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Inter and (Trans) Disciplinarily in the Context of Musical Pedagogy

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ABSTRACT
In this paper, we present findings from research on interdisciplinarity and Transdisciplinarity in the context of music education. We begin with a discussion of inter and Transdisciplinarity, its primary approaches, and its connections to holistic epistemology, systemic thinking, and complexity. Later, we'll compare these methods to a handful of names in western musical pedagogy. This study is a direct result of the research conducted with the support of the PR-LICEN programme at the Federal University of Goiás (Brazil), which grew out of an interdisciplinary research proposal titled: *Orderly Principles of Aesthetic Activity: A Proposal* (Souza, 2002). Subsequent to the realisation of these researches, we were still worried about issues regarding dichotomies established between discourse and pedagogical practise. In this regard, we offer a concise explanation of the emerging issues in inter- and transdisciplinary epistemology. It is anticipated that the theoretical and methodological reflections presented here will contribute to the emergence of conscious actions in musical education that aim to be transformative.

Key words: Interdisciplinarity, Transdisciplinarity, musical pedagogies.

Introduction: Interdisciplinarity and Transdisciplinarity

The current civilization is rooted in numerous epistemological ruptures (Litto, 2001). Between the end of the Middle Ages and the beginning of the Renaissance, there was a fundamental split between the subject and the object, as the view of man shifted from a ternary vision of body, soul, and spirit to a binary vision of body and spirit. According to Damásio (1996), the three pillars of conviction that support classical science are order, separability, and logic. According to him, these were the immutable foundations of the universe's order, as Descartes and Newton understood them. The second essential concept was separability; therefore, to understand is to separate. Consequently, the scientific disciplines are derived from the division of the major sciences, including physics, biology, and others. It can be argued that the separation between science and philosophy and, more generally, between humanistic science and culture - philosophy, literature, poetry, and the arts - is a legitimate necessity in the twenty-first century (Mariotti, 2000a).

Although contemporary science has shown that the mechanistic conception of the universe has ceased to be defensible, even from the strictly scientific point of view, contemporary education in its practice generally favors the individualistic and mechanistic conception. The purpose of the interdisciplinary and transdisciplinary proposal is explicitly to integrate the different levels of existence - body, mind and spirit - since the crisis of modernity originates from these ruptures and is nourished by them (Pistóia, 2001).

It is imperative to seek the fundamental laws of life and the valuing of a social, ecological, planetary and spiritual consciousness proper to globalizing anthropology, which Michel Camus (1997) called a recentralization of the human being about his own inner wealth and his reorientation in towards a simplicity of being, more and more alive, conscious and integrated. In this sense, interdisciplinary and transdisciplinary projects and ideals are rooted in the genuine aspiration of constructing a more just and humane society (Oliveira, 2000).

Historical Contextualization and Conceptualization of Inter and Transdisciplinarity

Midway through the 1960s, when student movements demanded a new university status, the interdisciplinary movement emerged in Europe (Oliveira, 2000), primarily France and Italy. This positioning, according to Fazenda (1991), highlighted the capitalist alienation of certain sciences, isolating the academy from commonplace issues and directing the student's gaze in a single, restricted, and limited direction towards a pathology of knowledge, as Japissu (1977) put it.

Gusdorf had presented an interdisciplinary humanities research initiative to UNESCO as early as 1961. Parallel to these UNESCO studies, a 1967 colloquium between theologians, philosophers, and sociologists was conducted at the University of Leuven (Gusdorf, 1967). This congress explains the study of a significant dichotomy: to be and to exist, based on the inter-disciplinary discussion of human subjects and the world. Questions regarding the relationship between theory and practise - verbalization versus action - are still at the core of the debate over interdisciplinarity; i.e., this discussion is infused with such debates.

Fazenda (1991) divides the interdisciplinary movement into three decades: in the 1970s, a philosophical explanation is sought, beginning with the epistemological construction of interdisciplinarity; in the 1980s, one begins with the explanation of the epistemological contradictions arising from this construction, while simultaneously seeking a sociological guideline; and in the 1990s, we will attempt to construct a new epistemology, appropriate to interdisciplinarity. In other words, a definition of interdisciplinarity was sought in the 1970s, an explicit method for interdisciplinarity was attempted in the 1980s, and a theory of interdisciplinarity was constructed in the 1990s. Georges Gusdorf (1967) was among the first to systematise a proposal for interdisciplinary work based on the formation of a group of specialists dedicated to interdisciplinary research in the human sciences; a proposal was submitted to UNESCO in 1961. Although this initiative was unsuccessful, this researcher's

individual contribution marked the effective emergence of the inter-disciplinary proposal. In 1970, the Economic Organisation of Developed Countries (OECD) convened a conference in Nice on the subject. Two years later, the first document presenting an inter-disciplinary systematisation was published. Piaget introduces the term 'transdisciplinary' in this context, stating that interdisciplinary work should provide a higher stage in which disciplinary interactions occur in a space devoid of the disciplinary boundaries present in the interdisciplinary stage.

Pierre Weil (1993), a researcher on the subject of interdisciplinarity, presents a discourse by Jean Piaget on his conception of transdisciplinarity:

> *Finally, at the stage of interdisciplinary relations, one can expect to see a higher stage that will be "transdisciplinary", which will not be satisfied with interactions or reciprocities between specialized sciences, but will place these links within a total system without stable boundaries between disciplines* (Piaget in Weil, 1993:167).

This contribution by Piaget will be evident in the proposal of transdisciplinary works, research, and studies.

From May 25-29, 1998, UNESCO hosts the International Symposium on Transdisciplinarity with the theme Towards an integrative process and integrated knowledge. In his introductory remarks, the Director-General of UNESCO reaffirms that inter- and transdisciplinarity are based not only on their scientific components, but also on cultural and ethical knowledge as a positive response to the excesses of hyper-specialisation. There is a proposition to consider the contributions of education, science, culture, and communication within a single plan of action (UNESCO, 1997). Alternatively, the Congress Science Facing the Limits of Knowledge: the Prologue of Our Cultural Past (UNESCO, 1986) proposes to the organs of orientation and decision the adoption of an interdisciplinary and transdisciplinary position (Mariotti, 2000b). This is in response to the challenges of our time, which include primarily informatics, genetics, and the extinction of our species.

According to Jantsch (in Santomé, 1998:23), we must consider "origin, motivation, and objective" when pursuing interdisciplinarity. At the origin, which refers to all the circumstances that contribute to an interdisciplinary activity; in motivation, which refers to all the intellectual and emotional needs related to the ideology of the actors; and at the destination, as

interdisciplinarity can result in a vast array of disciplines. In this dialogical manner, interdisciplinarity provides a system of confrontation that generates analyses, synthesis, and frequently ruptures. But it is in these ruptures that new syntheses, new knowledge, and new methods can be added, which can reassemble the fragments and reconstruct human relationships, thereby demonstrating the inseparability of education, development, and nature (Weil, 1993).

According to Piaget (1973), transdisciplinarity is attained through successive interdisciplinary activities that can be extended to societies, thereby enabling the interaction of multiple realities. According to Fredric Litto (2001), interdisciplinarity and transdisciplinarity are methods of acquiring knowledge; expanding one's worldview leads to a comprehension of processes. Particularly, transdisciplinarity is a new attitude, a way of being in relation to knowledge. Etymologically, the suffix 'trans' signifies that which is simultaneously between the disciplines, through the various disciplines, and beyond all disciplines, alluding to the concept of transcendence. Transdisciplinarity is the incorporation of a culture; it is an art in the sense of articulation capacity.

Interdisciplinary Approaches

A discipline is a method of organising and defining a work territory and concentrating research and experiences from a particular perspective. Stephen Toulmin states in Santomé (1998:55) that for a discipline to be considered as such, it must meet five criteria. First, their activities must be organised and directed towards a set of agreed-upon, specific and attainable collective ideals. Second, the collective ideals impose certain requirements on all those who dedicate themselves professionally to the activities' accompaniment. Thirdly, the ensuing discussions provide disciplinary opportunities for the elaboration of "reasons" within the context of justified arguments, whose purpose is to demonstrate to what extent procedural innovations satisfy these collective requirements. Fourthly, their activities should be aligned with the professional forums where established procedures are used to "elaborate reasons" in support of the collective adoption of new procedures. And finally, the same collective ideals determine the adequacy criteria by which arguments supporting innovations are evaluated.

According to Santomé (1998), the disciplines are constantly evolving, and distinct levels of interdisciplinarity can be established based on the degree of integration of the various disciplines at a given time. Among the potential modes of interdisciplinarity, authors like Cesare Scurati (in Santomé, 1998:68) establish a taxonomy with six levels, in ascending order of interrelation:

- Heterogeneous interdisciplinarity is founded on the sum of multiple disciplines, transforming it into a form of encyclopedism.
- Pseudo-interdisciplinarity: the union is centred on a'meta-discipline', an extant union structure, a theoretical model, or an applied conceptual framework.
- Auxiliary interdisciplinarity: when a research methodology from a different field of knowledge is utilised.
- Composite interdisciplinarity: we propose the intervention of specialists from multiple disciplines to analyse aspects of any sociohistorical phenomenon in the solution of social problems.
- Work in the same field of study that overlaps between specialties that are complementary to one another.
- There is already an authentic integration of two or more disciplines, resulting from the development of a common theoretical framework and a research methodology (Scurati in Santomé, 1998:27–28).

According to Margaret Schaffer (1995), other interdisciplinarity possibilities include:

- Seeking absolute knowledge that encompasses all others; employing the scientific model method. As an illustration, physics is a paradigm.
- Instrumental: seeking a functional and employing it to attain an objective concentration. Adding sciences, but keeping these secrets to themselves
- It is an administrative continuation of the preceding one. To advance an undertaking, disciplines are added without questioning their underlying assumptions.
- Permanent, transitory, or alternative use of the methods of another. For instance, there is a pedagogy that supports psychology.
- Leader discipline: replicating a curricular unit's underlying principle (didactics in pedagogy)—currently regarded as more scientific. For instance, math is taught in elementary school.

- Interdisciplinarity is the interaction between two or three disciplines to solve a common problem. sociolinguistics and psychoacoustics are examples.
- Converging reconstructions: engineering research for diverse fields
- Vision holistic: a science constructing an experience of unity. Note and distinguish the dimensions of the two opposing forces: physical knowledge and oriental mysticism (Capra, 1982; 1983).
- Language paradigm: a search for the previous language, not as an object, but as a philosophical language.
- History as a unitary and global science that can bring order to the current disorder in the field of knowledge, because there is a place outside of history.
- Communicative Rationale is founded on the paradigm of communication centred on comprehension, in which communicative reason plays a central role.
- The principle of diversity and originality is the principle of originality and diversity. From this perspective, interdisciplinarity must have evolved throughout the history of science and failed to achieve external objectives. Fragmentation is a direct manifestation of man's creativity, so there is no cause for regret.
- Computer communication paradigm: a form of mechanical transdisciplinarity. There is a connection, for instance, between physical computer science and biology. On the premise of research, a transdisciplinary approach that is open to the social and ethical would transform the sciences (Schaffer, 1995:45–50).

Marcel Boisot (in Santomé, 1998) will also present classification methods for interdisciplinary work; however, Edgar Morin (1996) will argue that interdisciplinarity entails substantially more than the integration of disciplines. In a confrontational system that generates assessments, summaries, and frequently the coexistence of opposites, interdisciplinarity offers a dialogical approach (Weil, 1993).

Holism, Systemic and Complex Thoughts

Jantsch (Santomé, 1998) believes that transdisciplinarity requires a coordination of all disciplines in a system of educational innovation, founded on generalised axiomatics introduced from the higher level and oriented through an epistemological structure. For Piaget (in Weil, 1993), transdisciplinarity is accomplished through successive interdisciplinary activities that can make the multiple areas of knowledge interact. To qualify a mathematician with sociological instruments will not make him a mathematical collaborator but will cause the professional to

consider social reality in the application of his numerical data. In the same manner, Sato (2000) believes that transdisciplinarity occurs when constructed knowledge starts to be applied to the reconstruction of societies.

At the foundation of the interdisciplinary conception is the paradigm shift embodied in systemic thinking, holistic thinking, and complex thinking.

During the first half of the twentieth century, several scholars, including many biologists, contributed to the organisation of a new method of thinking: the systemic thinking of Humberto Maturana (Maturana & Verden-Zöller, 1997). According to this perspective, the essential properties of a living organism or system are properties of the whole that none of the elements per se possess. These properties derive from the interactions and relations between the parts and are thus destroyed when the system is physically and theoretically dissected into isolated elements. The properties of the parts are not intrinsic properties and can only be comprehended within the broader context. In the Cartesian paradigm, the relation between the parts and the whole was inverted, and the significant impact of the systemic vision came from the perception that the systems could not be understood through partialization. Systemic thinking is contextual, which is the opposite of analytical thinking that aims at fragmentation.

In addition to systemic thinking, as a postmodern epistemological conception, it coexists with other approaches, among which we have the complex thinking line of Edgar Morin (1986; 1996; 2003). According to Edgar Morin (in Mariotti, 2000b), the term holism encompasses a conception opposed to the Cartesian approach that recovers the notion of the whole and examines the whole without dividing it, that is, in a systemic manner. Systemic thinking is, therefore, an essentially holistic conception, as presented in 1950 by Ludwig von Bertalanffy (in Oliveira, 2000) in his general theory of systems. Morin (in Mariotti, 2000b) argues that we are overshadowed by the reductionist notion of isolated and separate elements of the whole. Indeed, the Western mind is profoundly conditioned to think so. It's what you call linear formatting. However, when we come into contact with the notion of a system, this reductionist dazzle, which sees only the parts, can give way to a holistic wonder, which sees only the whole. We leap from one pole to the next. Thus, according to Morin, the way out of this impasse would lay not in the use of one or another theoretical model but in a revolution of the way of thinking, or, in other words, in the development of complex thinking.

Consequently, biological systems are viewed as integrated entities whose properties cannot be broken down into smaller parts. Its essential or systemic properties are characteristics of the whole that none of its constituent parts possess. They result from the organisational relations between the components, i.e., a configuration of ordered relations that is characteristic of the organism or system class (Pistoia, 2001).

In addition to systemic thinking, it coexists with other approaches as a postmodern epistemological concept, including the complex thinking line of Edgar Morin (1986; 1996; 2003). According to Edgar Morin (quoted in Mariotti, 2000b), the term holism refers to an anti-Cartesian conception that recovers the notion of the whole and examines it without dividing it, i.e., in a systematic manner.

As presented by Ludwig von Bertalanffy in his 1950 general theory of systems (as cited in Oliveira, 2000), systemic thinking is, therefore, essentially a holistic perspective. Morin contends that we are overshadowed by the reductionist notion of isolated and separate parts of the whole (in Mariotti, 2000b). Indeed, the Western mind is profoundly programmed to believe so. This is known as linear formatting. When we encounter the concept of a system, however, this reductionist awe, which sees only the components, can be replaced by a holistic awe, which sees only the whole. We leap from one pole to the following. Thus, according to Morin, the only way out of this impasse is a revolution in the way of thinking, or in other words, the development of complex thought.

According to Morin (as cited in Mariotti, 2000), complexity cannot be comprehended as a theoretical concept, but rather as a reality. In lines of Morin:

> *Everything is connected to everything. The natural world is made up of opposites at once antagonistic and complementary. (...) We live in systemic and dynamic feedback circles, not in static lines of immediate cause and effect. Therefore, we have responsibility in all that we influence. Feedback can come quite far from the initial action, in terms of time and space. (...) A part can only be defined as such in relation to a whole. You can never do an isolated thing. There are no single-cause phenomena in the natural world* (Mariotti, 2000b:25).

On the other hand, according to Edgar Morin (quoted in Mariotti, 2000b), what we consider rational is the consequence of our perceptions. They manifest initially as sensations and emotions. Then they become ideas, which produce discourses, which are eventually formalised into concepts. The visceral precedes the rational, not vice versa. This does not mean we should abandon our rationality. It simply means that we must learn to balance logic and emotion, mechanical and systemic thought. This scope enables the development of knowledge and practises that enable us to explore new ways of comprehending and coping with the complexity of natural systems, which includes humans and their cultures (Barguil, 2000).

Music Education and Inter (Trans) Disciplinarity

According to Santomé (1998), the 20th century was dominated by technological advancement, communications and the market; the world has become globalised. At the social level, there is a strong tendency towards massification, with the loss of local cultural identities as one of its consequences. Increasingly, modern man must surmount barriers imposed by globalisation, which has both positive and negative effects. In spite of this, the view of man is fragmented: on the one hand, tortured bodies and minds that strive to survive, and on the other, souls that yearn for more humane forms of existence.

What role does music play in this society?

In this sense, we concur with Goulart (1999) that the function of music is to aid in the recreation of human, aesthetic, ethical, and social dimensions, seeking a critical view of the system and not just a simple repetition of it, of emotion, pleasure, joy, and hope, from which man should never have disassociated himself.

In the early decades of the 20th century, new pedagogical currents emerge, which manifest similarly in instrumental education. Dalcroze, Orff, and Kodály, three musicians and educators of this period, establish contemporary music education's foundations through innovative pedagogical practices. In accordance with the vision of Murray Schafer, Koellreutter, and Hemsy de Gainza, musical education continues to undergo reforms of thought even today.

We believe that these musical educators work with potentially interdisciplinary approaches, pondering significant questions related to social, scientific, philosophical, and pedagogical changes resulting from the new forms of social organisation that are in a constant state of

evolution. These educators consider the student's formation in the objective and subjective spheres, taking into account aspects of a holistic human formation.

As a teacher at the Conservatory of Music in Geneva, the renowned composer Emile Jaques-Dalcroze discovered that his students could not hear (by internal or mental listening) the music they saw written in the score, and that they performed what they read in an unmusical manner. These observations led Dalcroze to conclude that the students lacked the coordination between their eyes, ears, mind, and body required to acquire the repertoire and, as a result, to perform more musically. Thus, he realised that the body was the first musical instrument to be educated. The year was 1887.

As early as the middle of the twentieth century, a number of subsequent studies confirmed the viability of these concepts. As with kinesthesia (from kinesis = movement and thesia = consciousness), it functions as an element that heightens awareness of the body's and sound's movements.

Also, a Dalcroze concept, eurhythmics literally translates to 'good rhythm' (from eu = good and rhythm = flow, river, or movement). Dalcroze's eurhythmy examines the musical elements based on three fundamental assumptions. First, every musical sound begins with a movement, and the body generates the gestures that produce noises. It is the first instrument that is trained. There is a gesture corresponding to each sound and a tone corresponding to each gesture. Movement can be used to study each of the musical elements, including accentuation, phrasing, dynamics, pulse, tempo, and metre.

According to an analysis by Goulart (1999), the eurythmy movements are either improvised by the pupils or proposed by the teacher. Eurythmy is a method for attaining complete musicality and not a type of dance that can be taught. Show me what you're listening to rather than tell me what you're hearing is a frequent request made by a teacher who employs the Dalcroze method. This wordless universe must be investigated in class as music is a non-verbal art form. The physical activity is strenuous, and there is a great deal of movement while listening to the instructor's (originally improvised) piano music. Participating in these games and rhythmic games allows students to implement the concepts they learn in their classes and performances. Use the demonstration instead of the oral description whenever possible.

According to Goulart (1999) and Penna (1990), both Kodály and Orff were exposed to and influenced by Dalcroze's ideas. The association of manual gestures with the height of the notes (manossolfa), linking a sound to a bodily movement, is a possible indication of Dalcroze's influence on Kodály, and Orff identifies with musicalization strategies such as learning through the creative activity of elementary music (singing, speech, movement, rhythm, dance).

Kodály (1966) believed that music was intended to cultivate a man's intellect, emotions, and entire personality. This is an interdisciplinary mindset shared by the three contemporary musical educators. Dalcroze attempted to integrate corporal movement into the musical experience and performance in order to make it more expressive; Kodály sought to musically alphabetize the entire Hungarian population and to rescue (or valorize) the country's folk song; and Orff sought to sensitise all children to music (improvisation, creation, and hearing), demonstrating a path to knowledge and pleasure through personal musical experience.

This demonstrates that music education has distinct connections with the cognitive, cultural, rational, and emotional spheres of the human mind. This prompts us to believe that this holistic training approach is comparable to interdisciplinarity research. In addition to Dalcroze and Kodály, Orff was another great musical educator who strove to establish more dynamic connections between students and music.

As stated earlier, the tendency to an interdisciplinary view, present in the Dalcroze method, also manifested itself in Carl Orff’s educational proposal. Born in Munich in 1895, Orff, at school, was keenly interested in classical languages, poetry and literature, and it would be this interest, associated with Dalcroze’s ideas, that would open the horizons of musical education to encompass verbal language elements, as well as movement and dance. In 1923 he met Dorothee Gunther, and from the conversations with her came the idea of founding a school in which to train elementary music - music that is not abstract but an integration of the elements of spoken language, rhythm, movement, song and dance. At the center of everything is improvisation - the instinct that children have to create their own melodies, to explore their imagination. It is a song in which all are participants, not just listeners.

According to Goulart, (1999) Orff’s work is based on children’s play activities: singing, saying rhymes, clapping, dancing and striking at any object at hand. These instincts are directed toward learning, making music, and only then starting to read and write, just as we learn our language. Orff’s search believed that understanding must come after experience - this yes, the basis of the process.

The poems, rhymes, proverbs, games, ostinato, songs and dances used as examples and as basic material can be traditional, folkloric or original creations. Spoken or sung, the activities can be accompanied by palms, beatings with the feet, drumsticks and bells. There are special instruments for the Orff method, which are wood xylophones and metallophones that offer as attractive the ease of controlling the available notes and the immediate production of sound.

As in Dalcroze and Kodály, Orff's proposal is intended for all children, not seeking the privileged talents. There is a place for each child, and each one contributes according to their ability. Many of his students had no previous musical knowledge - so he emphasized the use of sounds and body gestures to express rhythm, and the voice as the first and most natural of instruments.

Also important were the drums, across their wide range of sizes, shapes and sounds. He used a lot of ostinatos (a rhythmic pattern, spoken or sung, which repeats itself) as an element that gave shape to improvisations.

In the Orff methodology, improvisation is introduced in the early stages, in an oriented and controlled way - the means are limited, and the students creatively manage, within several proposals, elements that have already been worked on. Creation represents a pleasurable musical experience that should continue throughout life.

From Dalcroze, Orff and Kodály, a perspective for musical education is inaugurated, in which doing, feeling and thinking can find their balance in a complete form of expression.

In this new worldview are the most recent works by Murray Schafer, Koellreutter and Hemsy of Gainza. According to Parejo (2003), these new pedagogies no doubt embody the new human paradigms for the 21st century. Understand and evaluate what this new paradigm represents, not only as a scientific and philosophical background for the development of the postmodern society in which we live, but also as a set of perspectives that effectively act on our daily life, permeating our forms of see the world, will little by little transform our attitudes, our ways of thinking and helping us to achieve balance in all our relations.

The work done by Murray Schafer (1991), is based on reflections made from the practice of teaching music in decades of experiences. It can be said that the search for renewal of the curriculum, for new approaches in didactic-pedagogical relations and interdisciplinarity, are milestones that focus on their ideals. According to him the main goal of his work has been to make creative music (Schafer, 1991). According to Murray Schafer (1991):

> *I firmly believe that the collapse of specializations and the growth of interest in interdisciplinary undertakings should not go unnoticed by anyone engaged in any kind of musical education. During the century. XX the arts have been shown susceptible to fusion and interaction. Dalcroze was certainly far ahead of his time when, around 1900, he developed his eurhythmy, by which training in the temporal art of music was drawn into synergy with the activity of the body's motion in space* (p.305).

Schafer has developed a vocation as a music educator in the pursuit of new teaching references, new aesthetic standards, and new musical conceptualizations, in which he systemsatizes new relationships between teacher and student and between students and musical knowledge. Constantly in quest of new creative actions, he attempted to incorporate musical and sonic creation into the context and requirements of students.

This is extremely peculiar and consistent with Koellreutter's interdisciplinary teaching philosophy. Koellreutter addresses interdisciplinarity and holism with conviction. According to him, the prefigurative nature of music education necessitates the constant recycling of knowledge and techniques, particularly in light of the rapid transformation of knowledge and techniques that characterised the twentieth century. His own words:

> *The technological world created its own means of expression, these came entirely from its material and mental world. The point now is to conquer it and put it under the control of the artistic spirit. With this development, art and science will interpenetrate in a profitable way. In a planetary culture science will take center stage in every sphere of life, even more so than in the present. I am sure that in this reorientation some human values that have long been suppressed or removed from conscious control will be rediscovered, recognized and valued as new, re-determining our culture* (Koellreutter in Brito, 2001:39).

It asserts that a greater degree of humanity can be acquired at the current stage of development, and that each of us must be prepared to assimilate the values of other cultures and to cultivate, for the sake of unity, those aspects of our personality that are essential to the whole.

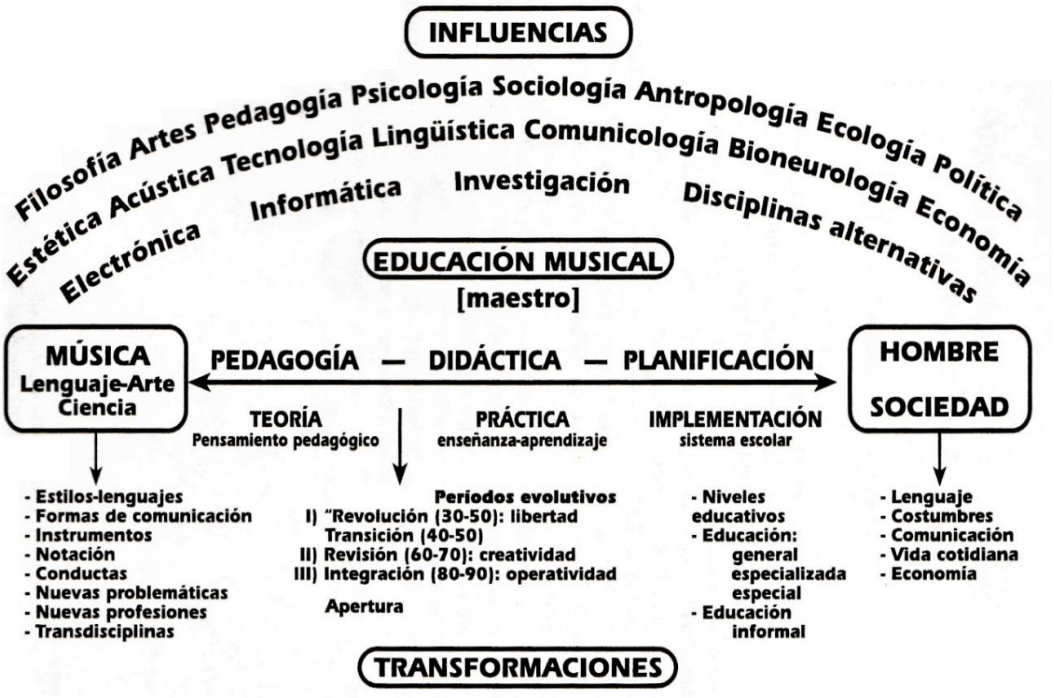
In his methodology, Koellreutter identifies himself with Edgar Morin; in his book, the Method, he argues that the methodology can only be developed during the investigation (Morin, 1996:21). According to Brito (2001), since the turn of the century XX Koellreutter has emphasised the need for a personalised, creative, and student-centered teaching style. On the other hand, according to her, throughout her life, Professor Koellreutter, through the expansion and enrichment of his personal experience, has re-conceptualized the role of music in

education more broadly, imbuing it with functions that transcend the boundaries of musical formation.

Hemsy de Gainza (2002; 2013) is most likely the musical educator who has inspired and revolutionised music education around the globe the most. His inter- and transdisciplinary predilection is evident in his more than 40 scholarly and scientific publications. Particularly for the breadth of its psycho-pedagogical and music therapy approaches considered in relation to music education processes. In the context of his musical pedagogy, Hemsy de Gainza (2002) will discuss, among other things, the origin and development of the child's internal musical world and the significance of aural development in the process of musical initiation. In the teaching-learning process, the author constructs a strategy that takes into account a variety of internal and external student relationships.

The author illustrates in Figure 1 (Hemsy de Gainza, 2002:88) the inherent complexity of the teaching-learning process in music. From the author's presentation of these elements, it is possible to deduce that her conception of musical education must necessarily pass through inter- and transdisciplinary relationships that strive for a holistic education.

Figure 01 - Complexity of the musical teaching-learning process
(Hemsy de Gainza, 2002:137)



Final considerations

Analysing the various methods of existing musical pedagogy reveals a significant fragmentation of the student and of the teaching and learning processes. A musical pedagogy centred on interdisciplinarity, on the other hand, provides space for the valorization of the emotional and relational dimensions, for the imaginative, the creative, the unusual, and the experimental; an opening for the music of all the peoples of the world; as well as to the popular and classical Western traditions; access to all through the concept of elementary music, that is, a form of musical expression that seeks to manifest the natural artistic sensibilities of children. In this regard, it is illustrative of the evolution of practises of integration between various forms of artistic expression: music and dance, dance and theatre, theatre and music, dance and literature, literature and music, music and painting, painting and sculpture, or among others.

Dalcroze, Orff, Kodály, Murray Schafer, Koellreutter, and Hemsy de Gainza's objective was and is to introduce everyone to music, not only for learning but also for musical creation. A musical style that is accessible to all. In addition to a strong introduction, encourage the learner to immerse themselves in the material and to integrate into their experience the normally disconnected aspects of musical art. In this way, by recognising the inter-disciplinary potential of these methodologies, we usher in a new era of musical education in which doing, feeling, and thinking can coexist in a balanced manner. A pedagogy that incorporates the new human paradigms of the twenty-first century. Similarly, systemic thinking in music education views organisms, social systems, and ecosystems as interconnected entities. This new conception is centred on the concept of networking, a complex matrix of interdependent relationships in which life, the cosmos, and people are understood in terms of their interconnections.

This ideology has as one of its extensions the human being in all of its physiological, emotional, intellectual, and social dimensions. Therefore, the emphasis transfers from discipline and technology to the individual. Specifically, this is the purpose of our discussion, which is related to inter-disciplinary musical pedagogy, which, due to its inherent characteristics, is perfectly aligned with the new systemic concept of musical education. A holistic, complex, and integrative perspective of the student and the content, with the accessibility of the valuation of the integration between various artistic manifestations, or between several of them.

Conclusion: interdisciplinary musical pedagogy aligns with the new human and educational paradigm for the 21st century.

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Short Bio

Eliton Perpetuo Rosa Pereira holds a doctorate in education from Santiago de Compostela University in Spain. She holds a Master of Music (EMAC-UFG) and a Specialist in Educational Technologies (PUC-RJ). Eliton holds a music degree (EMAC-UFG). She is a licenced musician with expertise in music education, choral singing, scientific methodology, and teacher formation at IFG/Brazil's Campus Goiania.

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Διαθεματικότητα και Διεπιστημονικότητα στο πλαίσιο της Μουσικής Παιδαγωγικής

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ΠΕΡΙΛΗΨΗ
Στη συγκεκριμένη εργασία, παρουσιάζουμε ερευνητικά ευρήματα για τη διεπιστημονικότητα και τη διεπιστημονικότητα στο πλαίσιο της μουσικής εκπαίδευσης. Παράμετροι της συζήτησης για τα συγκεκριμένα ζητήματα αποτελούν η συστημική σκέψη, η πολυσυνθετότητα και η ολιστική προσέγγιση. Στη συνέχεια, θα προβούμε σε συγκριτική μελέτη της προσέγγισης αυτής σημαντικών μουσικοπαιδαγωγικών συστημάτων της δυτικής μουσικής παιδαγωγικής. Αυτή η μελέτη θεωρείται άμεσα συνδεδεμένη με την έρευνα που διεξήχθη κατόπιν της υποστήριξης του προγράμματος PR-LICEN στο Ομοσπονδιακό Πανεπιστήμιο του Goiás (Βραζιλία), η οποία προέκυψε μετά από διεπιστημονική ερευνητική πρόταση με τίτλο: Orderly Principles of Aesthetic Activity: A Proposal (Souza, 2002). Παρόλο που έχουν ολοκληρωθεί αρκετές σημαντικές έρευνες για το συγκεκριμένο πεδίο, εξακολουθούμε να ανησυχούμε για ζητήματα σχετικά με τις διχοτομίες που προκαλούνται μεταξύ της θεωρητικής και της πρακτικής παιδαγωγικής προσέγγισης. Από αυτή την άποψη, προσφέρουμε μια συνοπτική εξήγηση των αναδυόμενων ζητημάτων στη διεπιστημονική και διεπιστημονική επιστημολογία. Αναμένεται ότι οι θεωρητικοί και μεθοδολογικοί προβληματισμοί που παρουσιάζονται στο συγκεκριμένο άρθρο, θα συμβάλουν στην ανάδυση συνειδητών πρακτικών για τη μουσική εκπαίδευση στοχεύοντας στο να είναι μετασχηματιστικές.
Λέξεις κλειδιά: Διαθεματικότητα, Διεπιστημονικότητα, Μουσικές Πρακτικές