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Editor-in-Chief

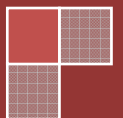
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Message from the Editor-in-Chief

Dear Colleagues,

We are very pleased to publish Special Issue for INTE-2017, ITICAM 2017 & IDEC 2017 conferences. This issue covers the papers presented at International Conference on New Horizons in Education, International Trends and Issues in Communication & Media Conference and International Distance Education Conference which were held in Freie Universität Berlin, Germany. These papers are about different research scopes and approaches of new developments and innovation in education, communication, media and technology.

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TOJET invites you article contributions. Submitted articles should be about all aspects of educational technology. The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJET. Manuscripts must be submitted in English. TOJET is guided by its editors, guest editors and advisory boards. If you are interested in contributing to TOJET as an author, guest editor or reviewer, please send your CV to tojet.editor@gmail.com.

November, 2017

Prof. Dr. Aytekin ISMAN

Sakarya University

Sound Creation and Artistic Language Hybridization Through the Use of the Collaborative Creation System: Soundcool

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ABSTRACT

We submit the development of a collaborative sound creation proposal made reality using the Soundcool system from its initial design phase to the scenic performance at the International Festival of Contemporary Music ENSEMS, Valencia (Spain). The "interstellar machine", a transdisciplinary piece whose linking thread is a story, is characterized by hybridization of languages and artistic fusion. It's a piece made possible by the joint work between students of Primary and Secondary Education, a group of experts and musical educators. From a qualitative approach, all the participants were interviewed and the analysis of an audiovisual recorded during the work process of the artistic proposal was carried out. From using data triangulation, the results obtained show indicators related to the hybridization of contemporary art languages, the use of a collaborative didactic methodology and the strategies developed for innovation and creation. The conclusions we came to just confirm a horizontal and participative way of working throughout the proposal, the success of the system used, the interconnection of artistic languages, the promotion of bridges in and outside the classroom or the approach of contemporary music to young people, among others. In addition, it focuses on some aspects of improving teaching technique and the need to continue working on this line.

Keywords: education, improvisation, contemporary music, creativity, video creation, multidisciplinary, Soundcool, art, technology

INTRODUCTION

Musical creation has been socially underrated and we have not fully understood its important role in transforming our society. In our experience as educators and music researchers, it's commonly forgotten - we forget - that the true protagonists of learning are the students. How many times do we place our students in front of musical works, eliminating the possibility of discovering them, recreating them and why not, creating them? How can we expect that by distancing them from their own sound stories will they discover by themselves, as if by magic, the beauty that these contain? Working in this field has led us to generate a type of spectator with a mind unprepared for the new, the adventure of discovering the hidden connections that enclose the works. It is a formalist vision, with a clear absence of rich experiences, which falls on deaf ears since the created connections are, in most cases, too weak to form students that are sensitive to music. It's in our hands to train future creators and, above all, citizens with good judgment and sensitivity who will live in those spaces where music happens. That is why, in the musical area, in all of its educational fields, we have to take new approaches that show us their full potential, placing students at the center of learning and not just as a mere curricular imposition. Likewise, learning music/art and exercising the creativity opens the mind to new possibilities in other disciplines such as mathematics, physics or engineering.

The "how" above the "what"

Addressing sound as an element of exploration and experimentation allows us to delve into other ways of teaching and learning music. It is the actions and the creative processes what should allow us to reorder the curriculum giving priority to "how they learn" over "what they learn", the latter more oriented to the content of the subject.

The prescriptive character of the Spanish legislative curriculum can not be a liability for the artistic development of young people, and we have the obligation to look for alternatives that will ease the development of their creativity and imagination. As Egan (2008) states:

The impoverished empiricist view of science has squandered its authority to promote in education a type of logical thinking restricted to the forms of thought that appear most clearly to us in children's creative activities. The popularity of this point of view has served to classify the imagination as a "marginal way" of education, with the "adornments of art", music, etc. (p.33)

Using sound as a raw material, disconnected from previous connotations allows us, through the action of students, to establish and build links from their own sonorous experiences and from this stage, make new connections with the musical legacy, creating in the students the habit of feeding their creativity through a "practical necessity" to continue, thus learning in a natural way.

The student, central axis in the processes of creation

From this perspective, we seek to implement strategies that treat our students as creators or co-creators and, with this, to offer new routes using sound creation as the backbone of the curriculum, offering them tools needed to develop their creative capacities.

The pedagogical approach that we defend here contemplates students as active agents, participants, engaged, curious, imaginative and creative, gears that place them before the culture as a permanent, and necessarily collective, a construction where new discourses are woven through interactions Between equals.

By placing students at the center of creative processes we open up a whole range of possibilities for making their learning experience creative and imaginative. The students are the ones who demand, each at their own pace, new learning, built from a practice with a sense of itself.

It is undoubtedly in this type of open creative processes where we generate rhizomatic relations (Deleuze and Guattari, 1977), since they allow to weave and to debate the old and new discourses on the music, giving it sense through the consensus, Through multiple sound narratives that unfold in the interior of all complex creative action.

Viewing every student as an artist, but also, that they view themselves as such, implies assuming a new role within the musical practices generated in the classroom. A role that implies greater responsibility, risk, collaboration, flexibility, resistance to uncertainty, critical reflection ... that leads us to generate a citizen with a wide cultural and artistic competence with a greater chance of developing themselves in a world that's constantly changing and in which we already live And all of this defining art as "A way of thinking, of acquiring and expanding knowledge and that its greatest utility is not to place pieces in a museum, but to help use the imagination." (Camnitzer, 2017: 20).

From classroom to LAB: sound incubators and hybrid territories

According to what we stated above, we believe that the workflows generated in a traditional classroom can not be compared with those that arise when spaces are designed as laboratories with the purpose to experiment. Therefore, we have created the first LAB, a space called MUSICLAB CR-209 in the IES Arabista Ribera, Carcaixent (Valencia). It is the first public secondary education center of the Spanish State, with two laboratories conceived as maker spaces designed entirely to ease musical creation and which has become a reference at a national level.

The LAB seeks the involvement and autonomy of students, who learn by doing, browsing, managing their times and resources in favour of the assigned collective work which is part of a whole, that is the project. It is a place where we encourage initiative and creativity, and where every student brings puts their own ideas and skills to use. Not everyone should do the same, each person freely decides on which part they can be of better use or on which they could add more to their knowledge (Gardner, 2000). The purpose of the distribution of work is to ensure more horizontal and collaborative practices where the "expert" - this could be the most experienced student - can help the others. It introduces, then, the figure of the student-tutor or mentor, able to make others learn from how he recalls he learned. The space of the teacher disappears in favour of the horizontality of the relations that will deepen co-participation and equality between teacher and students. The teacher can guide when it is required, help, participate, observe, share... Here what must prevail is that respect won is and not imposed, auctoritas against authority.



Figure 1: Students working next to experts in the LAB CR-209 in the IES Arabista Ribera - Carcaixent (València).

As a result, the LABs are conceived as incubators of ideas where the practices and projects that are developed in their interior are intended to be shown beyond the classroom. We need to pass through the walls and transcend the classroom to turn each project into an open window that allows us to share with society the art that teenagers themselves can create; or, to win the public's attention, to be themselves, in a future, a more critical and participative public, contributing with key ideas for a real construction of the culture and therefore assuming the important implications of this type of collective actions, in favour of transforming into a more democratic and modern society, a society of greater quality.

Over time, the LAB has boosted the flow of artists and creators who, from their particular vision of musical creation, have collaborated in the production of projects that have served mainly to provide a fresh vision of the musical world from real experiences and contexts. This type of collaboration brings students closer to a more realistic view of a musician's profession and, above all, helps to integrate new possibilities ranging from the assimilation of new musical styles, composition techniques, group work, event management and marketing to staging and performative elements. Along the way, we are shown multiple connections to the sound that unfold in all directions, connecting different areas of knowledge, using musical creation as a cross-cutting axis to all of them.

A renewed educational view through artistic projects

Placing the student as the protagonist of their learning and offering them the opportunity to create and experiment

from a methodology based on project learning is a real challenge for teachers and students, since it involves setting up itineraries or creative routes (Vergara, 2015). Learning is understood as a process of exploration and research, where open minds are a must to organize and build using the information that is collected along the way and that is filtered through our experiences and personal and collective lessons. In the end, this type of approach gives an extraordinary character to the processes, treating them as elements of vital importance in the learning, beyond the final results they generate/lead to.

According to this methodology, each project, sometimes premeditated, other times by pure serendipity, is created with a cross-sectional view that attends a multi-sensorial and multi-expressive education, like the one that can be found easily in art teaching. Searching, finding, paying attentions to these twists or possibilities of connection does not lead us to dilute the area of music into a sort of "auxiliary area, instead, it is reinforced, as a powerful tool with the capacity to transform society. We are therefore in agreement with Eisner (2002) when he states that "we do not contribute anything to the arts when we try to justify/measure them in terms of their contributions to other fields and relegate it to a merely" auxiliary "subject in relation to other areas of the curriculum. When giving priority to these contributions, the arts are put at the service of purposes that are not distinctively artistic, and in the process lower the value of their unique contributions to the education of young people "(p.146).

As the musicians and educators we are, we defend the idea of offering strategies and tools that give a more renewed and horizontal view of musical learning. In this proposal described below, we immerse the students in a true process of sound creation forming a network together with creators, pedagogues, and experts who work hand in hand to achieve a global artistic project.

DESIGN OF THE INVESTIGATION

Context

The context in which this study is framed is directly related to the premiere of the piece "The interstellar machine". This project brings us a contemporary artistic experience within the program of the contemporary music festival X-ENSEMS, held at the Palau de les Arts in Valencia (Spain). This proposal's main objective was to bring the younger audience closer to new contemporary musical proposals. In this case, the ENSEMS festival, the oldest one in Spain, designed a new space: X_ENSEMS to facilitate a program intended for the younger audience. Improvisation, creation, word and video creation have been the ingredients used in the première of a performative action whose tying thread is a story. Although the unifying element is the sonorous creation, this is not an obstacle for other fertile territories of the limits where disruptions are provoked and achievements that lead to coming up with new ideas and constructions related to other artistic languages.

The interstellar machine is a science-fiction story in which explorers of an advanced civilization build a machine that allows them to travel to different planets visiting their curious inhabitants, producing sounds in real time played by students Of Primary and Secondary Education, along with professional musicians.

In the design of the proposal, we sought a continuous balance between the interests of the students themselves and the growth towards new sound territories. For this to work, special attention was focused on the creation of proposals that would not limit musical styles to work, but rather, and over time, broaden the repertoire of practices and styles, favouring eclectic and plural musical experiences as much as possible.

The Interstellar Machine consists of a text narrated live, in which a lot of languages take part, where the sonorous, the visual and the gestural are intermingled. It serves as an example of hybridization and a strong commitment to the exchange of ideas and of the creation of multidisciplinary contexts that facilitate artistic innovation.

The formation/stage is set up by an orchestra of 41 mobile devices, managed by the real-time collaborative sound creation system, Soundcool. It is a tool to work on music education using technology such as mobile phones, tablets

or Kinect, developed by the Universitat Politècnica de València. It is an open and free system available to everyone that makes it possible to take a creative, multidisciplinary approach that creates dialogues around the musical event. Soundcool is being used in several European countries and American universities such as the Carnegie Mellon (USA), a leading university in international music technology, and the Technological Institute of Advanced Studies in Monterrey (Mexico), a leading player in technologies used in art and design internationally.

Soundcool uses the connectivity of mobile devices so they become controllers that allow real-time manipulation of sound. These mobile devices use the Open Sound Control (OSC) protocol and a simple and attractive interface to connect to a central computer through a wifi signal sending the data through an IP address and a different port for each mobile device.



Figure 2: The premiere of The Interstellar Machine in the Palau de les Arts - València.

The result is that every phone or tablet becomes a powerful musical instrument with the ability to control sounds (WAV, AIF, MP3, VST (Virtual Studio Technology), instruments and input effects. Furthermore, it offers creative combinations of digital and analogue sound of any sound source external to the system. Therefore, Soundcool has the ability to integrate the traditional classics with the most advanced technology in music.

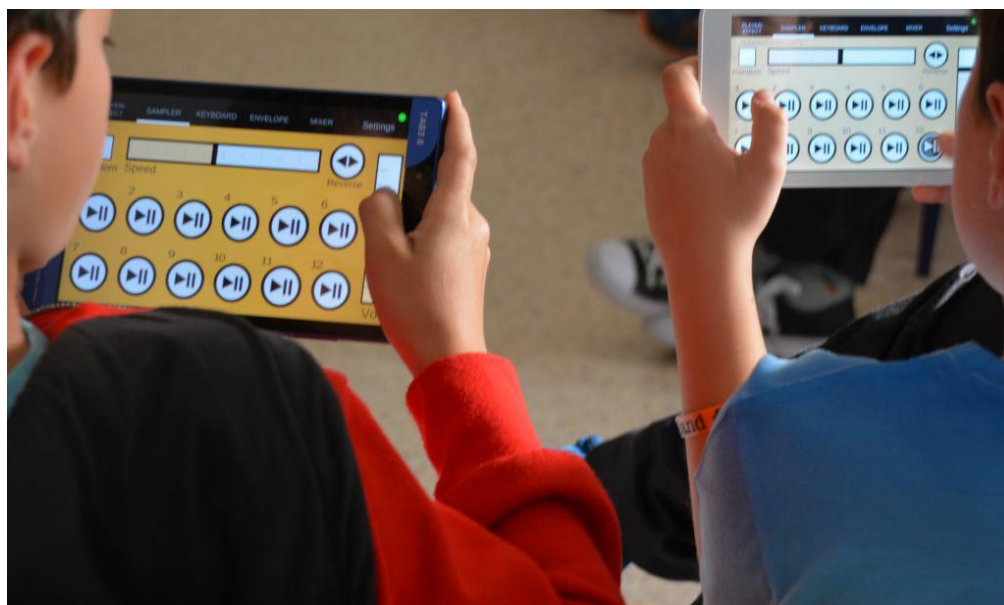


Figure 3: Pupils making use of the Soundcool system through their own mobile devices.

The use of this system has been completed by improvising with a sax played by musician Josep Lluís Galiana, who also directed the orchestra, and a piano "soundcool-prepared" played by the teachers Noemy Berbel and María Elena Riaño. The gestures that the narrator of the text, Sergi Moyano (secondary education pupil) made, were modified in real time by the video creator Stefano Scarani through the Macchina Peformativa 10. The technical team consisted of the sound technician Giannino Clemente and Àlex Moreno Garzó, a graphic and audiovisual documenter. The director of the whole project was Adolf Murillo, who also took care of the educational part of Soundcool.

Hypothesis and objectives

We consider two starting hypotheses:

Hypothesis 1: Proposals in which there is a hybridization of artistic languages from a contemporary, collaborative and creative vision facilitate the approach of a young and neophyte audience to this type of music.

Hypothesis 2: Soundcool is a tool that reinforces the hybridization of artistic languages facilitating the participation of young people.

From these we raise the following objectives in the study:

- To know and analyse to what extent these types of hybrid proposals can facilitate a greater acceptance of contemporary music to the young and neophyte public.
- To analyse what elements of contemporary language are reinforced through the development of proposals of this type.
- Analyze if the Soundcool system of collaborative creation facilitates the connection between the different languages that come into play in the proposal.
- To inquire about the strategies carried out during the work process of the proposal.
- Propose new strategies that allow us to continue creating proposals that will help us achieve these objectives.

Method

We took a qualitative approach. We used triangulation as a research strategy, as a control procedure and to ensure the reliability of the results (Denzin, 1970). Among the different types proposed by the authors, we have chosen the

triangulation of data, the one that derived from the categorization process, to perform the analysis, obtain the results and finally, draw conclusions. In this case, the data from the three groups of informants allowed us to better understand the reality studied.

Participants

The participants' sample was formed by three distinct groups: students, group of experts, and teachers specialized in musical education.

When selecting students, we only targeted a specific group. We only asked students who had previous experience with Soundcool. It was necessary for the students to know how to use the tool in order to spend time teaching the processes of musical creation. The sample was made up of 25 ten-year-old students who attended 5th-grade Primary School in the CEIP school Carmelo Ripoll (Ontinyent-València) and 16 students aged 15-16 attending 3rd and 4th of Secondary Education and coming from the Secondary Education Institute "Arabista Ribera", Valencia (Spain).

With regard to the group of experts, a sampling was used that Llorente (2008) calls opinionated and determined by the choice of subjects that are important sources of information to dominate the theme approached. It counted on the collaboration of Josep Lluís Galiana, saxophonist musician, an expert in free improvisation and Stefano Scarani, an expert in electronic music and video creation. Both had had previous experiences as creators with children and young people.

Likewise, the third group, formed by the first three authors of the present article, professors specialized in Music Education, Creativity and Technology, was key to successfully carry out the study. Coming from the Universities of Cantabria, the University of the Balearic Islands and the Ministry of Education of the Autonomous Community of Valencia which offered complementary profiles in a form of teamwork.

Instruments

Two instruments were used for data collection:

1. Interviews. We gathered information about the opinions, descriptions and interpretations of the situations lived by the participants. Through the interviews conducted, it was possible to know the perspective of students and experts on the strategies developed throughout the work process in the proposal made. Two individual semi-structured interviews were conducted to each of the experts and a group interview with the students. We recorded all of the interviews.
2. Documentary analysis of the "*Making of*"¹. This audiovisual, recorded during the work process of the artistic proposal, has been an essential instrument as it gathers the voices of all the protagonists. A way of monitoring the study very closely and contributing relevant data to it.

Procedure and phases of work

According to the stated objectives, we describe the process, the work prior to the premiere that tells everything that was developed during the rehearsals and the performative experience during the premiere of the work.

Phase 1. We focus on making changes to the ways in which we can generate creative products. A vision in which the generation of ideas by everyone would influence the final result. We believe that the greater the involvement, the greater the synergy between the involved parties, creators, teachers and students. We visited educational centers generating different workshops of sound creation through the use of Soundcool, a research project directed by the engineer and composer Jorge Sastre. For any teacher or musician interested, this system is free to download, both the computer program and the mobile applications for Android and iPhone. The Soundcool web page gives you access

¹ Making of access: <https://youtu.be/nVvm7FVM6II>

to the software itself, publications, projects, social networks, etc., as well as information on projects, tutorials, etc. Soundcool is a system consisting of a series of modules such as players, real-time microphone sound input, sound effects, virtual instruments, mixers, etc. Which can be interconnected and operating on a Mac or PC. The various modules can be controlled via wifi with mobiles and tablets, facilitating the collaborative creation, and also with the Xbox Kinect video game interface. The text of the story in Catalan was presented, which worked as a creative trigger and catalyst for the first ideas and contributions that were emerging. In the workshops, a sonorous experiment was carried out to build a sound bank used in the final piece, as well as improvisation techniques and management of the Soundcool collaborative creation system.

Phase 2. A session was held with the conductor of the work, the improviser Galiana, and was oriented to the stage set up and the assembly of the different parts of the story. The main idea was to seek the coherence and a global vision of the work by the participating students and to generate knowledge flows between them. The students, at all times, were not viewed as mere content consumers, but as authentic agents of action and protagonists in this construction process. Dialogues, trial-error, doubts, decision-making were some of the issues that emerged at this stage.

Phase 3. The third phase, performative, was developed outside the classroom, in the Palau de les Arts and was divided into two parts. In a first part, the audience could watch the making of the whole process (which had been recorded and edited during phases 1 and 2). Then the concert began and the students, as musicians, went on to the stage to play, create, and offer an experience that was gratifying, exciting and, above all, meaningful.

Phase 4. The interviews were conducted. Each of them, the individual ones as well as the group interviews were made explaining previously the purpose established for this investigation even though all the participants had lived the artistic experience first hand.

The topics or around which the questions were directed at all the participants (experts and students) were:

- The experience as creators in the artistic proposal realized.
- Strategies developed during the work process
- Using Soundcool as a collaborative Tool
- Implications with contemporary music

RESULTS

Each of the interviews was transcribed and read individually by the researchers, and then a joint reflection had place. Using the initially given dimensions, in each transcript units of meaning (words, phrases) emerged, which were later grouped into the following three categories:

- Hybridization of contemporary artistic languages
- Collaborative didactic methodology
- Innovation and creation

On the other hand, the comments and observations gathered through the audiovisual "Making of" are fundamental elements of analysis because we believe that by the documenting the work sessions through the perspective of the involved, we can observe fundamental aspects of the learning processes, in this case, in an approximation to the contemporary musical fact.

The main results are presented through a series of tables which include the categories, main indicators and selected fragments:

Table 1: Category: Hybridization of Contemporary Artistic Languages

INDICATORS	FRAGMENT
Fusión of Styles	<i>No contemporary artist, whatever the field may be, can understand creativity without hybridization, participation, interdisciplinarity, heuristics (and there was a lot of this throughout the process), empathy, game, adaptation, exploration, pursuit, interaction, coherence, dialogue with reality, discipline, respect for each other, commitment, honesty, ethics, sincerity, solidarity, generosity ... (Ex).</i>
Links between the school and society	<i>It's a global experience and not a fragmented one (Ed).</i>
Interdisciplinarity	<i>An element of contemporaneity very widespread today is the mix of different styles: contemporary music tends to involve popular music, old music, rock, etc. This freedom, together with the use of multi-instrumental digital tools, allows us to create an important bridge between the personal sphere of each student and what we consider to be academic, presenting an important attractive element of union instead of the classic separation between real life and school (Ex).</i> <i>This interdisciplinarity, to put in the same plane so many activities and tasks, is what I found extremely interesting (Ex).</i> <i>We used the story as a creative detonator because normally, when we, the creators, the musicians, try to make any kind of music the suggestions can come to us by any element or field. As single sound can be a creative element that allows ideas to start a path. A lot of the times it will be through texts and in this case it will be the story that offers us a narrative, as a kind of path, in which we mess with the sound (Ed).</i>

Table 2: Category: Collaborative Didactic Methodology

INDICATORS	FRAGMENT
Shared processes	<i>The experience of total creation, the shared and participatory process, bringing all that to the younger ones is what I liked the most (Ex).</i> <i>They helped us, the older ones. We added the missing sounds (St).</i> <i>We were also there, thanking the two technicians for helping us and it was good to learn technology (St).</i> <i>There was no need to play one alone. It sounded better together. And the applause at the start really motivated us (St).</i> <i>A clear concept that has remained of all this intense and profitable creative process and is that the youngest have discovered that music is many more things than just sound, that all languages are like communicating channels and that, therefore, can be poured into one another. Finally and most importantly, that contemporary creative processes can only be tremendously collaborative (Ex).</i>
Encouraging interpersonal relationships	<i>It has brought us new friendships and we have all gathered to do our best (St).</i>
Gusto por la experiencia	<i>It was a unique experience and I'd like to repeat it (St).</i>
Grupal responsibility	<i>Something important that I learned is that patience is key while rehearsing and performing in a concert. There you learn that you have to wait for your turn to play (St).</i>
Personal autonomy	<i>The important part is that they themselves are understanding that their role is fundamental but they are also listening to the role of others. There is an enrichment, beyond the artistic part and to learn a series of competences that are going to be necessary to them as well (Ed).</i>
Responsibility	
Stepping outside the comfort zone	

	<i>The key element in this didactic methodology is the responsibilities we give to the student, who is involved in the completion of a product that will be presented to the public. They leave the protected environment of the classroom to prove themselves able to do a "real" job; it is the best way to hold a person accountable (Ex).</i>
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Table 3: Category: Innovation and Creation Using Soundcool

INDICATORS	FRAGMENT
Technologic innovation	<i>Using contemporary languages in the project creates bridges between artistic languages and academic languages, especially if electronic media is used together with the more traditional media (Ex).</i>
New instruments	<i>It has been a very nice experience since we have learned to do music with a tablet (St).</i>
Openness to other techniques	<i>With Soundcool (and other programs), we can demonstrate how the same device can serve to create rather than be used to a limited extent set by the software; with it, we can prove that we have the power in our hands, we only need to show it. This is not so clear with other more classic tools (Ex).</i>
Experimentation	<i>It's a new kind of music with "strange" sounds. My parents told me that they had never seen anything like that (St).</i> <i>We were asked to show how we controlled the sounds with our tablets (St).</i>
Improvisation	<i>We are going to improvise in real time on the images and the voice of Moyano (narrator). That means that at one point that he is speaking there should sound something related to it ... Look for adjectives to define what kind of sonority. That helps us at the time of recording: here could be pieces of music or sound rhythms, or play with the voices and from them do whatever comes up ... That is recorded, loaded into Soundcool and then played (Ed).</i>
Creation	<i>I had the feeling of playing a different sound, you could play it as you wanted, with a different speed or volume (St).</i> <i>Using the analysis of the text and the image we will improvise (Ex).</i>
Horizontal work	<i>Each of the older students had a keyboard "piano" which played different sounds. They made music on the spot, they could play several keys at once and they were the basis of everything. We were the complements (St).</i> <i>The children will be placed as the generators of the creative process and they themselves will be artists, composers and creators (Ed).</i> <i>We heard reverse palettes, free sounds, thousands of colors, dissonant sounds. We played a battery inside out, an upside down chorus and a machine that sounded like a dinosaur. Others sounded were like maracas, like firecrackers and the doors of a special ship when opened (St).</i> <i>Then there was Mr. Galiana, he played the sax and it was interesting because he made small and big sounds (St).</i> <i>I've found it very powerful and infinite in its possibilities. Thinking of sound as the base and putting it in the center of this creative process is a great revolution, given the current educational model (Ex).</i> <i>One of the most interesting questions of the proposal with the use of Soundcool is horizontal work at the level of artists, professionals, teachers and children of different ages. We are all working on the same level and we will all make a real creation, on the spot (Ed).</i>

It should be noted that there exist other results concerning the needs we still have to cover, results from observing during the processes. We've highlighted the following ones:

The main element that could have been much more developed in this type of proposals is the implication and commitment of the students in each and every one of the parts of the creative process. Students should participate much more actively in the decision making, in the elaboration of musical, visual, literary, sonorous, dramaturgic and scenic materials. I understand that this greater involvement requires more effort and much more time and human and economic resources, but I think that this creative process is extrapolable to any other educational process and to any daily activity (Ex).

I think the next phase is to develop more Soundcool audio and video modules and ease customization of modules not only by developers, but also by student users (Ex).

DISCUSSION AND CONCLUSIONS

The results of this study show how students and professionals can immerse themselves in global artistic projects, exploring paths and strategies in which all are co-creators, in the line argued by Camnitzer (2017). They all agree that the creation during the work process and the performative act itself has been a participative, social, constructive act capable of deploying educational potential through the nexuses and interactions produced among the people, the hybridization of Languages and the possibilities that technology offers us, in this case, using the Soundcool system. This confirms the hypotheses and objectives raised in the research, corroborated by the emerging categories and evidenced by the indicators for each of them.

Thus, in each of the categories we find answers by experts, educators and students, showing a way of working as a team and developing strategies looking at creative processes in a horizontal way, where each and every one of the protagonists is a key player for the project. This type of proposal can be a fundamental factor in the transformation of artistic practices in classrooms. As Scardamalia and Bereiter (2006) affirm, teachers would be experts capable of solving open problems rather than facing changes with routines previously learned.

Likewise, both the youngest and the oldest students have experienced first hand an approach to the sound and the musical language that promotes the use of the technology that we have at our disposal. The perception after the use of Soundcool has been very positive. It is true that this is a punctual experience and the results can not be generalized, but we consider that the realization of new proposals like this one is an interesting way of working in the classrooms, since they can contribute to the acquisition of taste for a contemporary aesthetic and the formation of new young audiences. And, more importantly, to establish connections with the arts, as defended by Eisner (2002).

Through the textual analysis of the story created, both the drawings made by the students and the sounds and music recorded and later manipulated in real time through Soundcool, we have demonstrated that the literary, visual and sonorous languages can be conjugated in a hybridized way. Likewise, the processes and practices carried out during the test phases have been fundamental to the understanding of this form of multidisciplinary work and to cultivate enjoyment in the "making". We believe collaboration has been a key element for this, since it has been present while listening, consensus, participating, contributing ideas and developing other strategies, where everyone has learned from everyone.

However, in spite of the success of the proposal, the results also show some organizational, participatory, technical and resource management issues, which can be improved, and exist probably due to the lack of experiences that have to do with a continuous teaching practice, open to the new challenges related in part, by the advantage that the new learning scenarios offer us. In fact, the current curriculum doesn't promote actions that foster the development of creativity and imagination, fully in line with Egan's (2008) arguments. Researches such as that of Urrutia and Diaz (2013) point to the resistance in the educational systems of the 21st century that still prevent the use of contemporary

artistic languages. In the opinion of the aforementioned authors, the role of the musician today is different, as it's the role of the teacher and that of the students.

It's in our hands to reflect on it and dare to start our own actions or, at least, open the doors for new possibilities that exist and that have yet to be traversed. Because each one of them is a challenge and a new opportunity to live and share the music, because we know that the learning processes are favoured by cooperation between many minds, for both cognitive and emotional reasons (Johnson, Johnson, Holubec, 2008, Salomon, 1993).

By synthesizing after having carried out the study, we can conclude:

- The existence of the hybridization of artistic languages through the realization of the project.
- The opportunity to bring contemporary music to a young audience.
- A form of teamwork, horizontal, creative and innovative by experts, educators and students.
- The success of the Soundcool system as a tool for collaborative sound creation and its interconnection with other languages in a real-time staging.
- The promotion of bridges inside and outside the classroom.
- The flexibility required by the protagonists of the project during the trials, cause of the necessary adjustments during the work process.
- A greater acceptance of the contemporary artistic languages by the participating students through practical proposals and in real contexts.
- The need for greater participation in the student's' occasions in decision-making.
- The lack of time and resources that prevented us from deepening more in some aspects.

As we have seen, this type of proposal enhances critical thinking and personal development of each individual. By proposing a group project, each individual underwent a process of self-reflection that allowed them to discover their interests and find out about others. We think that the important thing in this type of proposals is not the final product, but all the connections that we discover and establish until we find a solution that is evaluated by everyone. Working holistically between different disciplines have put into play different skills and knowledge that go beyond the partisan view provided by the unidisciplinary approach. Through the proposal that describes this study we developed a type of contextualized learning from a problematic situation that was provoked in the students and the actors that intervened, a mobilization of conceptual knowledge, procedural skills, values and emotions in a completely integrated way. In order to do this, students became involved in actions such as thinking, planning and doing, but they also became emotionally involved because they are activities linked to authentic contexts that escape the challenge. As Martín (2008) explains, working with others helps us to become aware of one's own cognitive and emotional processes; At the same time, it forces us to agree to define common objectives, to seek strategies to move forward together and reach shared solutions; In short, working together helps us to set our ideas straight and be flexible with the rest of the group.

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