articles written in the English, Portuguese or Spanish language. Due to the refinements applied, 217 works were identified and used as a set of articles for the bibliometric analyses proposed by this research.

After data collection, the obtained data were exported into the HistCite™ bibliometric analysis software with the objective to gather the information and enable the assessment of the bibliographic material. The following was considered as analysis criteria: the publications' yearly evolution trajectory; the journals with the highest number of entries; the authors with the highest number of publications; the number of articles distributed by the authors' country of origin; and the most globally cited articles in the Web of Science™. Besides these data generated by the software, textual aspects of the ten most globally cited articles were clarified with the objective to identify their main contributions to the theme on music education for the deaf. The results of these analyses are presented in the following section.

Results presentation and analysis

After the realization of the bibliometric survey in the Web of Science™ main collection, 217 articles on music education for the deaf (and the remaining terms described in the previous section) were identified. These articles are published in 45 different journals indexed to the database, and were written by 294 authors linked to 167 institutions located in 24 countries. In order to reach these articles, 3,681 references were used, with an average of approximately 16 references by article, according to the results presented in Table 1, below.

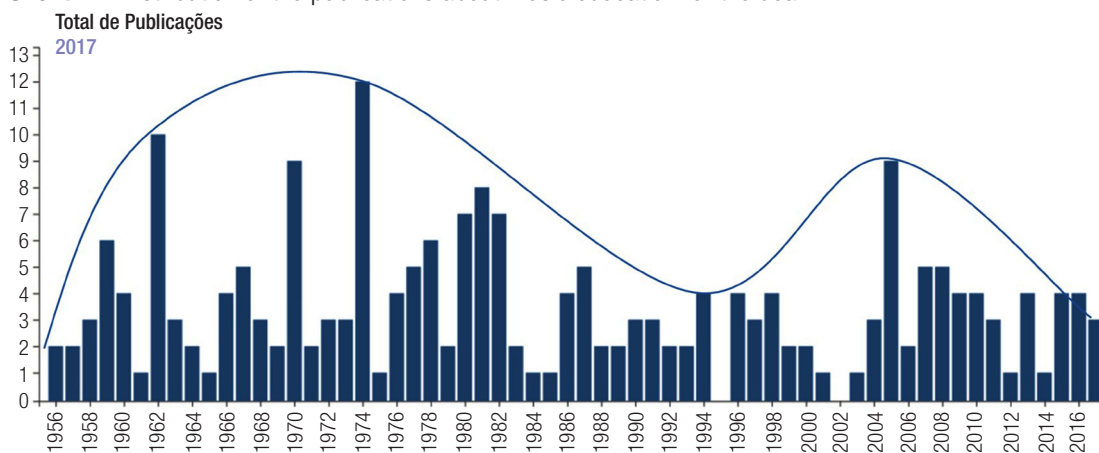
Table 1 – Results of the bibliometric survey about music education for the deaf

Bibliometric data	Numbers
Publications (articles)	217
Indexed journals	45
Authors	294
Institutions (authors' bonds)	167
Countries	24
References cited	3.681

Source: Research data.

As seen in Chart 1, which presents the evolution of the publications about the theme, the first entry of an article indexed to the Web of Science™ dates from 1956. This work, by Myklebust (1956), raised the discussion about the fact that the needs of training the language of children with hearing impediment were different from the needs of aphasic children. This finding referred to several contexts, including music, since the expressive language (writing) must follow and not precede the receptive language (reading). This seems to be true not only when it comes to the spoken language but also in the contexts of other symbolic systems, like music, since it becomes evident that it is not possible to write before it is possible to read.

Chart 1 – Distribution of the publications about music education for the deaf



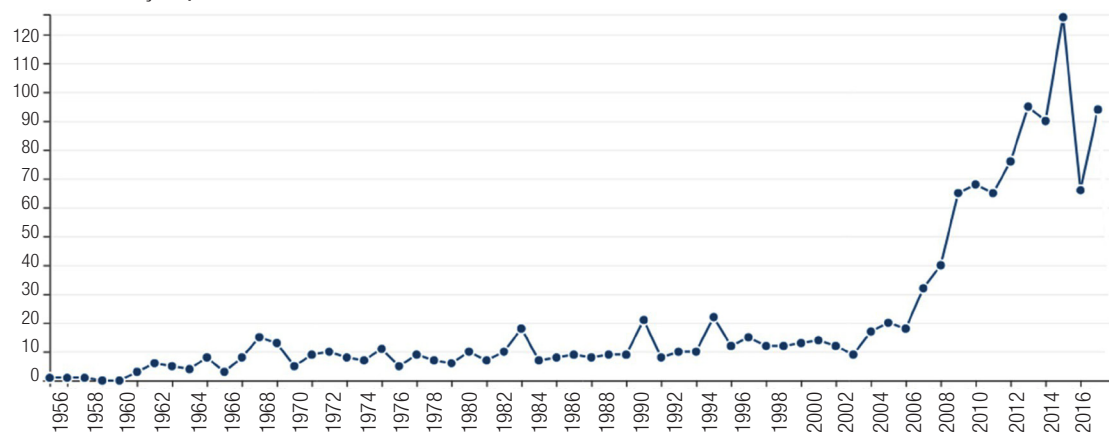
Source: Research data.

From the first article published in 1956 to the works published in 2017, it is possible to see that the topic in question presents an irregular and descending distribution. The peak of publications was reached in 1974, when most of the manuscripts echoed studies performed with children, and consisted of deafness etiology, congenital deafness from measles, multiple deafness causes, multiple deafness disadvantages, deafness check-up and deafness prevention.

Through these observations, it was possible to see that the researches were mostly turned to the deafness issue than to music education for the deaf. However, in the last five years, there have been few publications in the area that now deals with the music education role in the acquisition of basic skills of deaf children (DURAN; CASTELL, 2012), the intersections between hereditary deafness and hearing loss and its influence on music education (FORDYCE et al., 2015; NYST, 2015), deafness, music and diversity (JACKSON; AMMERMAN; TRAUTWEIN, 2015; GUARDINO; CANNON, 2016), music and prejudice against the deaf person (NETO; PINTO; MULLET, 2016).

On the other hand, as seen in Chart 2, the number of citations about music education for the deaf has increased, which can be explained by the rigor of scientific journals, and reflected on the average increase of references by article, which grew to 30 in the last 12 years.

Chart 2 – Citation distribution by year concerning the publications on music education for the deaf
 Número de citações por ano



Source: Research data.

Table 2 identifies the international journals that are most representative for the topic concerning music education for the deaf. The 45 journals analyzed were indexed to the Web of Science™ database concerning the number of articles published on the topic and the total of citations in the database. After adding up the works published in these ten journals, there was a total of 174 entries, which corresponds to a little over 80% the total number of works identified. The journal with the highest number of publications and citations is the American Annals of the Deaf, which has 86 entries concerning the publications. This index can be useful for future researches and works as an indicator of the relevance of the journals with the highest number of publications concerning the topic.

Table 2 – Journals with the highest number of articles published about music education for the deaf (1956-2017)

Journals	Number of Articles	Citations	Citation %
American Annals of the Deaf	86	452	35.1
Volta Review	38	119	9.2
Commonwealth Foundation-Occasional Paper	11	0	0
Journal of Deaf Studies and Deaf Education	9	198	15.4
Exceptional Children	8	66	5.1
Teacher of the Deaf	8	2	0.2
Bulletin of the Council for Research in Music Education	4	0	0
Journal of the British Association of Teachers of the Deaf	4	8	0.6
Journal of Mental Deficiency Research	3	18	1.4
Journal of Special Education	3	11	0.9

Source: Research data.

After analyzing the journals, the authors with the highest number of publications in the selection of this bibliometric study were identified. Table 3 lists these authors' names, their institutional bonds and the institution's country of origin. The ten authors with the highest number of publications were selected. At first, it was possible to see that some of the publications either don't have a renowned author or their data were not informed in the Web of Science™ database. Then, among the authors with the highest number of publications about the topic is McCay Vernon, who works at the McDaniel College, in the United States, with eight articles. From the information in Table 3, it is possible to see that the highest amount of works was produced in the United States.

Table 3 – Authors with the highest number of publications on music education (1956-2017)

Authors	Number of Articles	Bonding institution	Country
Unknown (or undisclosed) author	9	-	-
Vernon M.	8	McDaniel College	United States
Doctor P. V.	4	Unknown (or undisclosed) institution	-
Boothroyd A.	3	City University of New York	United States
Goodhill V.	3	University of California	United States
Moore D. F.	3	Gallaudet University	United States
Peretz I.	3	University of Montreal	Canada
Schein J. D.	3	Steinhardt School of Culture, Education and Human Development	United States
Webster A.	3	Queensferry Primary School	United Kingdom
Altshuler K. Z.	2	Columbia University	United States

Source: Research data.

In order to visualize the representativeness of country of origin of the bonding institutions of the 167 authors in the 217 works mapped in this bibliometric study, the ten countries with the highest scientific production in the area of music education for the deaf were identified, as shown in Table 4. The list also ranks these ten countries, with a special focus to the United States, which holds 73.2% of the publications on the theme.

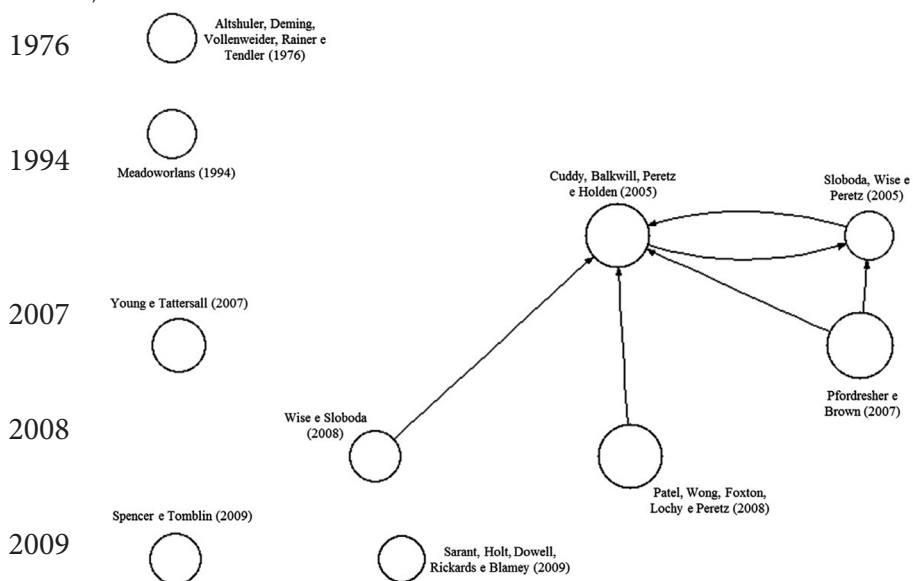
Table 4 – Number of articles by country of origin of the authors' bonding institutions

Country	Number of Articles	%
USA	159	73.2
United Kingdom	16	7.4
Canada	14	6.5
Australia	7	3.2
Holland	4	1.8
Brazil	3	1.4
France	3	1.4
Belgium	2	0.9
India	2	0.9
Austria	1	0.5

Source: Research data.

The set of 215 articles found in the Web of Science™ database tried to identify the most representative works on the topic. Figure 1, below, shows the relationship between the most cited articles in the entire database and which articles are the most cited in the group (different circle sizes). It also shows which ones present a link to the citations (the lines that connect the circles).

Figure 1 – The 10 most cited articles in music education for the deaf in the Web of Science™ database (Global Citation Score)



Source: Research data.

In this sense, the work by Cuddy et al. (2005) stands out. This work was cited by Slodoba; Wise; Pertz (2005), Pfordresher; Brown (2007), Wise; Sloboda (2008) and Patel et al. (2008). Therefore, the work by Cuddy et al. (2005) can be considered as a main reference (VASCONCELOS; CASTRO; BRITO, 2018), for it is an article that serves as the basis for other articles that also had a high number of citations. The work by Slodoba; Wise; Pertz (2005) was also cited by other important publications. The remaining articles are not connected but had a high number of citations. The number of citations and the main reference information of such works are listed in Table 5.

Table 5 – The most cited works in the Web of Science™ (Global Citation Score) database about music education for the deaf (1956-2017)

Web of Science™ citations	Work Titles	Publication Sources	References
72	Poor-pitch singing in the absence of "tone deafness"	Music Perception, 25 (2): 95-115	Pfordresher and Brown (2007)
68	Speech intonation perception deficits in musical tone deafness (congenital amusia)	Music Perception, 25 (4): 357-368	Patel, Wong, Foxton, Lochy and Pertz (2008)
66	Musical difficulties are rare - A study of "Tone deafness" among university students	Neurosciences and Music II: From Perception to Performance, 1060: 311-324	Cuddy, Balkwill, Pertz e Holden (2005)
50	Universal newborn hearing screening and early identification of deafness: Parents' responses to knowing early and their expectations of child communication development	Journal of Deaf Studies and Deaf Education, 12 (2): 209-220	Young and Tattersall (2007)
44	Establishing an empirical profile of self-defined "tone deafness": Perception, singing performance and self-assessment	Musicae Scientiae, 12 (1): 3-26	Wise and Sloboda (2008)
43	Evaluating Phonological Processing Skills in Children With Prelingual Deafness Who Use Cochlear Implants	Journal of Deaf Studies and Deaf Education, 14 (1): 1-21	Spencer and Tomblin (2008)
41	Impulsivity and profound early deafness - Cross-Cultural Inquiry	American Annals of The Deaf, 121 (3): 331-345	Altshuler, Deming, Vollenweider, Rainer and Tendler (1976)
40	Quantifying tone deafness in the general population	Neurosciences and Music II: From Perception to Performance, 1060: 255-261	Sloboda, Wise and Pertz (2005)
39	Stress, support, and deafness - perceptions of infants mothers and fathers	Journal of Early Intervention, 18 (1): 91-102	Meadow-Orlans (1994)
38	Spoken Language Development in Oral Preschool Children With Permanent Childhood Deafness	Journal of Deaf Studies and Deaf Education, 14 (2): 205-217	Sarant, Holt, Dowell, Rickards and Blamey (2009)

Source: Research data.

The most cited work in the group was written by Pfordresher; Brown (2007). From an empiric work, the authors made one of the first detailed acoustic analyses of lip syncing in a population of neurologically normal non-musician adults. This research reported the accuracy with which people lip-sync to new melodies. The study also analyzed the lip-syncing of new melodies instead of performing songs by heart. According to the authors, the lip-syncing tasks enable strict measures concerning the perception of the absolute and relative hearing. As for the use of new melodies, it avoids possible variations between the explicit singing skill and the previous exposition to known melodies. Production data analyses showed two major groups of singers: those who lip-sync, where the transposition of notes was followed by measure compression, which were between 10% and 16% of the samples researched – absolute hearing; and those with a relative hearing perception, which were, therefore, the majority of the sample researched.

Patel et al. (2008) give important indication on amusia, which is characterized by the problems related to music melodic perception difficulty. The work was developed with British and French-Canadians. At first, it suggested that the individuals researched had no problems with their speech intonation perception. However, they presented a deficit that could be related to their glide variation rate (or the transition sound that is not distinctive) in the final steps of their statements/questions and to their slow-paced speech. These findings suggest that amusia provides a useful gap concerning the neural relationships between language melodic thinking and music, which is distinguished by serious problems in music perception.

Cuddy et al. (2005) proposes a study concerning the self-report of deafness and its possible relationship to congenital amusia. Two hundred students were recruited. Out of these, 100 reported they were somehow deaf, and the other half had no reports whatsoever. In the first step, the participants completed the six tests in the Montreal Battery of Evaluation of Amusia (MBEA), defined by Peretz; Champod; Hyde (2003). In the second step, the participants answered an extensive questionnaire which was designed to get details concerning their music experiences, skills, trainings and interests.

Twenty-eight items in the questionnaire were submitted to factor analysis. Four orthogonal components came out of the analysis, which are: (1) vocal production, (2) music teaching, (3) hearing attitudes, and (4) childhood memories related to musical environments. The best and most meaningful MBEA scores were factors 1 and 2, followed by factor 3. One of the conclusions of this study was that, from the MBEA results, and from their reports, many deaf individuals considered themselves unable to learn music. However, the authors suggest that, despite this information, these individuals must have the support in any of their efforts to keep their music pleasure.

The fourth most cited article was led by Young; Tattersall (2007). The authors proposed an evaluation of the first implementation phase of the National Hearing Screening Program (NHSP), in England. The research contributed to the basis of limited evidences concerning the impact of the moment deafness was first identified in the families. In their results, the authors carried a study through qualitative interviews with 45 parents of children identified as deaf, and analyzed the following aspects of parental experiences: (a) how parents describe the impact of early awareness that their child is deaf, and (b) the

first parental assumptions on the impact about the moment it was first identified in the development of their deaf children, especially their communication.

The work developed by Wise; Sloboda (2008) came to the conclusion that most people who define themselves as deaf do not have a perception deficit but sing with less precision and feel they are less confident in their singing. However, these people are able to make accurate judgements about the quality of their singing and can improve it through proper training. The results deconstructed the stereotype according to which the deaf person can't sing or have their music education perfected.

Spencer; Tomblin (2008) investigated the possibility to establish the validity of a series of tasks to measure the skills from people with hearing loss and users with cochlear implant. Another objective of the study concerned documenting the range of skills in children who have more than three years of experience in cochlear implant use in order to compare this age group with those who can hear perfectly well. The comparison was made through word reading. The study's final objective was to first and foremost examine the relationship between the skills in people with hearing loss and their reading skills.

On the other hand, Altshuler et al. (1976) performed psychological tests of impulsiveness in 250 teenagers with early deafness in the United States and Yugoslavia, and in 100 perfect-hearing teenagers in each of these countries. The individuals were selected by their brain damage and organized by their intelligent quotient and by their social-economic status. The results showed that the American deaf teenagers are more impulsive than the perfect-hearing teenagers researched, whereas the Yugoslavian deaf teenagers were generally more impulsive than the American ones. The sample of deaf and perfect-hearing individuals researched also provided a first approximation to the normative data for the deaf in social behavior studies (ALTSHULER et al., 1976).

Sloboda; Wise; Peretz (2005) performed two studies. The first one constitutes an interview study with adults who define themselves as deaf or apt to music learning. The interview layout was planned to discover which criteria are used in their reports. The preliminary results suggested that the performance criteria (for example, "seeing themselves as unable to sing") played an important role, even for people who say and show they don't have perceptive deficits. The second study consisted of building reports for the development of new sub-tests based on the first research, so as to subsidize the Montreal Battery of Evaluation of Amusia.

Meadoworlans (1994) studied the relationship between parental stress (life stress) and social support, and observed the influence of such relationship in the hearing deficits of babies who were diagnosed with early deafness (average age = 2.8 months). For the concretization of the research, data from 20 mothers and 16 fathers were collected and compared with a sample of mothers and fathers who had perfect-hearing children. The results showed that parental stress was not an influencing factor concerning deafness diagnosis.

The tenth most cited article in the databases is the one by Sarant et al. (2009). The participants were evaluated according to a combination of the Child Development Inventory, the Peabody Picture Vocabulary Test and the pre-school clinic evaluation concerning language principles, and considered the children's age at the moment of the evaluation. Maternal schooling, cognitive capacity and family involvement were also

measured. Generally speaking, more than half of the participating children in the study presented unsatisfactory language results.

The multiple regression analysis showed that family participation, hearing loss level and cognitive capacity allowed the anticipation of the children’s language performance results and, from mutual chaining, they were responsible for almost 60% of the test score variation. The article highlighted the importance of family participation in intervention programs so that the children could reach results concerning language in the proper timing. The study also provided prospective data and documented the results concerning the speech of children with hearing loss in Australia. Therefore, this study was important for the advancement in the children’s evaluation processes in that country with the objective to know their needs of development and stimuli.

The analysis of the main (or most cited) articles that are present in the database researched for this bibliometric study shows the characteristics, the barriers and the successful practices in music education for the deaf, according to Table 6.

Table 6 – Characteristics, barriers and successful practices in music education for the deaf

Characteristics What are the “characteristics” of music education for the deaf?	Barriers What are the barriers for music education for the deaf?	Successful practices What are the formal or non-formal successful practices in music education for the deaf?	References
Vocal skills must be addressed separately from music training, with a focus on lip syncing instead of on the production of new melodies.	Deficit in musical note conversion by the ear in relation to phonation targets.	-	Pfordresher and Brown (2007)
-	Amusia, which causes music and melodic perception problems.	-	Patel, Wong, Foxtan, Lochy and Peretz (2008)
Train hearing attitudes.	Lack of hearing attitudes.	The use of self-report on music experiences, skills, training and interests.	Cuddy, Balkwill, Peretz and Holden (2005)
-	-	The realization of hearing evaluation.	Young e Tattersall (2007)
-	Communication difficulty. The deaf feel less confident about music learning.	Developing music awareness may trigger a change in the belief that the deaf person is not able to learn music.	Wise and Sloboda (2008)
-	-	Cochlear implants for the development of hearing skills. Documentation of hearing development in deaf individuals in comparison with the hearing development in perfect-hearing people.	Spencer and Tomblin (2008)
-	-	Realization of tests.	Altshuler, Deming, Vollenweider, Rainer and Tandler (1976)
-	The deaf claims do be unable to sing.	Realization of interviews in order to define criteria for music education.	Sloboda, Wise and Peretz (2005)
-	-	Early diagnosis and intervention related to parental stress and social support for parents and children, despite the evidence that this factor has no influence on the development of music practices.	Meadow-Orlans (1994)
Family participation, identification of hearing loss level and cognitive capacity of the deaf interfere in language.	Unsatisfactory language. Lack of identification about hearing loss level.	The use of inventories concerning development, picture vocabulary test, cognitive capacity clinic evaluation and family involvement.	Sarant, Holt, Dowell, Rickards and Blamey (2009)

Source: Research data.

Conclusions

After analyzing the data, the results met the research objective by identifying the publications when they were specifically directed to the activities linked to music education for the deaf, as well as to those which are predominantly associated to the characteristics, the barriers and the successful practices of this type of education.

Through this research, it was also possible to see that there is a longitudinal deficit in the publications on music education for the deaf, which, therefore, gives room to consider the topic in the academic environment. Likewise, it was possible to see that: (1) the main reference journal in the area is the American Annals of the Deaf; (2) the author with the highest number of publications on the topic is McVay Vernon; (3) the main publications come from American teaching institutions; and (4) the reference articles on the topic were published in 2005 by Cuddy; Balkwill; Peretz; Holden and by Sloboda; Wise; Peretz. Moreover, it was possible to see that the studies developed included deaf parents, children and adults as research subjects to the detriment of the role of the school, the teacher and the pedagogical structure necessary for music learning.

Concerning the characteristics of music education for the deaf, the main manuscripts in the area admitted that the vocal skill of the deaf person must be addressed separately from music training through hearing attitude trainings. As for the deaf person's music training, the focus is on lip-syncing instead of on producing new melodies and, also, on the importance of family participation in the learning process. The identification of the hearing loss level and cognitive capacity also proved to be necessary for this type of education, with the objective to contribute to a better language development. The barriers that were identified are intimately related to the deaf person's unsatisfactory language, the lack of hearing loss level identification, the deficit in musical note conversion by the ear in relation to phonation targets, amusia, which is the inability responsible for melodic music perception problems, and the lack of hearing attitudes and communication difficulties. Therefore, within this context, the deaf feel less confident about music learning and claim to be unable to learn to sing.

On the other hand, the successful practices concern the use of self-report about the deaf person's musical experiences, skills, training and interest in music, the realization of auditory evaluation, music awareness, which is a factor that triggers changes in the beliefs that the deaf person is not able to learn music, the use of cochlear implants for the development of hearing skills, the documentation of hearing development in the deaf in comparison with the hearing development of the perfect-hearing people, by evaluating the deficits for music education planning, the realization of interviews to define criteria for music education and development inventories, the realization of picture vocabulary tests, the cognitive capacity clinic evaluation and, finally, the success in music learning by the deaf, which takes place when the family, especially the parents, are involved.

This work was also able to see that the research focus shifted from studies concerning deafness issue itself to (1) the role of music education in the acquisition of basic skills by the deaf, (2) the intersections between hereditary deafness and hearing loss with a focus on the influences of these triggers over music learning, and (3) studies on diversity and prejudice against the deaf person.

The fact the Web of Science™ database was used exclusively can be presented in these remarks about its range limitations, which is configured as an indicator of possibilities of future expansions for this study. Another limitation identified was that none of the studies addressed music education for the deaf in the education context in developing countries. Thus, and as suggestions for future researches, the realization of empiric and longitudinal works to measure the existence or lack of confirmation of the characteristics, the barriers and the successful practices recorded in the main studies in the area addressed by this work is also included.

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