DISTANCE MUSIC LEARNING: METHODOLOGICAL AND TECHNOLOGICAL ASPECTS

O ENSINO DE MÚSICA A DISTÂNCIA: ASPECTOS METODOLÓGICOS E TECNOLÓGICOS

ENSEÑANZA DE MÚSICA A DISTANCIA: ASPECTOS METODOLÓGICOS Y TECNOLÓGICOS

Fabiano Lemos PEREIRA
Federal Center for Technological Education Celso Suckow da Fonseca (CEFET)
e-mail: fabiano.pereira@cefet-rj.br

| 1

How to refer to this article

ABSTRACT: Through a bibliographic review, this work presents a selection of technological and methodological aspects that distance music education has permeated. As main authors, Keith Swanwick (2003, 2014) and Daniel Gohn (2011) stand out. In the end, it is concluded that the current technological aspects cannot integrate the generics tools of Learning Management System (LMS) with the various existing musical resources and, in addition, the management of Distance Education courses (DE) does not have take into account the specificities of Music courses, in addition to the need for technological mastery on the part of the teacher and the student.

KEYWORDS: Musical education. Music technology. Distance education. Distance music education. Methodology and technology in music education.

RESUMO: Através de levantamento bibliográfico, este trabalho apresenta uma seleção de aspectos tecnológicos e metodológicos que permeiam a educação musical a distância. Como principais autores, destacam-se Keith Swanwick (2003, 2014) e Daniel Gohn (2011). Ao fim, conclui-se que os aspectos tecnológicos atuais não conseguem integrar as ferramentas genéricos dos Ambientes Virtuais de Aprendizagem (AVA) aos diversos recursos musicais existentes e, ainda, a gestão de cursos de Educação a Distância (EaD) não levam em conta as especificidades dos cursos de Música, além de haver a necessidade de um domínio tecnológico pelo professor e do aluno.

PALAVRAS-CHAVE: Educação Musical. Tecnologia musical. Educação a distância. Educação musical a distância. Metodologia e tecnologia no ensino de Música.

| 2

RESUMEN: Através de una revisión bibliográfica, este trabajo presenta una selección de aspectos tecnológicos y metodológicos que la educación musical distancia ha entrelazado. Como autores principales se destacan Keith Swanwick (2003, 2014) y Daniel Gohn (2011). Al final, se concluye que los aspectos tecnológicos actuales no pueden integrar las herramientas genéricas de los Ambientes Virtuales de Aprendizaje (AVA) con los diversos recursos musicales existentes y, en adiccíon, la gestión de los cursos de Educación a Distancia (EaD) no tiene en cuenta la especificidades de los cursos de Música, además de la necesidad de dominio tecnológico por parte del profesor y el alumno.

PALABRAS CLAVE: Educación musical. Tecnología musical. Educación a distancia. Educación musical a distancia. Metodología y tecnología en educación musical.

Fabiano Lemos PEREIRA

Introduction

Music learning at a distance has occurred since correspondence teaching, later through radios, TV, satellites, computers, instructional programs, video lessons, and play-a-longs. In the 21st century, the way of learning Music is changing with access to the Internet and mobile platforms mediated by digital technologies. The learner can now interact and dialogue directly through Digital Information and Communication Technologies (DICT's), and musicians and music teachers who once needed a publisher can now create their own materials[1].

It is necessary to carry out an educational process in Music with digital and interactive media, which means introducing technological aspects as means and ends to achieve the goal of learning Music. In an attempt to break with paradigms, it is necessary to think of a methodology that can combine activities and practices with different media suitable for each specific objective and a pedagogical project aimed at an open and student-centered education.

A bibliographical survey of materials on music education, distance education, technology in education, and distance music education, will firts present some methodological aspects of technology-mediated distance education and music education. Then, will be presented the selection of methodological aspects of distance education. Finally, the final considerations will be made.

| **3**

Methodological aspects

The emergence of research in Music Education on methodologies based on new technological resources presents a field that is still being gradually built since tools focused on learning and musical production is constantly being created. For example, in Brazil, we can find some research related to UAB courses, such as Gohn (2011), Nunes (2012), Schramm (2009), and other research on the use of technology in music learning.

According to Swanwick, music is a form of discourse steeped in metaphors shared with other areas, and this has consequences for the process of Music Education. There are three cumulative levels of metaphorical transformations: (1) "notes" are heard as "melodies", sounding expressive; (2) "melodies" are heard together, creating relationships, as if they had "lives of their own", undergoing changes by juxtaposition, realignment, and transformation; (3) music informs the "life of feeling" or merges with previous experiences, as if they had an

---

[1] This text is part of the author's doctoral thesis entitled "Licenciaturas em Música a distância: um estudo dos cursos da Universidade Aberta do Brasil", authored by Fabiano Lemos Pereira. The author made adaptations and updates and wrote a new conclusion - final considerations.

independent existence charged with a "flow" that occurs at the intersections between various activities and cultures, reaching a "culmination of experience" and "aesthetic emotion" (SWANWICK, 2003).

According to this author, for some people, reaching the third level of metaphor would be a rare experience, leaving a trace that cannot be assimilated consciously - through the schemata[2] of previous experiences, which involve our nervous and muscular system, that resume movements, thoughts or feelings that produce a symbolic process strongly connected to our personal and cultural history.

Swanwick (2003) presents the concept of music as an intermediary space, in which there are articulated ideas of intersection between the subject and the world; therefore, Music Education in schools and colleges cannot be limited to support a single social function of transmitting information, and should not replace the direct involvement of students with the musical discourse by global tourism through CDs. Therefore, the use of media can transmit information, but it should not replace direct contact with the local culture when given the opportunity - something complicated to happen if we consider the Brazilian educational reality, especially in public schools.

Therefore, media use should be a starting point to promote a debate and give it a new meaning. Swanwick (2003) advocates a vision that we should not just absorb the culture but be cultural interpreters in a living and creative way in a network with different musical accents, whether in the creation, musical appreciation, or performance.

Then, "the main activities of composing-listening, performing-listening, and appreciating-listening will take place in relation to music in a cultural realm broad enough for students to become aware that they have an 'accent'" (SWANWICK, 2003, p. 54, our translation). In this way, the author believes that people become musically engaged when they view the activity as meaningful and authentic.

When thinking about music teacher education for elementary school, music as an intermediary space should make the subject's connection to the culture of the world, to other "accents," including our own, since exposure to different cultures helps us understand something of our own.

Thinking about multicultural education implies expanding local practice. By starting from the student's reality, by thinking about the international pop music present in everyday life

| 4

---

[2] Plural of schema; means form, mental pattern, also understood as values, beliefs, and roles actualized by the individual by active assimilation.

of the elementary school student, the realization of a musical intercultural dialogue should be a goal to be experienced. It can encompass popular or classical music. Bringing diverse world experiences into the symbolic space of music allows us to be cultural interpreters of our own culture.

The symbolic functions should be one of the goals to be achieved by teachers, and consequently, the "transformation of symbolic structure into meaningful experiences" proposed by Swanwick (2003) should be one of the goals to be achieved in Music Education.

It is necessary to have a methodology that involves experiences of knowing and making music, that understands music as a reflection of culture, that has a metaphorical nature, and that can be creatively reinterpreted since we are cultural interpreters (SWANWICK, 2003). For the teaching of music at a distance, the course should lead the student to meaningful experiences, and this entails an educational process in which the dialogue between students and teachers occurs in the foreground - in which the teacher planning occurs in a less closed manner.

Open education is necessary for the construction of a model of distance music education. At this point, "considering the students' musical discourse", as proposed by Swanwick (2003), implies that each subject has materials partially constructed with the participation of the students directly involved or even has the option of subjects with open menus, which is up to the students to elaborate these materials. Gohn (2011, p. 206, our translation) recognizes that in the distance music courses at the Federal University of São Carlos, "largely the curricula are closed, creating challenges for cost management when it comes to renewing study materials".

| 5

Having open learning as a methodological focus is extremely important in distance music courses. This involves not only technology and appropriate methodologies but also time management and differentiated resources to make learning happen. Such concepts are fundamental to working toward the goals the 21st-century music teacher needs, including multiculturalism and the expansion of cultural capital.

Swanwick (2014) compares the maxims of 19th (Annie Jessy Curwen) and 20th (Murray Schafer) century music educators and concludes that what differentiates them is the certainty of curriculum content - in the 19th-century strong classification and framing, and in the 20th century weak classification - that is, little pre-structured content, relying on student composition and performance as the main point in the 20th century. Allied with this structuring and the competencies of the 21st century Music teacher, open education follows this line of reasoning.

It is worth noting that although weak grading is one of the characteristics of open education, other factors are necessary for it to be characterized - for this, see Pereira et al. (2016).

Gohn (2011) asserts that in the Music course at the Federal University of São Carlos, the time to prepare the multimedia material exceeds the conception phase before the execution phase of the discipline. Considering that these UAB Music courses have been taking place for a decade, there was enough time for the practice of producing didactic material to take place - which did not happen. Therefore, this argument is controversial if distance learning music courses continue to practice using texts taken from periodicals instead of building interactive multimedia material based on the student's reality. Therefore, it is urgent to reformulate the practices of didactic material elaboration for distance courses since a methodology based on the student depends on practice in this modality.

Schramm (2009) points out the dichotomy focused on music technology as a learning tool about learning music through technology: while learning through technology presents preconceived content to the student - such as video or score excerpt -for the focus on music technology, the student needs to be able to operate it - in video, audio or score editors to create multimedia components, creating music learning objects -, being able to manipulate and modify elements of this object according to their objectives. Knowing how to operate these tools is one of the fundamental characteristics of the 21st-century musician, which ends up being left out of many higher education courses for training musicians and Music teachers due to the conservative habitus inculcated in universities, as Pereira (2015) points out.

The focus on music technology is close to the concepts of internet learning or techno music (LEVY, 1999) and social interactionist materials advocated by Villardi and Oliveira (2005) - going beyond the written text and expanding to audios, videos, and sound manipulation.

Pereira (2014) points out that in a Music Perception class of a distance course by UAB, a recording of a melodic dictation created and sung by a student based on an online exercise in which students should transcribe it was used during a face-to-face exam, breaking with a model of exam created by a teacher and performed on the piano. The author points out that during an online activity, one student was asked to compose and sing a melody, and another student was asked to create a polyphonic second voice over this cantus firmus.

Such activity would not be so easily executed in a face-to-face class and provides an adequate methodology for Distance Education (DE). Instead, the teachers knew how to use the peculiarities of technological and communicational resources to provide activities appropriate to the medium and used materials created by students from other courses that will serve as

material for future classes - without depending on the bureaucracy of involving a team for the creation of the material.

Encouraging students to create possible materials, especially interactive materials, to be used in future classes is a way to break the bureaucracy and generate a database of materials to be used in the future. In other words: besides the existing open educational resources (OER) created by teachers, encouraging students and teachers of classroom courses to produce materials for a database of OER in scores, audio, and videos for music classes and also make them available to non-students can be an interesting resource to be adopted to circumvent bureaucracy, creating a kind of popular virtual library.

> In areas whose culture has a predominantly verbal memory and where there is no ongoing project of infrastructural transformation, the problem is not the reading of the word, but a more rigorous reading of the world, which always precedes the reading of the word. If in the past popular groups were rarely stimulated to write their texts, now it is essential to do so from the very beginning of literacy so that in the post-literacy stage, attempts can be made to form what could become a small popular library, including pages written by the students themselves (FREIRE, 1989, p. 19, our translation).

For a social-interactionist and open learning proposal in music using technologies, music technology as a creative tool must contemplate a methodology involving active and creative participation. Rudolph (1996) points out three ways of applying interactive technology: (1) browsing and using concluded virtual teaching materials; (2) creating authorial proposals by using technologies as tools; (3) creating new technologies and tools. However, the proposals that involve creation come up against the need for students to master software programming, which is not the main objective of an online music course.

According to Swanwick (2003), we can choose how and when to engage with music and use it for different purposes, but Music Education, when it is part of school life, needs to propose that music occurs through three metaphorical processes, in which we transform (1) sounds into "melodies"; (2) melodies into gestures and structures; and, subsequently, (3) symbolic structures into meaningful experiences; in this process, there are layers of materials, expression, form, and value. "An education in Music presumes that students can access all three metaphorical processes. Only in this way are we able to glimpse what I call 'intermediate space" (SWANWICK, 2003, p. 57, our translation).

Such a transformation process can be accomplished through performance, composition, or music appreciation. Swanwick (2003) criticizes traditional music education for not caring about these levels of transformation, for not caring about dynamics, phrasing, and other nuances.

As an example of the three stages of metaphorical processes: (1) isolated sounds can be understood just like isolated images, that from certain experiences, the receiver of these can capture similar patterns and build a set of images - or "melodies"; (2) melodies can take more elaborate forms after compositions are made, or be demonstrated through performance, or even the listener can identify which elements allowed them to identify different forms; (3) the significant experience occurs when the student associates the aesthetic pleasure to their everyday life, preparing the student for the autonomy defended by Paulo Freire in his pedagogy of autonomy.

Thus, Music Education must be guided by three principles: (1) consider music as discourse; (2) consider the students' musical discourse; and (3) emphasize the fluency[3]. Thus, we propose a distance music education that can work these principles (SWANWICK, 2003). From the first principle, to consider music as discourse, we understand that music appreciation is not just auditory training but rather the metaphorical experience that proceeds to rationalize these elements. Swanwick (2003) states that the musical "elements" - pitch, duration, timbre, and intensity - are sound materials and do not involve us in any of the metaphorical levels, and learning through music based only on this knowledge - as traditionally done - ends up not leading to a metaphorical experience.

| **8**

> The first of our principles, consideration for music, is a risk only if we forget that microtechnology is a tool and not an end. It is very easy to progressively mechanize the human imagination out of existence and use pre-recorded loops and patterns, which, while they may serve the purposes of certain instantaneous species of music-making, certainly do not develop expressive scope or structural sensibility. But the computer can also stimulate compositional processes and facilitate notation and editing. It can also translate visual metaphors of music into sound (SWANWICK, 2003, p. 115, our translation).

It is worth considering that current technology can already, through some applications such as Melodyne Studio, modify the pitch, duration, and intensity of pre-recorded loops or even audio-recorded phrases that are a common practice for DJs and electronic music producers, thus freely manipulating the sounds and creating new musical meanings. Therefore, EaD students can tune their own voices artificially in a solfeggio.

Gohn (2011) warns that learning auditory training requires continuous and exhaustively repeated exercises so that the differences between the sounds studied are assimilated and

---

[3] In the original language, the term is fluency first and last, meaning "fundamentally" or "the most important fact".

internalized[4]. Given that a face-to-face situation commonly occurs with the use of the piano, according to the author, with new technologies, the software can reproduce and correct errors relentlessly without the assistance of another individual.

The second principle of considering the musical discourse of the students means that a Music class should always be a dialogue, that is, the teacher should not impose music pre-established in a program, just as knowledge should not come only from the student - as it occurs in mistaken readings of student-centered education. Thus, there is no exchange of experiences or cultural enrichment. On the contrary, it may only reproduce what the cultural industry imposes without presenting other cultures and sounds that the student could not get through traditional media or family life.

In this sense, Swanwick (2003) points out that each curricular activity offers different possibilities for decision-making, a specific facet of student autonomy, such as playing in small groups, learning an instrument collectively, or composing in small groups.

> Também precisamos explorar as possibilidades da tecnologia da informação. Podemos ver essa contribuição em duas grandes áreas: uma é a extensão do aprendizado individual, o qual ressoa com o segundo princípio – o da autonomia do aluno. A segunda contribuição da tecnologia da informação é a extensão dos recursos instrumentais de forma radical, dando-nos acompanhamentos instantâneos, muitos efeitos tonais inimagináveis, combinações de sons, o uso de computadores para apoiar o processo de composição musical e performance. E isso tudo pode ser conseguido sem que o material instrumental precise existir em tempo real (SWANWICK, 2003, p. 115, our translation).

Swanwick (2003) states that composition is an educational necessity, not an optional activity to be developed when time permits because it leads the student to bring in his ideas into the microculture of the classroom, merging Music Education with "outside music" and allowing him to make decisions; therefore, it provides more openness for cultural choice.

The third principle, emphasizing fluency, concerns fluent musical discourse as a priority.

> Musical fluency precedes reading and writing music. It is precisely fluency, the aural ability to imagine music coupled with the ability to control an instrument (or the voice), that characterizes jazz, Indian music, rock music, the music of the steel pans [of the Caribbean], a great deal of computer music, and folk music in any country in the world. Notation of any kind has limited or no value for performers of the Korean sanjo, the Texas-Mexican accordion

---

[4] Music Perception and auditory training are terms commonly used as synonyms, to the point that an undergraduate student may not be able to differentiate between them since the practice of Music Perception may be restricted entirely to auditory training from basic to advanced level.

ensemble, salsa, or Brazilian capoeira. These musicians have much to teach about the virtues of playing "by ear" and about the possibilities of extended memory and collective improvisation (SWANWICK, 2003, p. 69, our translation).

Pereira (2014) reports in his research that, during the realization of an assignment for the discipline of Music Perception, in which he should record a solfeggio and accompany himself on a harmonic instrument using a sequencer, the author caught himself recording isolated excerpts in several takes of recordings to get a better result, generating a result that would not be the same in a face-to-face class, thus giving more emphasis to the product than to the process and interrupting the fluency, generating discontinuity of genuinely musical discourse.

> All this is very different from using the computer only in a notation-driven composition - a form of sequenced instruction that the computer does very well. This appears in the principle of fluency and the first principle, the consideration of music as discourse. Being able to say in music only what we can write in notation negates the students' expressiveness and musical discourse. We should look for technological progress to free teachers and students from burdensome work, not to increase it. People might then be freer to produce and respond to live music, which would then promote interest and conviviality while refining sensitivity and broadening the mind (SWANWICK, 2003, p. 115, our translation).

| 10

By extension, any asynchronous performance recorded on video or audio can suffer some editing that implies an artificial result that would not be possible in a face-to-face meeting or a synchronous moment of the course involving audio or video communication. For audio, some techniques allow editing so that the final product has as few errors as possible for the listener, to the point that it is not perceptible to identify that the audio was edited. In this case, the distance instructor responsible for correcting the task needs more tools to know how the sent product was processed. However, the use of synchronous communication minimizes this possibility.

The great challenge in using digital technologies in music learning is finding methodologies consistent with the profile of the music teacher of the 21st century. In the case of distance education, it is fundamental to think about the role of this teacher. The learners, whether students of a distance or face-to-face higher education course or other students seek information in virtual communities; sometimes, they can obtain satisfactory information from the learners who participate in virtual forums (PEREIRA, 2017). Thus, it is important to pay attention to the role of the online teacher in the midst of Music courses.

Pallof and Pratt (2013) point out changes for the online instructor: (1) the balance of power: the instructor needs to act as a facilitator of learning, while students should take charge of the learning process; (2) the role of content: making resources available, rather than expository instruction; (3) the role of the instructor: guide students by establishing online presence; (4) the responsibility for learning needs: students need to take greater responsibility for their learning process; (5) the purpose and process of testing and assessment: use of self-assessment and practical application activities.

While we can see an urgent shift in educational paradigms to put the focus on student-centered meaningful learning, the premises pointed out by Palloff and Pratt (2013) should be questioned for pointing too much responsibility for learning on the student. This factor promotes a way of thinking and acting that exempts the teacher from his responsibilities and, consequently, puts the decision-making power in the student's hands - in the neoliberal molds, the client is always right. If the student fails, meritocracy justifies that he did not try hard enough, exempting the teacher from this process. The authors also point to the term instructor, which induces the one who holds the information to the student, who only has the duty to absorb it.

The information contained in the traditional didactic material transposed to non-interactive digital media, and the tutor responsible only for answering questions when sought by the student - reactive tutoring - ends up subverting the student's autonomy to abandonment. In our opinion, the solution to this dichotomy is the development of an educational project that contemplates a socio-interactionist multimedia material that allows the student to gradually acquire autonomy, allied to a course with professors and tutors that dominate the distance learning methodology and a team prepared to support this student.

The excess of tasks in DE courses and the obligation to fulfill them in a predetermined timeframe, such as forums with non-flexible duration, can cause a shallow experience, not allowing the student to enjoy the experience that leads to a metaphorical transformation or imaginative criticism (SWANWICK, 2003).

University 42, located in Paris and Silicon Valley, is an entrepreneur's initiative that has been offering bachelor's degree programs with a certificate since 2013 without any professors and books during the entire college course[5]. Although a diploma is not issued, such a certificate is accepted in some companies. The modality adopted by the institution was face-to-face.

We notice a certain intention in DE to use automated feedback to replace humans through multiple-choice forms, which greatly harms learning. "Attention should also be

| **11**

---

[5] Available at: https://www.42.us.org/. Access: 8 Jan. 2017.

directed to automated systems, which will most likely be employed by educational managers, whenever possible, to cut costs and expand the number of students served" (GOHN, 2009, p. 207, our translation). Such processes are geared toward adding information and do not induce metaphorical transformation.

A virtual forum that plans to be social interactionist should start with a provocative question from the tutor regarding the text and correlate it to the student's life experience. According to Pallof and Pratt (2013), an online course that truly cares about the student needs to understand who they are, how they learn, and what they need so that teachers can assist them in their learning, how to encourage them in their development as reflective agents, how to develop courses and programs while paying attention to continuous quality improvement, be aware of the issues that affect their lives and their learning, and find a way to involve them in course design and evaluation.

For this, there must be tools to be used in online Music courses centered on the student, therefore, ideas to work composition and improvisation online. Based on Swanwick, Silva (2005) proposes composition as a transversal tool of regular practice connected to the other areas of music present in the curricula at the higher level of music instead of an undergraduate course isolated from the others. By extension, with collaborative online tools, the composition can also be the focus of an EaD curriculum.

| 12

More than composition, Swanwick (2014) proposes imaginative criticism as the task of formal education, which is not on a theoretical plane but occurs in making decisions or in a conversation about music, bringing new ideas to consciousness, asking questions, and experimenting in performances and compositions.

> Music criticism at any level is crucial to the process of formal education. Imaginative criticism is the center and distinguishing characteristic of elementary, secondary, and college courses. Such critical activity need not be on a highly theoretical plane but occur every time decisions are made or music is reflected upon or talked about (SWANWICK, 2014, p. 150, our translation).

Swanwick classifies a "facilitator of individual discovery" or "tutor" (SWANWICK, 2014, p. 157, our translation) as a teacher who does individualized work arising from a musical encounter as opposed to instruction. For the author, these musical encounters, characteristic of non-formal education and formal music education in schools and colleges, are mandatorily followed by evaluation and critique of becoming explicit. In this sense, especially in music and the arts, there is the issue of the tacit dimension of knowledge, in which a student may have

difficulty expressing himself verbally and especially in writing - as it needs to be in virtual learning environments (VLEs) of online music courses.

> Presumably, saying can include showing; not all communication will happen by the spoken word. When students compose and perform, they will show what they know even if they are not telling us. The problems really arise when people are as an audience in relation to the music [...]. The need for critical conversation is especially apparent when we are trying to share an experience as a listener with others or when we are helping to develop a musical sensibility and insight (SWANWICK, 2014, p. 167-168, our translation).

Aspectos tecnológicos

While classes in seminar format are quite common in both basic and higher education, whether in person or at a distance, the need for each individual to express their opinion at all costs is a phenomenon that occurs today. Bondía (2002) questions how we are forced first to inform ourselves and then forced to have an opinion as a synonym for the significant dimension of learning, placing information as something objective to be conquered, and opinion, the shallow and spontaneous subjectivity of being in favor or against, since the lived experience in contemporaneity is increasingly rare due to lack of time. Therefore,

| 13

> Information is not experience. Moreover, information leaves no room for experience, it is almost the opposite of experience, almost an anti-experience. This is why the contemporary emphasis on information, on being informed, and all the rhetoric aimed at constituting us as informing and informed subjects; information does nothing but cancel our possibilities of experience. The subject of information knows many things, and spends his time searching for information, what worries him most is not having enough information; he knows more and more, and he is better informed every time, but with this obsession for information and knowledge (but knowledge not in the sense of "wisdom", but in the sense of "being informed"), what he achieves is that nothing happens to him. The first thing about the experience is that it is necessary to separate it from the information. Knowing from experience is necessary to separate it from knowing things, just as you know when you have information about something when you are informed. It is the language itself that gives us this possibility. After attending a class or a conference, after reading a book or information, after taking a trip or visiting a school, we can say that we know things we didn't know before, that we have more information about something; but, at the same time, we can also say that nothing happened to us, that nothing touched us, that with all that we have learned nothing happened to us or happened to us (BONDÍA, 2002, p. 21-22, our translation).

When thinking of distance learning of music that considers the musical discourse of students, the technological structure needs to have interactive synchronous or asynchronous tools in texts, audios, or videos, depending on the practical or theoretical disciplines and focused

on the student. In this sense, one-to-many conferencing would not achieve this goal because it is not student-focused; many-to-many communication is needed, as in Google Meets, Microsoft Teams, and Zoom applications for videos, chats, or forums for texts.

Digital technologies offer a favorable environment for learning music collaboratively and creatively. However, for multicultural Music Education to achieve its goals, it is necessary that "these 'sets of sounds,' consisting of intervals, scales, ragas, chords, series of notes, ostinatos, basses, etc. They would be explored and transformed interculturally through composition, listening, and performance" (SWANWICK, 2014, p. 151, our translation).

The first form of communicative technology was spelling with melodic precision, which initially occurred with cantochon in the sixth century and was later perfected by Guido D'Arezzo in the ninth century[6], with the inclusion of rhythmic precision. From that moment on, musical language became a crucial communicational process among musicians, which involved writing and reading[7].

Musical notation is a form of language that has signed, formed by a signifier and a meaning. Knowing how to write and read language allows communication between people since the subsequent enunciation can be, in a certain way, standardized.

This new technology changed how music was created in the following centuries, especially in European concert music. On other continents and in popular music, the predominance of oral transmission remained with alternative scripts to the score - such as tablature or alphanumeric ciphers, especially for stringed instruments.

| **14**

With the expansion of the printing press by Gutenberg in the 15th century, sheet music was commercialized via publishers, which further contributed to the fact that learning to read sheet music became fundamental, changing the way of learning music. Today, it is possible to access digitized original manuscripts on sites such as IMSLP[8]. Later, with the development of the phonograph by Thomas Edison in 1877, it became possible to record music on physical media. Thus, the possibility of playing the same piece repeatedly made it easier for a learner to "take it by ear" and then dispense with the score. The possibility of recording and manipulating sounds also gives rise to new ways of making music, such as concrete music. Once again the way of making music is changed. Currently, there are already applications that propose to locate the chords of a song from the original recording, such as the smartphone application MyChord

---

[6] The alternative spellings that occurred before D'Arezzo did not give melodic and rhythmic precision.
[7] The communication provides only the writing and reading stage without enunciation.
[8] Available at: https://www.imslp.org. Accessed: 12 Oct. 2020.

- although these are not so successful as to rule out the competence of a popular musician in "making music".

As technology advanced, electronic instruments and concert music - and later electronic popular music - also began to emerge. Recording techniques were improved, and with digital technologies came to the VSTs and VSTis capable of replacing machines to the point where a computer could replace the studios[9]. The home studios take away the hegemony of the big studios, the record labels, and the music distribution labels, which start to be distributed on the internet as MP3 files.

With MIDI[10] technology, various musical instruments can communicate via this protocol. The Internet allows collective composition and free manipulation of pitch, duration, timbre, and intensity. Re-composition and redistribution via the Internet are possible in a dialectical process that Levy (1999) called techno[11] music.

Such technological innovations again interfere with learning music. For many musical genres, especially electronic instruments, knowing how to manipulate certain technologies becomes a condition for being a music interpreter or producer. This fact may end up not being considered in teacher training, since the bachelor's degrees offered in the same physical space as the Music courses - and with common disciplines - do not require such competencies.

As composition is one of the central elements of music education, as Silva (2005) and Swanwick (2003) point out, teaching music through digital technologies at the UAB seems a perfect environment to apply techno music since these courses work with asynchronous communication. Thus, every activity that involves asynchronous communication features needs to be explored in distance music courses. And one of the main resources is to work on collective composition.

Technological resources for working on composition are abundant with Web 2. 0, through asynchronous online DAW, such as Soundation[12], online score editor, such as Noteflight[13], or specific sites for collaborative composition between musicians around the world, such as Kompoz[14] or the free application for cell phone or computer Bandlab[15] – which

| **15**

---

[9] VST = Virtual Studio Technology; VSTi = Virtual Studio Technology Instruments - the virtual instruments.
[10] Musical Instruments Digital Interface (MIDI) is a communication protocol between electronic or acoustic musical instruments and others or computers that allows free manipulation of all recorded MIDI events.
[11] Techno music is a concept created by Pierre Levy to represent a constant re-composition to the point of losing the notion of authorship. The author does not mention techno music, a subgenre of popular electronic music.
[12] Available at: https://soundation.com. Accessed : 17 Oct. 2020.
[13] Available at: https://www.noteflight.com/login. Accessed on: 17 Oct. 2020.
[14] Available at: http://www.kompoz.com/music/home. Accessed : 17 Oct. 2020.
[15] Available at: https://www.bandlab.com. Accessed : 17 Oct. 2020.

has an educational[16] version – via audio or even Bandhub[17], where a musician records a video (of their authorship or not), and other musicians create videos playing the same song. The result is a video of a song performed together on a screen divided among several musicians. I have not witnessed using any of these resources during my experience as a tutor at UnB.

With the advent of computers, audio editing software such as Sonar and Pro Tools, and MIDI scores editors such as Finale and Sibelius have revolutionized how these tasks are performed. This software is paid for and in English. Later, free, open-source applications appeared on several platforms - Windows, Mac, and Linux - in Portuguese, such as Musescore and Audacity. We are now transitioning to a need for online applications, such as the score editor Noteflight or the online DAW Bandlab or Soundation, as well as versions of these same online applications for tablets and smartphones, covering the Android, iPhone OS, and Windows Phones operating systems. However, part of these existing online applications for music are paid and in English, besides not having an Android version, which points out that there is still a way to go for this transition to occur for public distance education, which needs free applications, in Portuguese and with integration to mobile devices.

Pereira (2014) states that a student of a music course at UAB used several offline software external to Moodle, being necessary to convert the files generated according to standards specified by the courses. This task is complex and demands much time, plus the time needed to upload these files to the VLE - depending on the internet speed of each person's home. These files are often sent to the tutor as an individual task, without participation and viewing by other students, which does not characterize a social interactionist interaction.

Gohn (2009) classifies the communicational aspects of distance music education into five areas: (1) music history, which can depend on written communication and reading of texts or listening to music pieces; (2) music appreciation, which depends on listening through directed listening focused on specific aspects or through videos, in which there is no control of the sound quality of the device; (3) auditory training and harmony study, in which applications can reproduce and correct tirelessly and without human interaction; (4) composition, which can be done collaboratively with Web 2. 0 applications or with audio editing software with the easy interface; (5) performance, which relies on video recording or videoconferencing; both require appropriate imaging and sound capture for each type of instrument, and tutor feedback can be

| **16**

---

16 Available at: https://edu.bandlab.com. Access: 17 Oct. 2020.
17 Available at: https://bandhub.com. Access: 17 Oct. 2020.

difficult to limit to words, as he may need to demonstrate movements to correct instrument posture and technique.

However, once in distance courses, such instruments are offered asynchronously, the solution is to post videos in virtual forums for the same class of about 20 students. This fact induces the occurrence of the inevitability of breaking the paradigm of the conservative model of synchronous and individual classes. On the other hand, it expresses the need for more attention to the specificities of a Music course. In this case, serving the largest amount of students asynchronously is a course solution through a solution of urgency linked to the bureaucratization and standardization of distance learning, which does not necessarily characterize a new teaching methodology.

The text shows how the student communicates with the distance tutor and teachers through asynchronous communication in Moodle. With this, there may be a challenge for students to express their doubts in practical and theoretical-practical courses only with text since, for communication to occur, they would need sound and visual elements. Videoconferencing would be these courses' most "natural" form of communication.

It would then be necessary to build a VLE that meets the specificities of music learning, such as the integration of audio and video, score writing and contemporary notation, MIDI and audio manipulation, among others, mixing asynchronous elements with synchronous practical classes and interactive didactic material designed for distance learning courses without requiring external applications to the VLE. So far, only adaptations are being made.

Instead of this practice, distance learning courses may digitize books or scientific articles and leave the forum for debate with reactive tutoring, which makes this material "repeat some common errors in face-to-face teaching - mechanical use, detachment from reality, mechanical inculcation of content and ideologies, inaccessibility, reinforcement of the loss of motivation" (VILLARDI; OLIVEIRA, 2005, p. 104).

> While in the face-to-face classroom, the teacher has control over the ways in which the didactic material is used - and the actions are reading, writing, underlining, completing, responding, copying, and debating, for example - in Distance Education, the student uses this material independently, with actions that escape the teacher's domain - and perhaps this is why the issue of learning assessment becomes so complex in this mode of education.
> The problem is that, in DE, there has not yet been enough time to develop a methodological field that is sufficiently broad, tested, and evaluated to provide the necessary support for the development of teaching materials to be used (VILLARDI; OLIVEIRA, 2005, p. 93, our translation).

| 17

Communicational competence on the Internet has always been considered linguistic communication - texts in emails, blogs, and wikis. With Web 2.0, the user becomes a creator of multimedia - audio, video, and interactive content - through a friendly interface. The text can have hypertext or collaborative writing. Currently, sites work with collaborative audio and video editing and production. In addition, video communication revisits non-verbal and paralinguistic communication, helping to approximate proxemic communication.

The standardization of solutions for DE concentrated in one sector of the university, such as the fact that all courses must be asynchronous and for the same class, and the management of this process does not cover the specificities of music[18] courses. Moreover, the difficulty of a specific integrated system for Music and interactive multimedia materials are technological factors that limit the execution of methodologies, needing help to break the important paradigms for the characterization of distance education.

Final considerations

I propose some reflections about what was previously exposed.

Open and multicultural education are methodological factors in distance education and are mediated by digital technologies. Has this been implemented in EaD courses in music education or even in remote teaching?

Swanwick (2003) argues that music as an intermediary space cannot replace global tourism through CDs. Techno music (LEVY, 1999) proposes a form of recomposition and redistribution of music through the internet. Is it up to educational institutions to re-signify this intermediary space, aiming at new constructions and not mere appreciations without aura?

The focus on musical technology proposed by Schramm (2009) and Rudolph (1996) requires the student to master programming in technology, which requires a technological education. However, only some teachers have mastered this technology, making the construction of a social interactionist technological material advocated by Villardi and Oliveira (2005) unfeasible. How to accomplish this technological education in Brazil on a large scale beyond the technological centers?

The freely available and currently open technological aspects still need to allow integration of the generic VLE tools - such as web conferences or forums - to manipulate audio

---

[18] Although this is a problem in face-to-face teaching and distance learning, we can observe the musical instrument or singing courses in the bachelor's degrees as a de-standardized solution since the classes are for one student per class, respecting the specificity of a conservatory practice reproduced in the higher education courses.

or MIDI elements in digital audio workstation (DAW) application and score editor in an online and integrated way. At the same time, public universities do not offer higher education courses in Music that consider the specificities of this area. Without these important factors, how can we think of a paradigm shift for music education mediated by digital technologies?

Such questions are provocations that aim to arouse reflections about musical technology and its methodology in the distance, remote or face-to-face teaching mediated by technologies.

REFERENCES

BONDÍA, J. L. Notas sobre a experiência e o saber da experiência. **Revista Brasileira de Educação**, n. 19, p. 20-28, jan./abr. 2002. Available at: http://www.scielo.br/pdf/rbedu/n19/n19a02.pdf. Access: 3 July 2021.

FREIRE, P. **A importância do ato de ler em três artigos que se completam**. São Paulo: Cortez, 1989.

GOHN, D. M. **Educação musical a distância**: Propostas para o ensino e a aprendizagem de percussão. 2009. 190f. Tese (Doutorado em Ciências da Comunicação) – Programa de Pós-Graduação em Ciências da Comunicação, Universidade de São Paulo, São Paulo, 2009.

GOHN, D. M. **Educação musical a distância**: Abordagens e experiências. São Paulo: Cortez, 2011.

| 19

LEVY, P. **Cibercultura**. São Paulo: Ed. 34, 1999.

NUNES, H. S. Construção de conhecimento e identidade profissional. In: NUNES, H. S. (org.). **EaD na formação de professores de Música**: Fundamentos e prospecções. v. 1. Tubarão, SC: Copiart, 2012.

PALLOFF, R. M.; PRATT, K. **O instrutor online**: Estratégias para a excelência profissional. Porto Alegre: Penso, 2013.

PEREIRA, F. L. **A aprendizagem de música a distância**: Relatos de experiência discente. Curitiba, PR: CRV, 2014.

PEREIRA, F. L. **Aprendizagem informal de Harmonia através da internet**: Uma netnografia. Saarbrücken: Omniscriptum, 2017.

PEREIRA, F. L. *et al*. Políticas públicas em educação aberta e a distância: Uma abordagem em nível superior no Brasil. **Crítica Educativa**, v. 2, n. 1, p. 160–177, 2016. Available at: https://www.criticaeducativa.ufscar.br/index.php/criticaeducativa/article/view/12. Access: 05 Mar. 2022.

PEREIRA, F. L. **Licenciaturas em Música a distância**: um estudo dos cursos da Universidade Aberta do Brasil. 2019. 288 f. Tese (Doutorado em Educação) – Universidade do Estado do Rio de Janeiro, Rio de Janeiro, 2019.

PEREIRA, M. V. O Currículo das Licenciaturas em Música: Compreendendo o habitus conservatorial como ideologia incorporada. **Revista do Programa de Pós-Gradução em Artes**, v. 1, n. 1, p. 109-123, mar. 2015. Available at: https://periodicos.ufpa.br/index.php/ppgartes/article/view/2102. Access: 05 Mar. 2022.

RUDOLPH, T. E. **Teaching Music with technology**. Chicago: Gia, 1996.

SCHRAMM, R. Tecnologias aplicadas a educação musical. **Revista Novas Tecnologias da Educação**, Porto Alegre, v. 7, n. 2, out. 2009. Available at: https://seer.ufrgs.br/renote/article/view/13700/7751. Access: 14 June 2021.

SILVA, J. A. S. **A composição como prática regular em cursos de Música**. 421 f. Tese (Doutorado em Música) – Programa de Pós-Graduação em Música – Universidade Federal do Estado do Rio de Janeiro, Rio de Janeiro, 2005.

SWANWICK, K. **Ensinando música musicalmente**. São Paulo: Moderna, 2003.

SWANWICK, K. **Música, mente e educação**. Belo Horizonte: Autêntica, 2014.

VILLARDI, R.; OLIVEIRA, E. G. **Tecnologia na educação**: Uma perspectiva sociointeracionista. Rio de Janeiro: Dunya, 2005.

| 20

SOBRE OS AUTORES

Fabiano Lemos PEREIRA

Federal Center for Technological Education Celso Suckow da Fonseca (CEFET-RJ), Itaguaí – RJ – Brasil. Professor EBTT D-I, Coordinator of the Mechanical Technician Course. Doctoral degree in Public Policies and Human Formation (UERJ).

| **21**

Processing and publication by the Editora Ibero-Americana de Educação.

Reviewing, formatting, standardization and translation.