



## Inclusion of blind and visually impaired people in music education programs.

Inclusión de personas invidentes y débiles visuales en los programas de enseñanza musical.

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### SUMMARY

We begin this article by exposing the problems that concern inclusive education and that linked to children with special needs and among these, blind and visually impaired learners. In addition, we briefly expose the general characteristics of inclusive education and highlight the valuable activity of the teacher and writer, Alicia Molina, who has worked to inform about disability in Mexico and in the same way, strives to achieve the inclusion of children with disabilities in art and culture activities. In a succinct way, we present the profile of some great blind musicians of the twentieth century, to conclude with a brief description associated with the research work that the authors of this article are finalizing related to the musical teaching of blind and visually impaired young people.



**Keywords:** Stimulation. Special education. Neuroscience. Disability. Musicography. Triphototechnology.

## ABSTRACT

We begin this article by discussing the issue of inclusive education and education for children with special needs included blind or visually impaired. In addition, we present the general characteristics of inclusive education and highlight the valuable activity of the teacher and writer, Alicia Molina, who has worked about disability in Mexico and in the same way, struggles to achieve the inclusion of children with disability in arts and cultural activities. We present the general characteristics of inclusive education and give recognition to teacher and writer, Alicia Molina, who taken on the task of informing about disability in Mexico and also works to achieve the inclusion of children with disabilities in art and cultural activities. In a succinct way, we present the profile of some great musicians of the 20th century, to conclude with a brief description linked to the research work we are completing regarding the musical education of young blind and visually impaired people.

**Keywords:** Stimulation. Special education. Neuroscience. Disability. Musicografie. Tiflothechnologie.

Since 1992, the issues concerning special education, as well as inclusive education, have been analyzed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in congresses, forums, and colloquia held in different countries throughout the world. From the new millennium, Mexico considered such approaches and the Ministry of Public Education (SEP) integrated them in a transcendental way in the Model of Attention of Special Education Services (2015). Both institutions agree that all students of the same age and integrated into the same school grade, are very different in several aspects, whether from the socio-economic, cultural, religious origin and other aspects belonging to the ethnicities, which imply the diversities of



languages. In other words, genotypes and behaviors, learning needs, as well as their interests, scale of values and forms related to relationships are very different.

Educational inclusion is a concept that responds to this diversity. That is why every educational system must meet the needs of students and not those who must adapt to the pre-established system, a common practice derived from exclusion. UNESCO describes inclusive education as:

A process to take into account and respond to the diverse needs of all students through inclusive practices in learning, cultures and communities, and reducing exclusion in education (United Nations Educational, Scientific and Cultural Organization, 2020).

So we agree that inclusive education should be accessible to all and not just limited to students with special educational needs. Therefore, teachers are obliged to assess the needs of all learners regardless of age, taking into account diversity (each of us is unique and therefore different), and thus achieve greater participation in all social areas. In addition, in this sense it also points out:

Inclusive schools must recognize and respond to the diverse needs of students, taking into account the pace of learning and ensuring the quality of education for all through an appropriate curriculum, resulting in both organizational arrangements, teaching strategies, use of resources and partnerships with their communities (UNESCO, 2020).

Put another way, educational inclusion must begin by accepting differences, recognizing diversity and promoting the equitable treatment of each student. The inclusive process seeks to remove barriers and facilitate learning regardless of physical characteristics, thought, social class, ethnic groups, religion, cultural contexts and language differences in all socio-cultural areas, particularly in disadvantaged or marginal areas.

According to the Manual for the Integration of Persons with Disabilities in Higher Education Institutions, published by the National Association of Universities and Institutions of Higher Education (ANUIES), the expression "persons with disabilities" is usually applied with the aim of referring to conditions that affect sensory abilities and functions in different ways,



intellectual, motor and emotional of people. Therefore, we speak of "people with special needs, whose limitations should not diminish their dignity as human beings or their right to participate in social and work life" (ANUIES, 2011, p. 14). We wish to express our admiration and respect to the teacher and writer, Alicia Molina, pioneer in Mexico on the creation of media linked to information about disability and important promoter of a culture for social inclusion in all social areas. Likewise, together with a group of parents with disabled children, in 1992 they founded the civil association Alternativas de comunicación para necesidades especiales. He has worked intensively in various fields, conducting workshops, radio and television programs, articles and books that enrich the culture of respect for people with disabilities.

Your work: *Everyone means everyone*. Inclusion of children with disabilities in art and culture activities is a reflection related to "the mechanisms by which people with disabilities are usually excluded". It consists of two parts. The first, a significant and remarkable essay concerning the exclusion in which children with disabilities live in the cultural and artistic field and the second is a series of dynamics, devised by Carmina Hernández, with the purpose of raising awareness and facilitating interaction between groups of children with and without disabilities who face, for the first time, to the experience of working, growing and creating together. Its intention is to "open doors", that is, to reflect on the social mechanisms that exclude people with disabilities from social life and to build initiatives to find inclusive strategies. Alicia Molina is convinced that disability should be "everyone's business, because it is linked to the way in which a society is built that accepts differences and so that everyone can recognize themselves" (Molina, 2010, p. 20).

It seems obvious that society at large does not find it difficult to distinguish the difference between a "normal person" and one with a disability. Unfortunately, says Molina, it is we who in many ways build great obstacles present everywhere: the streets, public offices and even social or medical assistance. It is indisputable the convenience of starting from the educational systems at the different levels: basic, basic and higher secondary education. We must develop strategies and tools focused on raising awareness among government authorities and also propose and develop programs aimed at inclusion in all sectors, enabling them a better quality of life.



The World Health Organization (2020), ensures that at least 10% of the population in Mexico has some disability, a percentage that may be higher if we add the "natural deterioration" of the elderly, a situation that will certainly increase as the population pyramid changes. "The simulation of society to pretend that we are all the same," Alicia Molina emphasizes, "is an effort that must be reversed to grow as better people." Molina, p. 17). Inherently, we must understand and modify our behavior around the problem of inclusion, because we must all accept the difference and points out:

Disability is a severely marginalized condition in our culture, it has been stigmatized and segregated so effectively that we have ended up excluding it from many of the experiences we share (Molina, p.12).

On the other hand, it insists on dealing with the subject in universities or schools dedicated to art and in the same way, acquire the commitment to reorient the programs of the curricular mesh. Still many people who, because of their different status, continue to be victims of bad treatment or contempt in all areas of social life.

Since the 60s, a wide variety of social groups have sought to assert themselves in their differences. Among these the hippies and recently the so-called emos and darketos as well as the multiple types of sexual orientations, seek to be recognized and accepted for their differences; despite what has been said, they continue to be rejected and excluded, even in indigenous communities, including marginalized social groups in heavily populated cities. Blind and visually impaired people are also often excluded or belittled in Mexican society.

The World Blind Union (2020), is a global association that currently represents about 253 million people who are blind or have low vision worldwide. They state that "Our members are organizations of and for the blind in 190 countries, as well as international organizations working in the field of visual impairment."

The agency estimates that, for the next twenty years, there will be a community in which the blind and visually impaired possess the strength to participate on an equal basis in whatever aspect of life they choose. Among the many purposes, they consider interceding for human rights,



improving employment opportunities, strengthening the World Braille System Council and thus achieving inclusion in all regular educational programs, among which the participation of creative experiences in music stands out. (WBU, 2020).

It seems very easy to teach music for students with low vision and especially blind people, perhaps, because we suppose an exceptional musical skill, but it is not that simple and presents many difficulties, if, as teachers, we are not properly trained with vocation to do so. Despite the lack of trained educators, countless music figures in history were notable for their skills as composers and performers, called singer-songwriters by the mass media. Among the best known of the twentieth century, we have selected several: José Feliciano (1945), Puerto Rican, blind musician by birth, showed passion for music at age 3 and started with the accordion at age 6. Later he managed to become a guitar virtuoso and singer with a vigorous voice. He has recorded more than 600 songs. The sale of his albums has been estimated towards 50 million copies (Buscabiografías, 2020). Steve Wonder (1950), composer and singer, blind caused by premature birth and did not develop retinas. Since childhood he showed interest in music, started in a church choir and studied, piano, drums and harmonica. "He was a precocious pianist already famous at the age of 10" (Historia-Biografía, 2020).

Ray Charles Robinson (1930-2004), composer, arranger and singer. At an early age he began to suffer from a disease which gradually left him blind. Before losing his sight, he had to stay at home and until he was 15 years old he entered the School of the Deaf and Blind in Florida, located in the city of San Agustín where he undertook musical studies (Historia-Biografía, 2020). The famous tenor, Andrea Bocelli (1958), as a child studied saxophone, piano and flute. With low vision from birth caused by congenital glaucoma, at age 12 he lost his sight as a result of an accident practicing soccer (Bocelli, 2020). Joaquín Rodrigo (1901-1999), best known for the *Concierto de Aranjuez* for guitar and orchestra, at age 3, contracted diphtheria and lost his sight. In an interview he said "[...] circumstance that led me to study music". Rodrigo always used the Braille musicography system, also adopted for blind musicians. With this system he made the dictation note by note to a copyist. Then, assisted by his wife, he continued with the final correction (Rodrigo, 2020).



The Mexican musician Ernesto Hill Olvera (1936), lost his sight at 7 months of age. His parents moved to Guadalajara when he was 3 years old and later enrolled him in the Training Institute for the Blind and Deaf Child, A.C., finishing right there at age 12 and then studying piano. After making his first presentations at the age of 13, he decided to try his luck in Mexico City. He worked for a long time with the Hammond organ and discovered that, gradually opening the bars, it was possible to form vowels, which, with certain movements, managed to "build words", thus achieving an ephemeral fame as Ernesto Hill Olvera and his organ that speaks (Enlace Funk Extra, 2020).

The idea is widespread (wrong, by the way), around the "innate talent" of musicians deprived of sight or low vision, due to greater auditory development. This is not always the case. When they decide to pursue sound art, they must perform strenuous activities to acquire skills in singing and / or instrument. Some of them assisted by friends or relatives and exceptionally few in specialized music education centers. In this regard, Jane Davison (2002), professor at the University of Cambridge, after a series of surveys applied to music students, concludes that the practice channeled to musical perfection (ear education, solfeggio, scales, technical exercises and repertoire), covers many hours of work. According to the research carried out by several teachers, they obtained the following results:

[...] that the best students had accumulated nearly 10,000 hours of formal practice by the age of twenty-one, while the students whose achievements were much lower, had accumulated less than half. In addition, a study [...] revealed that the most outstanding students not only practiced much more than their less successful peers, but that there was a direct correlation between hours of practice and interpretive quality in musical exams (p. 116).

The life stories of each of the aforementioned musicians are very different from each other and most did not attend conservatories or music education institutions focused on the blind and visually impaired. We do not know how they carried out the process of their musical formation. We only have knowledge of his creative talents spread throughout the world. Neuroscience has



studied music in relation to the brain and has reported the fascinating results regarding growth and modifications in different areas, which significantly favors children who begin the study of music from the age of 5.

The research undertaken by psychopedagogy has shown the relevance of early stimulation from gestation, to achieve a greater development of the enormous learning potential of infants. It is to decide, with a series of appropriate stimuli, it is possible to establish more connections between neurons more quickly, easily and effectively. Although the "Mozart Effect" acquired a lot of popularity in the 90s, associated with the subject, the psychologist Víctor Maojo apostilles:

[...] several years ago popular culture was in an uproar with the Mozart Effect, the hypothesis that proposed that simply listening to music by this composer for several minutes a day would increase a child's IQ permanently (2018, p. 82).

Maojo (2018) reveals that, although neuroscience has refuted the existence of such an effect, other studies maintain that the hearing of music provides important physiological benefits in the formation of children, thanks to the relaxing effect to improve insomnia problems, among other aspects and not specifically of IQ.

National Geographic Channel in 2007 aired a documentary series called My Brilliant Brain. Born Genius through satellite television media and subsequently released a series of three chapters with DVD format (2011, v. 1). The company presents Gottfried Schlaug, musician and neurologist, who scanned the brains of dozens of professional musicians in order to identify the existence of changes in the brain, stimulated by a series of complex simultaneous actions present in the interpretation: "read notes, feel them, move your fingers and listen at the same time to what is being played". In this sense, Schlaug assures that the "musical brains" are configured for this work, particularly the cerebellum, which is usually larger than that of normal people. It only occupies ten percent of the volume of the brain mass that houses more nerve cells confined in a small space than in the rest of the brain. The tiny organ works with greater intensity and faster than other parts, coordinating the movements of thousands of muscle fibers in the body. "A



skilled pianist," Observes Gottfried, "can play up to thirty-six notes per second with exquisite timing" (Schlaug, et.al. 2007, p. 75).

Gottfried used magnetic resonance imaging and identified another region with the greatest increase in musicians: it is a corpus callosum, consisting of a strip of tissue in connection with the two hemispheres. For the pianist it is an important organ with a critical mission, as it requires an agile synchronization of movements of both segments of the body: left and right hand. Each side is controlled by half of the brain, so the hemispheres must work in coordination. A larger corpus callosum contains a greater number of nerve fibers, in such a way that it generates other signals, managing to travel from one side to the other with greater speed in communication.

The common thread of the documentary is an exceptional seven-year-old boy named Marc Yu, capable of interpreting more than 40 pieces of music from the European repertoire corresponding to the periods of classical and romanticism. Gottfried, along with psychologist Ellen Winner, tackled studies aimed at locating the central bases of talent prior to musical training. They applied different tests to 50 children when they began learning an instrument. They followed them for several years and evaluated the skills and intelligence recorded in magnetic resonance imaging. After the first year of musical activities, they detected changes in the brains. They identified more active areas responsible for hearing and analysis as opposed to children who did not play instruments (Sandoval, 2015, pp. 29-31).

Schlaug empirically found that the corpus callosum in question grew by 25% (relative to the overall size of the brain) of six children who continued to practice for three years a minimum of two and a half hours a week. These results were achieved after analyzing the brains of 31 children, when they were 6 years old and then at 9. Either way, like all research, they answer questions and others arise: Why are musicians' brains different? Does the brain shape music or does music shape the brain? (Schlaug, et.al. 2007, p. 43).

The revelations lead us to consider without a doubt that music education must be carried out in all educational fields, since it is a substantive part in the integral formation of individuals. Not only for the benefit it brings in the development of cognitive and emotional skills, but for the



transcendental influence on physiological (psychomotor), social and individual aspects as creative beings.

It is therefore very valuable, argue Rogers and Jerome (2010), to use all the didactic resources that contribute to the development of this capacity, since most contacts with the world depend on their perception and interpretation of sound (pp. 12-15). Therefore, music education is of great importance, because with it people with visual impairments will be able to acquire greater auditory experiences which entails the development of musical skills.

Peter Willis and Melanie Peter (2000) state that "it is possible to train even the most severely disabled member of society to participate in creative musical experiences" (p. 9). Both are experienced specialists working in Norfolk, north east England. His proposals can be found in his book translated into Spanish and published by Akal publishing house: *Música para todos*. Development of music in the curriculum of students with special educational needs. Although the proposal is a valuable practical approach for teachers of basic education, for many reasons it has not been possible to adapt it entirely to the curricular mesh formulated for the teaching of technician and bachelor of music. That is why in 2011 we started a research with the desire to know the teaching-learning processes of blind and visually impaired students, motivated by the problems manifested by students with these deprivations who have studied in the Department of Music of the Benemérita University of Guadalajara. Students are admitted to the classrooms; however, we do not offer them appropriate treatment, since teachers lack the minimum sensitivity and training that, incidentally, we should all possess as citizens with the goal of supporting them inside and outside the classroom.

Among the methods and techniques that we have applied during the research, we use participatory observation, a procedure used by ethnography, based on the collection of information, joining the group and thus obtaining it from within carrying out activities with, by and for students and teachers. We have conducted in-depth interviews using the Rapport technique, which allows us to know the needs and problems faced by students. We believe that the way to achieve the permeancia and graduation of the students, it is important to incorporate in the programs of the careers:



- Flexible teaching and learning methods, adapted to different needs and learning styles.
- Teacher training.
- Inclusive curriculum that takes into account different needs.

The important antecedent is to carry out a coherent articulation of the basic education plans that cover preschool, primary and secondary, key factors aimed at the prevention of abandonment in the passage from one level to another. Therefore:

- Avoid overorthodox and content-overloaded curricula and curricula.
- Integrate tflotechnology, that is, the practical use of technological knowledge applied to blind or low vision people.
- Train students in the use of Braille musicography.

Warning: the tradition of music as therapy of people with special needs, is solidly established with the connotations of help and healing (Benenson, 2016), therefore, we emphasize that the primary objective of our research to conclude, is closely related to music in the educational and social context, not from music therapy, paramedical specialty of clinical-therapeutic order. We only take advantage of the valuable contributions made in the area of inclusive education.

The creation of artistic programs and activities considering children and young people deprived of sight and weak vision, has also been studied by sociology (blind people as a social group and their relationship with the State), where, above all, they must be recognized as people with "other capacities" and possibilities of realization and not as a "disabled, deficient or impossible." Proof of this are the artistic groups of the National Organization of the Spanish Blind whose purpose is to promote artistic development, coexistence and integration among the members. The projects are primarily aimed at Music and Theater, achieving a remarkable artistic quality in both disciplines, which has led them to present themselves in important forums in Spain and other countries (ONCE Foundation, 2020). The ONCE Foundation has contributed in an important way by developing resources and techniques (tflotecnologfía) referred to the useful and practical use thinking about people deprived of sight and low vision.



The University of Guadalajara began to design inclusive educational programs aimed at students who have "a disability." Proof of this was the graduation of eleven deaf students from High School 7, generation 2012-2015. Still in Mexico there are few educational centers with specialized systems in Braille musicography. However, we consider it relevant to mention the work carried out by the school Hellen Keller, A.C., thanks to Xochitl Ruvalcaba Rodríguez, specialist in music teaching at the primary and secondary levels. It uses the Braille musicography system, in which notes are alphabet letters with the disposition *d, e, f, g, h, i, j* to link them with *do, re, mi, fa, sol, la, si*. In this way it is possible to generate more than 270 signs corresponding to musical meanings (Ruvalcaba, 2019, p.40). The teacher acquired the master's degree in Education and Expression for the Arts, from the University Center for Architecture, Art and Design. The teacher is not blind and from a very young age she was interested in working with musicography and Braille keyboard.

We still have a lot to work on the design of inclusive curricular meshes integrated by relevant situations and didactic sequences through which infants and adolescents build important learning in which music constitutes an important broad and enriching tool and everyone can listen, recognize and create with sound experiences. The purpose of our research is the development of a didactic guide relevant and appropriate to the didactic process in music teaching campuses, which subsequently allows them to access the teaching field and also facilitate the formation of qualified artistic groups with national and international projection.

## Conclusion

Undoubtedly, music is a personal experience, with different impressions in each of us. Its social function is not limited to fun, but to many others associated with religious rituals, civic and / or military activities, therapy and recently, early stimulation in the process of education aimed at the integral development of all skills. At the same time, it is an art with its own rules that, as such, must be studied in a systematic way and develop skills, whether in the specialty of composition, or interpretation. In other words, it is possible to understand music intellectually through formal study and appreciate it emotionally. While the search for meaning in music is often the subject



of bitter controversy, we undoubtedly experience it as an enriching experience. It is precisely a powerful means of communication that is especially affective – not as a substitute for language – which makes it particularly relevant when working on a wide range of possibilities in the teaching-learning process, considering the inclusion of students with weak vision or deprived of sight (Cervantes and Sandoval, 2015).

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