

LEARNING BASED ON INTERDISCIPLINARITY WITH MUSIC

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ABSTRACT

The isolation of human art is a manifestation of the inconsistency of our society. In scientific research, the spiritual and physical worlds are often separated. To recover this dualism in the education system, but also in the life of human society, arts must have an organic place. That is because the expression of the human inner world we find only in a work of art, which naturally connects human life with the environment - the external world in which he lives / creates. The formative effects of arts integration and building connections between arts and sciences require a deep understanding of the learning content, an increased interest in knowledge, and active participation in processes of exploring and asserting students' talent, individuality, and personal expressiveness. Arts can be involved in the interdisciplinary learning process and cause significant experiences in the development of the personality, if several functions are taken into account (as principles): the integrative function in the total participation of the individual, true contexts for artistic knowledge, capitalization of interior reflective experiences, the spiritual dimension of learning, etc. Extending the learning process beyond the field of artistic-aesthetic education to an extra-aesthetic education can ensure the formation of key and transdisciplinary skills. Learning based on interdisciplinarity with arts can be developed within STEAM projects. The article characterizes the particular features of STEAM education, identifies the factors that condition learning through STEAM projects, describes the process of carrying out a STEAM Project, including examples and suggestions for developing a STEAM lesson.

Keywords: Music education, arts integration, integrated learning, STEAM education, integrative functions of the arts, total participation of the individual in communication with art, the spiritual dimension of learning through arts, learning through STEAM projects

INTRODUCTION

The interdisciplinary approach to music education (Cslovjecsek, Zulauf, 2018: 125) aligns students' natural tendencies to give meaning to their experience and to integrate what they know into a model of action or a

"big picture" of the world. The strong influence of music on life is seen more holistically when students can discover the coherence of the arts with other aspects of their school experience. Acquiring knowledge and skills that are not connected with life makes no sense. The integration of knowledge becomes an important aspect of education, which should not simply be left to the student or at random. It all starts with the premise that school learning should be useful in dealing with real-world challenges, complex problems. The school is an institution that should help students to become informed and creative human beings who think autonomously and act responsibly. As researchers from Harvard University (Boix Mansilla, Jackson, 2011: 16) state, interdisciplinary studies provide the ability to integrate knowledge and thinking from two or more disciplines to produce cognitive progress. According to the integral theory, human development is based on the relationship with values, culture and worldviews. The inclusion of several interdisciplinary subjects in the learning process can increase and deepen the aesthetic and artistic experience, because an object or a phenomenon is treated through multiple approaches. This widens and extends the range of perception and, in many cases, prolongs the duration of the action. Objects or phenomena that students may initially find unattractive can be made more interesting by adding the perspectives of another subject; this often opens up unsuspected paths to what was previously inaccessible. The knowledge base and skills required for meaning assignment can be significantly broadened by drawing on several topics; the same is true for personal means of expression. Negotiating the assignment of meanings across disciplinary boundaries within the school also provides the necessary basis for long-term dialogue between subjects and disciplines.

The concept of curricular integration, according to L. Ciolan (Ciolan, 2008: 86-89), is understood as a process of establishing convergence relations at the level of content elements, objectives or methods, but also at the level of concepts or values belonging to different school disciplines. Thus, we can distinguish:

- Horizontal integration: brings together in a coherent whole two or more objects of study belonging to different fields or curricular areas; for example: Music Education and History, Fine Arts and Literature.
- Vertical integration: brings together in a coherent whole two or more study objects belonging to the same field or curricular area;

- for example: Music Education and Fine Arts Education;
- Transversal integration: involves focusing on a topic or problem that does not come from existing disciplines, has a certain autonomy in relation to them, but can engage them in certain segments in establishing aspects of the topic in question.

British academician Keith Swanwick puts forward some key ideas in the learning process: "Music is a form of symbolic discourse. At its heart is the process of metaphor that takes place in three ways: tones are transformed into "songs" or gestures; gestures evolve into new structures / forms; these structures can give rise to meaningful experiences in connection with our personal and cultural histories". These three metaphorical transformations are audible through the layers of observable musical elements that give rise to *ideas* (meanings), *expression*, *form* and *value*. Due to its metaphorical nature, the arts generate cultural reflexivity and can be represented / interpreted / produced exclusively in a creative way. Hence come three essential principles for the learning process (Swanwick, 2011: 105-106): (1) care for music as a discourse (in the act of reception), (2) care for students' musical discourse (in the act of interpretation), (3) care for musical inspiration (in the act of creation). In the same logic, an education dedicated to musical experience will bring together all four layers of musical discourse.

Interdisciplinary learning with the arts enhances the experience of creating the meaning. The results of arts-based training have proven to increase flexibility and thinking skills at a higher level. The arts are unique in education because they support a certain analytical area of knowledge and can also be applied as processes of sensitive, intuitive-intellectual investigation (Goldberg, 2006). Learning the arts is a pedagogy connected with reflexivity and praxis throughout the process and its results. Learning through arts creates powerful environments for deep emotional expression and experience, which require penetrating levels of thinking, perception and involvement - essential elements in a complete education and life (Mello, 2004).

The learning process must act as a "restorative of sensory reactivation through the expression of art and music" - a matter of sustainability for all humanity. Thus, namely the complex involvement of the individual's resources, they build the quality of a "facilitating relationship" (the conception of professor C. Cucoş) in the reconfiguration of the learning

process. A truly integrated curriculum is designed to highlight the links between aspects of knowledge, while an interdisciplinary curriculum is configured to highlight the separate, distinctive nature of the various disciplinary areas of academic knowledge. Intending and planning integrative approaches to the arts in the curriculum requires teachers and all categories of curriculum designers to understand, identify and highlight the following: (a) The organization and the internal structure of the problem space around which the contents of school learning are proposed for integration. (b) The universal aspects, common to knowledge in various educational disciplines. (c) The opportunities for the application of knowledge and skills in different contexts of practice. (d) Highlighting the differences and specific aspects of knowledge in distinct disciplinary areas. In conclusion, the formative effects of integrating the arts and building connections between the arts and sciences require a deep understanding of learning content, increased interest in knowledge and an active participation in the processes of exploring and asserting students' talent, individuality and personal expressiveness, as well as the sense of self-efficacy.

THE INTEGRATIVE FUNCTIONS OF THE ARTS IN THE LEARNING PROCESS

The learning process in the subjects of the Arts curricular area is essentially *the education through the arts*, which is based on the student's experiences in living the art. Raising students' awareness by triggering emotion, experiencing the artistic message, can contribute, in appropriate conditions, to the efficient realization of the learning process. Thus, the teacher will guide the behavioral and sensitive sphere in such a way that they contribute to the process of knowledge, research, discovery, valorization, etc. It is noteworthy that the cognitive sphere in the artistic-didactic act is based on the data of all the sensations involved in the perception by the student (visual, auditory, tactile, etc.) and is not limited only to the participation of reason. For example, in the listening activity of a musical composition, learning can result from the convergence of sensations (auditory, but also visual, tactile, motor, etc.), feeling and thinking. The information taught becomes knowledge as it explains an artistic fact and is put into practical application. Through the

convergent involvement of the personality spheres in the artistic-didactic act, the artistic culture of the students is built.

Researcher Dagmar Widorsk (2018: 195) says that successful learning in art lessons is achieved when the student is emotionally involved and begins to think. This is usually triggered by active, meaningful and relevant experiences based on topics that are important for the inner life. We advance the concept of total participation of the individual in communication with art, considering the involvement of all spheres of personality in the artistic act:

- the emotional sphere through the emotional-artistic receptivity to the sound-artistic message;
- the behavioral sphere through the skills of listening to musical works, activity similar to reading literary works and receiving works of fine art;
- the sensitive sphere through the abilities to observe (perceive) and analyze certain elements of artistic language;
- the cognitive sphere through the ability to think and create / re-create the artistic image;
- the value sphere by familiarizing and memorizing the musical repertoire / works of art.

At different ages, in the learning process, these spheres correlate, condition each other, but interact differently. The numbering of the personality spheres, presents the sequence in which the involvement of the personality in the artistic-didactic act evolves. The qualities of an artistic act are transposed to the didactic act, being explored successively and integrated, in relation to art, the initiated artistic activity. The more advanced the artistic experience of the personality, the more stable are the connections between the spheres of personality in the artistic-didactic act. At the beginning of each learning process, the context in which the students respond emotionally to the work of art is established. Emotional receptivity to the work of art is considered a constituent element, fundamental to art. Therefore, until students are emotionally connected to the work of art, any information / knowledge about it loses its value. At the same time, we mention five main activities of the human being: physical, vital, mental, psychic and spiritual - recognized as being fundamentally holistic. Being interrelated, they require individual and collective cultivation. The total participation of the

individual in communication with art is a comprehensive approach of the whole person. Thus, the holistic character of the learning process in the disciplines of the of Arts' curricular area requires the interrelation of the main activities of the human finite: physical, vital, mental, psychic and spiritual. The holistic character in the student's approach requires the construction of connections between personality spheres in the learning process: emotional, behavioral, sensitive, cognitive, value. The holistic goal of learning is the more complete development of human abilities in all spheres of life. In defining holistic education, we identify the priority of the spiritual through the eternal character over the material. The personality of the educable is above all a soul that has its own goal and objectives that contribute to this fact. The Holistic education consists in the ability to respond to the various learning styles and evolutionary needs of the human being.

Teachers can develop various ways of learning through projects, capitalizing on the spheres of manifestation of personality in the artistic act. In current pedagogical research, the holistic vision is approached as follows: the interaction and mutual interdependence of the component elements of a whole, interconnection of the elements of a whole; state of the inseparability of a whole; methodological thesis to study the behavior of a complex system, as opposed to the atomism, which divides things in order to know them better, etc. In this context, learning through arts will operate different spheres of the student's personality (emotional, behavioral, sensitive, cognitive, value) to produce knowledge through different ways of correlating, integrating, connecting them. This is a holistic approach to the individual in the learning process. Teachers are often obsessed with the method of characterizing the music they listen to or perform. In the list of expectations of the traditional teacher we attest requirements regarding the description of the expressiveness of the language, the decoding of the image, the use of a specific terminology, the use of definitions, etc. It is in this situation where a difficulty is attested- the teachers try to get the children to talk about the work of art without referring to the inner reflective experience. In order to capitalize on the integrative function of inner reflective experiences, it is necessary to familiarize students with their inner worlds and the outer world. In the lessons of music education, plastic education and literature, by reliving the meanings of the work of art, favorable con-

texts are created for meditation, reflection in relation to the scale of personal, social, universal values.

In today's global economic climate, there are a growing number of students who seem to be disappointed with life. It is remarkable in this sense, the statement of Professor C. Cucoş , regarding the connection between education and arts, which also aims at the learning process: "education is a collaborative, interactive activity, of relating to each other, of developing an inter-individual empathy; in the educational process, we "extend" beyond our own self, we transfer to the other a personal experience of a practical, reflective or emotional nature that deserves to be spread". The integrative function through the spiritual dimension of learning is manifested in various learning activities, such as: (1) promoting a sense of connection to develop tolerance, empathy and compassion; (2) capitalizing on a common story; (3) creating ways to help in the search for wisdom, meaning and purpose; (4) offering experiences of amazement and discovery; (5) encouraging increased awareness of moments of joy and delight; (6) discovering the ways of fulfillment in the activities of artistic creation; (7) exploring learning through the arts; (8) identifying the magic moments of works of art, in everyday life; (9) awareness and acceptance of the transcendental dimension in everyday life.

In order to approach the integrated learning of the arts with other fields of knowledge, it is important to capitalize on the connection between spirituality and music, which can be seen in three distinct ways: (1) first, to provide students with a musical experience meet, in an atmosphere where they are not necessarily asked to do anything with her or about her; (2) secondly, it could be said that a necessary component of inner reflexivity is a positive self-identity, based on a recognition of self-worth; (3) thirdly, in the process of learning works of art, time and space are provided for reflection and to enhance self-identity and self-worth. Critical positioning in the processes of knowledge and learning, reflective processes and actions make students listen, share, capitalize on what others say, have the courage to take on new ways of seeking meaning. An absolutely essential consideration for the realization of the learning process is the role of the teacher. It is obvious that in order for a person to be able to help students acquire a spiritual element in their life, that person must understand what spirituality is to them. After Anthony

J. Palmer, teachers not only need to be able to recognize the presence of spirituality in their own lives, but they also need to take that into their professional lives. Through the spiritual dimension any teacher could construct another "plan of existence" to overcome the egocentric mental framework. In this context, Palmer A.J. indicates four main areas that contribute to this (Palmer, 2006: 150): (1) self-development; (2) a new vision of the student and the educational process; (3) curriculum development, to include the spiritual dimensions of existence; (4) research in the field of spirituality in education.

The integration of the artist in the learning process, according to C. Cuoş , aims at reporting to (Cuoş , 2016: 8): 1) the referential level of teaching - art, under its different aspects, but also to 2) the level of the way of doing education for receiving art through different didactic strategies. At the referential level of teaching / learning - art, it is about a constitutive, procedural interference, established at artistic level, through the following dimensions:

- The historical dimension: this way of organizing supposes the simultaneous bringing to the knowledge of the receivers of some artistic achievements from various arts (architecture, sculpture, music, literature, etc.) following the historical, evolutionary axis;
- The thematic dimension: this option involves the delimitation of major themes around which representative works can be brought for illustration and discussion in relation to the invoked theme, for example, "Representation of nature in the arts of the nineteenth century", "Domestic life evoked in art "Renaissance", "The Reason for Love in Art", "Illustrations and Biblical Themes in Art", etc.;
- The technical-expressive dimension: under the brand of this pole will be themed formal innovations of trans-artistic character that can be captured in different artistic objects, even if they are apparently distant, in terms of languages used (fidelity or distancing from reality, ambiguity and dissonance, balancing construction or interpretation tasks to receivers, etc.);
- The inter-determination and connection of artistic manifestations with other levels of socio-cultural praxis on alignments such as art and religion, art and social action, art and trade, art and industry, art and suffering, etc.
- The correlation of art with savoir or the great paradigms of

knowledge; from this point of view, one can discuss works that, in terms of content, are consonant with the great ideas of the era (scientific, philosophical). The work of art does not replace knowledge, it is not a faithful "mirror" of it, but it can go hand in hand with it or anticipate it;

- The junction of art with utility under the spectrum of approaches such as environmental design, clothing, industrial, social, etc.; artistic hypostases that involve different degrees and dimensions of correlations, possibilities and limits of these approaches, happy or avoidable cases, etc. can be brought into discussion;
- The illustrative potential of art in relation to the collective mind and social physiology; From this perspective, art can become relevant as a product, social order or servant of the social, including the political power established at a given time (positive or negative) that can encourage, instrumentalize or divert the specific purposes of art (art in totalitarianism, in open, liberal society, etc.).

Arts can be involved in the process of interdisciplinary learning and cause significant experiences in personality development, if several functions are taken into account (as principles):

- The intergender function in the total participation of the individual,
- The integrative function through artistic knowledge,
- The integrative function through social insertion while maintaining the individuality,
- The integrative function of inner reflective experiences,
- The integrative function through the spiritual dimension of learning,
- The integrative function through differentiated approach to learning.

The integration of arts involves the identification, exploration and pedagogical capitalization of overlaps, continuity, discontinuities and contradictions between the contents and processes of disciplinary knowledge, translated into new teaching formulas, in which the emphasis is on the simultaneous, concerted stimulation of training resources distributed in multiple plans (individual / collective / personal / contextual, etc.) and the multiple dimensions of the space of educational

action (curricular / extracurricular, intellectual / aesthetic / professional / technological / affective, etc.). In a postmodern way, the integrative approach of the curriculum is a way to achieve the teaching of artistic education in the character of the land unit of the relationship *arts – sciences* regarding the social, political, cultural aspects of life.

INTEGRATING THE ARTS IN THE LEARNING PROCESS THROUGH STEAM PROJECTS

STEAM is an educational approach that uses Science, Technology, Engineering, Arts and Mathematics as access points for integrated learning guidance, based on specific principles, which encourages the student to investigate experiment, solve problems, be creative and create products, to find solutions to some of the challenges we face around the world. STEAM education does not involve a part of education, but refers to an overall paradigm from vocational learning to lifelong learning, which is organized with the addition of art to existing education. Specific features of STEAM education: (a) learning approach from an early age and the use of science, technology, engineering, arts and math as access points to guide student questioning, dialogue and critical thinking, (b) promising approach to positively influence student outcomes and teachers' effectiveness, (c) intentionally includes teaching and learning integrated topics, (d) stimulates investigation, collaboration and shifts the focus to process-based learning, (e) has a positive impact on cognitive development, can increase literacy skills, helps students to reflect significantly on their work and that of their colleagues, encourages critical and creative thinking, (f) is based on direct observation, experiment, logic, understanding things and phenomena as part of a system, (g) STEAM does not replace parts of the curriculum, but offers the possibility of simultaneous learning through the dimensions of different school subjects, without restriction in time, (h) the arts bring new meanings in the learning process, by combining artistic knowledge with the path of scientific knowledge, (i) marks a significant shift from the concept of content-focused learning to the concept of lifelong learning.

In the approach to integrated learning, school subjects retain their uniqueness, and in order to build connections it is necessary to transfer

knowledge. At the heart of STEAM learning is research, critical thinking, and process-based learning. The whole idea surrounding STEAM education is based on deep questioning. Interest, curiosity, the ability to find solutions to a problem and be creative in finding solutions from different perspectives (fields of knowledge, school subjects, fields of activity) are at the heart of this approach. This means that the humanities and arts are woven into the STEAM education. STEAM lessons can take place in the art or music room, but can also take place in the math or science room. STEAM learning is an application process that allows students to make sense for themselves and others. As Susan Riley points out, "School should not be a place, but rather a state of mind that uses the arts as a lever for explosive growth, socio-emotional connections and the foundation for tomorrow's innovators ... today!" (Riley, 2012). In international practice, several factors have been identified that condition learning through STEAM projects: (1) Collaborative planning, including cross-curricular content, with teachers from each curricular area; (2) Adjusting teaching projects to adapt to a new way of teaching and learning; (3) Professional development for all staff in STEAM practices and principles; (4) STEAM mapping scheme for curriculum and assessment design process; (5) Aligning the learning process through STEAM projects to Learning Efficiency Standards; (6) Implementation of learning through STEAM projects without interrupting the educational process as a whole.

The design of an integrative approach can be matched to the process of artistic creation, because in the negotiations that take place between teachers of different disciplines they strive to identify the common access points through which the elegant calibration of the contents is achieved. Through art, "those things whose form is in the spirit appear," Aristotle pointed out. In our opinion, the arts in the STEAM learning process build connections through spiritual intelligence, shaping the inner world of students' personality and building the bridge between the inner and outer worlds. There is a synchronization of multiple intelligences in the act of learning. The integration of the arts in the STEAM learning process is not done for external effects, but especially to transform knowledge through art into an inner experience, because: knowledge and discovery represent the successive stages of understanding; the human interior asks questions, seeks explanations, relates, identifies (always builds and shapes); manifests sensory-affective

comprehension and soul meditation / reflection; it constructs the judgment of the intellect in relation to the scale of its own spiritual values.

DEVELOPMENT OF STEAM LESSONS

At the STEAM Institute of Arts and Education in Westminster, UK, 6 steps were developed to create a STEAM-centered classroom. At every step, we work on both the content and the learning strategies specific to the arts, in order to address a central issue or an essential question. The process of carrying out a STEAM Project brings together the following six steps, with suggestions:

1. Focus. Select an essential question / problem to be answered. It is important to focus clearly on how this question or issue relates to each of the STEAM domains. Suggestions for students: identify / formulate the essential problem or question.
2. Detail. During the detailing phase, look for the elements that help to solve the problem or question. When you look at correlations with other areas or why there is a problem, you begin to discover a lot of key / fundamental information, skills, or processes that students already have to address the question. Suggestions for students: pay close attention to the elements that contribute to solving the problem / generate solutions to the answer to the question, document your observations.
3. Discovery. The discovery relates to active research and intentional teaching. We are looking for current and possible solutions. In this step, students look for current solutions as well as what does not work based on existing solutions. As a teacher, you can use this step both to analyze the gaps that students may have in a skill or process, and to teach those skills or processes explicitly. Here are learned, skills trained and specific processes related to solving the problem / question are carried out. Connections and ways to use skills, processes and knowledge to address the issue / question are actively sought. Tips for students: Look for current and possible solutions, learn specific skills and processes related to the problem / question, actively look for connections and ways to use skills, processes and knowledge in tackling the problem.
4. Application. That's where the fun happens! Once students have delved into a problem or question and analyzed the current solu-

- tions, as well as what still needs to be addressed, they can begin to create their own solution or solution to the problem. Here students apply skills, get involved in various knowledge / learning processes. The knowledge that was taught in the discovery stage is put into application, new solutions are found. Tips for students: Use your skills, explore processes and knowledge to create a new solution / solution to the problem.
5. Presentation. Once the students have created their solution or path to solve the problem, it is time to share it. It is important that the paper is presented for feedback and that various ways of expressing the student's perspectives on the question or issue be presented. This is also an important opportunity to facilitate feedback and help students learn how to give and receive knowledge. Tips for students: Share ideas / solutions with others, facilitate feedback opportunities.
 6. Link. This step is the one that closes the learning loop. Students are given the chance to reflect on the feedback that has been shared and on their own learning and skills training process. Based on this reflection, students are able to revise their work as needed and produce an even better solution.

Suggestions for students are: taking into account the suggestions of others, reflecting on their own learning process, reviewing solutions as needed.

In order to design and implement the learning process based on STEAM lessons / projects, it is useful to consider the answer to the following questions: 1. The distinct definition of STEM, STEAM and integrated learning, including the differences and similarities of each strategy; 2. Selection of units of competence in Science, Technology, Arts, Mathematics, which are aligned and mutually enhance learning by involving students; 3. Building a series of authentic and rigorous STEAM lessons regarding the individual cognitive involvement of students; 4. The elaboration of technological sheets, projects, learning paths, in which a great variety of paths are outlined that the students could explore in the STEAM lessons; 5. Design the evaluation that equitably measures the mastery of the content units for each projected purpose; 6. Creating data facilitation resources that involve teachers and students in the reflections of a STEAM learning experience and

outlining the next steps in student growth, etc. An example of developing a STEAM lesson can be initiated starting from integrative topics, from which questions can be formulated from different fields of knowledge or school subjects, curricular areas.

MODEL 1. Identifying the connections between arts and other fields of knowledge

Theme: Figures and forms in everyday life

Problem: How is form and content related?

Research and learning perspectives through the arts: (1) Figures and shapes in clothing design: patterns, meaning, style / useful. (2) Figures and shapes in Moldovan peasant blouse ornaments, Moldovan carpet, paving, etc. (3) Fractal figures in art and nature. (4) Organizing the artistic image in different forms of musical art. (5) Figures and shapes in dance composition.

MODEL 2. Building connections based on key questions

Theme: Looking out the window: how is the world changing?"

List of questions: What is the Earth singing about? How do we understand / distinguish the expressions "Music of nature" and "music about nature"? What does it sound like? Where does it sound? How does it sound like? Why does it sound natural and urban? What do my sensations (auditory, visual, olfactory, etc.) communicate when I receive the world around me? What is the secret message of works of art about the world we live in?

MODEL 3. Building the STEAM lesson based on the research groups

Theme: "The Magic of Sound"

Steps: 1. Divide into groups and choose a field you like. 2. Study the topic "Magic of the Sun" from the perspective of the chosen field, consulting different information sources. 3. Make a poster with the chosen information: texts, images, tables, figures, etc. 4. Organize an exhibition of the works, as in an art gallery. 5. Choose a group representative to present the topic using the poster. 6. Group members visit the gallery, examine each poster, ask questions, and make comments and other suggestions that they record in the footer. 7. Appreciate each other's projects.

CONCLUSIONS

We recommend teachers to include more interdisciplinary topics in the learning process, in order to enhance and deepen the artistic-aesthetic experience, because: an object or a phenomenon is treated through multiple approaches; the range of perception is widened and widened and, in many cases, the duration of knowledge / research is extended; new perspectives open up in the study of an object / fact / phenomenon, which students may initially consider unattractive - they can be made more interesting by adding another subject, another learning path; broaden and deepen basic knowledge and develop the skills needed to make sense of several topics; offers more opportunities for individualized learning and socializing contexts; the personal means of expression of the students are modeled and manifested. As a result of the implementation of the learning models through STEAM projects, we draw some conclusions about their importance: (1) The need to achieve cooperation between different disciplines, respecting the legitimacy of each; (2) Involvement of a certain degree of integration (connection) between different fields of knowledge; (3) The use of a common language between different disciplines (terminology, methods, etc.); (4) The demand for integrated learning, when the emphasis is not on the content of learning, but on certain competencies; (5) Transfer of teaching / learning / assessment methods from one discipline to another; (6) Overcoming the limits of a discipline; (7) Achieving the inter- and trans-disciplinary aims related to the profile of the graduate. The need to integrate the arts in the learning process through STEAM projects aims at (Morari, 2017: 210): (1) the knowledge of art can only be an act of internalization; (2) the artistic experiences of the inner life can shape / edify the human person; (3) for the conception of a positive impact of the arts in the learning process, it is important to practice the reflection in-actum (which exists in the process of the act of creation / reception) and post-actum (which exists after its production), because not only the artistic actum, but also artistic reflection contributes to learning; (4) spiritual intelligence (SQ), is an integrating element in the act of artistic knowledge, which brings together, mobilizes and transforms all the types of intelligence we have; (5) the metacognitive nature of artistic skills circumscribes the application of successful strategies.

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