The contribution of musical education textbooks to the use of ICTs

Contribuição dos manuais de educação musical para a utilização das TIC

Contribución de los libros de texto de educación musical al uso de las TIC

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ABSTRACT
Digital technology as an everyday component should be more valued as classroom resource. The aim of this study is to find out if the textbooks of music education, for the 3rd cycle of Portuguese basic education, provide materials and/or alternatives for the use of ICTs. Through a qualitative methodology, we used the technique of document analysis to examine the textbooks. The findings indicate that the textbooks do not promote the use of ICTs through complementary activities and materials, and have activities that do not implicate an effective usage of ICTs.

Keywords: ICT, textbooks, music education, basic education.

RESUMO
A tecnologia digital como componente quotidiana deveria ser mais valorizada enquanto recurso de aula. O objetivo deste estudo é descobrir se os manuais escolares de Educação Musical, no 3º ciclo do ensino básico português, proporcionam materiais e/ ou alternativas para o uso das TIC. Através de uma metodologia qualitativa realizou-se uma análise de documentos para examinar os manuais escolares. As conclusões indicam que o manual escolar não promove o uso das TIC através das atividades e dos materiais complementares que inclui; e apresentam atividades que não implicam uma utilização efetiva das TIC.

Palavras-chave: TIC, manuais escolares, educação musical, ensino básico.

RESUMEN
La tecnología digital como componente cotidiano debería estar más valorado como recurso de aula. El objetivo de este estudio es descubrir si los libros de texto de educación musical en el tercer ciclo de la educación básica portuguesa proporcionan materiales o alternativas para el uso de las TIC. En este estudio cualitativo se realizó un análisis de documentos para examinar los libros de texto. Las conclusiones indican que el libro de texto no promueve el uso de las TIC a través de las actividades y materiales complementarios incluidos, y que presentan actividades que no implican una utilización efectiva de las TIC.

Palabras clave: TIC, libros de texto, educación musical, educación básica.

INTRODUCTION

The subject of this work fits in the line of research on the use of digital resources inside educational contexts, deepening concerns associated with Music education in Portugal. In this country, after the curricular revision based on Decree-Law (6/2001), music began to perform an unequivocal role in the school structure and development, jointly with all other learning and in parallel with the several subjects (Mota, 2014, p. 44). In front of the scarcity of research dealing with the music area linked to technologies (Barroso & Cabero, 2010) it is a matter of interest to add a study about them. However, it should be noted that, as in any educational context, also in Music education the information and communication technologies (ICT) are gaining ground and featuring increasingly more interest (Torres Otero, 2011). Particularly by their potential for the development of digital competences and their application to musical language (Coutinho & Fernandes, 2014). In fact, there are experiences that demonstrate the success of a project for Music education online, developed in a context of combined learning, to provide musical resources of high-quality (Crawford, 2016).

Currently, students and teachers have access to a multitude of information sources through the existing worldwide interconnection, obtaining different contents from a variety of media supports (Order, 2015). The Internet, personal computers, television, mobile, tablet, newspapers, magazines, textbooks, enable developing cognitive and affective abilities, expanding knowledge and communication. Following this trend, also the exponential development of ICT has increased the students' skills to learn music. We should remember that children when working with contents developed through ICT, acquire significantly greater skills in the auditory field, vocal and instrumental expression and musical language, movement and dance (Hernandez-Bravo, Cardona-Moltó & Hernández-Bravo, 2016).

The widespread use of printed textbooks in the context of Music education gives priority to the acquisition of content based on a traditional methodology. Therefore, there is a need for teachers' reflection on the use of educational resources and the criteria applied for its elaboration and selection (Duarte, 2012), in such a way to allow not only thinking about the media but also about the educational action or the promotion of learning. Another useful starting point to elaborate further on this topic was suggested by Ashworth (2012) going through the analysis of the entry 'electronic music' of Wikipedia, which provides an overview of the development and use of diverse genres and musical styles that apply to the learning of music through technologies.

Although there is, in most subjects, preferential treatment for the use of technological resources, the Arts and particularly the music often exclude the access to ICT (Crawford, 2009). However, the use and function of the Arts in education and human development are crucial and are the reason to strengthen the Art-Technology binomial relationship (Giráldez, 2010). In this line, it is interesting promoting multiple links to enable the timely fusion of Technology and Art, because they mutually need each other since the lack of technological development reduces the baggage of digital resources susceptible of educational use: photography, cinema, electronic instruments, synthesizers, digital songs, scores, and similar. This is an era branded by technological modernity, music, and images, where musical and audiovisual productions are easily accessible (Yarbro, McKnight, Elliott, Kurz & Wardlow, 2016). From this availability, students know how to make videos and animations, create blogs and instant messaging networks, have access to music, compose, record and share their musical compositions.

The musical preferences of the students, as fans, are broadcasted in music websites which act as spaces to exercise '*digital habits*' by this public, being the way through which attitudes to ICT are objectified and became an integral part of the cultural values production and circulation (Arriagada, 2015). As said by Cuesta (2012), their musical preferences are expressed in social networks and come from a direct contact with the music they hear indiscriminately, so this aspect should not be neglected in the production and creation of educational resources.

LITERATURE REVIEW

The use of ICT can help to train more autonomous, responsible, active and critic people, with the ability to adjusting to permanent changes and facing new challenges. Consequently, it is important that

textbooks enable the technical examination of their content. However, although ICTs are contributing to the improvement of educational quality, they are not used without dilemmas and concerns (Fainholc, 2010), because digital resources may be attractive, motivating and diverse (Ricoy & Feliz, 2016; Wise, Greenwood & Davis, 2011) and frustrating at the same time. Although the use of ICTs involves disadvantages, it is not possible to ignore their central role in the production of knowledge. Also, they allow the development of the constructivist pedagogical model (Gérard, 2008), through which the teacher can facilitate the content to construct knowledge, according to the learning enabled by the open access to information, in a context of sustained support.

Digital technology has a place of preference in education, being the Internet the center of the new socio-technological paradigm; moreover, it is a resource consumed on a daily basis, being of extremely important to the way of interacting, working and communicating. Also, the possibilities that offer Music education through ICT are very large and diversified, as it provides a vast, alternative and creative language (Moya, Hernández, Hernández & Cózar, 2014). Digital learning inside the area of Music education can be infinite as the content, and the potentiality of the Internet are nearly unlimited.

Regardless of how people come into contact with the music, ICT ease the way to get content, for example, from a sound file. In fact, the musical experience using technology can vary from the access to an online newspaper article to creating MIDI files, from preparing or inquiring for a score or complementary data to produce material. It is also useful to design and show to students, pictures of musical instruments from other cultures, to download software, to obtain recordings of musical works as well as to find and share teaching materials (Nart, 2016).

Social and technological changes of recent years have led to a large number of people had quick and easy access to any music, provided by extension, a huge variety of situations which depend on what they are listening. From advertising and marketing industry, music has become a cult object with dissimilar symbologies. Is searching for these symbols identification that students immerse themselves in the amalgam of

hearings available, building his own musical experience (which together with culture, environment, personal and family past and education, influence deeply the musical learning).

As for the teachers, it is essential not to ignore the fact that each student has a musical heritage and a musical experience built throughout his/her life and age influences it, as well as social position, his/her group of friends and, more essentially, by the media. Nevertheless, teachers cannot be asked to be experts in all the music of the world, especially in those at the top, the most sold, or the more consumed. We must consider that the lack of confidence of teachers in new technologies may delay or not to favor their effective application in the music teaching. So, it is important

> To disseminate among teachers the knowledge of the countless possibilities offered by music and ICT technologies, and put at their disposal new tools will help dispel fears and doubts about the final implementation of new technologies in music teaching. (Román, Díez, Pavón, Márquez & Sempere, 2011, pp. 249-250).

The changes in the students and teachers life as a result of the technological emergence and the accessibility to digital contents are a reality. Therefore, it is necessary that teachers develop best practices with children associated with the use of digital devices (Ricoy & Valente, 2016; Wise, Greenwood & Davis, 2011) and contribute to strategies to change the music learning through ICT. In this trend, it is important to students to learn musical composition with graphic support or through a collaborative online space (Ruthmann, 2010; Savage, 2014). Teachers also should describe and analyze creative music practices and how these have changed the classroom (Burnard, 2012). Creativity is essential both for the teachers' work and for learning in Music education.

It should be said that a favorable context for successful learning and teaching needs a sustainable financing for the inclusion of digital devices, with appropriate educational policies and practices. Also, it requires educators training, protects intellectual property and rights of re-use. It also becomes necessary to have leaders for the purchase of new technological equipment, to repair, for software updates and to access to digital sources (Fletcher, Schaffhauser & Levin, 2012). Learn something as complex as the music using the technology requires

incorporating a multitude of rich experiences. In this sense, the young generation has at their disposal digital devices that allow them greater contact with the music and ICT, an aspect which is modifying their interests. We must bear in mind that some songs that each one has on his/her, hard disk assume a strong influence (Bahanovich & Collopy, 2009). The teenagers' access to music is more facilitated by digital resources and the exponential development that they have increased their musical lineage significantly. Computer applications like GarageBand from Apple, Sony Acid Music Studio or Music Producer are some of the examples available for children to share content and socialize more. An interesting model for these ages is the application's Music Producer, where the songs created can be recorded and stored in different formats, sharing them later with their friend networks, family, and other users through the My Space on the Internet.

The symbiotic relationship between art and ICT is, each time, more relevance to the school where students and teachers have different roles to play. It is desirable for the student to be able to search and create, beyond the simple memorization with the who's usually familiar, being fundamental, among others, to help the teachers to promote better practices and for the adoption of new strategies in the handling of various teaching materials. It is therefore important to have teachers and counselor-style guide to the musical learning; as well as students active in the outline of their educational pathways, with the possibility of employing new tools of access to knowledge to become more reduced the digital divide between them. Also, educational resources, in particular, are required textbooks that allow and encourage educational innovation.

Given the significance of the digital tools, with the Internet, and the hegemony of the textbook, the central purpose of the study is to analyze the materials and possible suggestions that make use of ICT textbooks, Musical education of the third cycle of basic education Portuguese. In this way, it is realized as are enlisted students and teachers for the application. To enter in the pivotal goal were placed as follows:

• Identify in textbooks the activities that include the use of technology.

• Reveal whether books stimulate the use of ICT as part of the curricular content module on Music and technology

• Determine whether the textbooks use technologies with additional resources.

METHODOLOGY

This work is part of a broader research developed from a bi-methodological approach, which combined quantitative and qualitative methodologies, applying a triple perspective to collect the data (involving teachers, students, and analysis of documents). Logically, as it was not possible to include the whole research data in this document, the portion presented here fits the quantitative methodology, through narrative research with document analysis. In particular, this study is subordinate to the schools Musical Education textbooks of the 3rd grade of Primary Education, in marketing currently in Portugal.

CONTEXTUAL APPROACH

As an initial step to analyze the context, it is important to know that in Portugal there are four levels of education: Preschool (children from the age of three to five years); Elementary (children from six to fifteen years); Secondary (young people of 15 to 18 years); and Superior (young people of 18 years onwards). The curriculum of Elementary Portuguese education is divided into three cycles:

• 1st cycle, comprising a four years curriculum (1st, 2nd, 3rd, and 4th levels of schooling) with children aged from six to ten years old.

• 2nd cycle, comprising a two years curriculum (5th and 6th years of schooling) involving children between ten and twelve years old.

• 3rd cycle, which includes a three years curriculum (7th, 8th, and 9th years of schooling), covering children from twelve to fifteen years. This cycle is the focus of the present work.

The context of teaching structure of Portuguese Legislative Houses and the educational policy for textbooks changed over time. In this sense, also produced currency exchange as regards the typology of the textbooks in use and the selection process for schools and teachers. Currently, Law 47/2006 (August 28), Article N°3, define textbooks as a didactic-pedagogic resource in teaching and learning process, designed for a course or cycle, which features utility to support the student's work, and aims to contribute to the development of skills and to learn as set out in the national curriculum. On the other hand, the Portuguese Government has conducted, in recent years, great efforts to endow schools of technological tools to improve the learning process of children. In this sense, the law is explicit about the curricular guidelines specifically in Decree-Law 6/2001.

The ICT is essential, especially for the trans-disciplinary character in teaching, the relevance engaged in the training of students, and expectations for the future, predictably, in the professional projection. In this sense, the law Basis of the Educational System, of 30 August 2005, indicates that ICT is essential for: "*Prepare for employment* [...]; *Develop technical skills and technical knowledge*" (Law 49/2005, 2005, p. 5132). Also, about implementing digital equipment in schools, is essential to promote change and innovation, as the Portuguese Ministry of Education collects in the Decree-Law 379/2007, that the technological modernization of education is a strategic priority in preparing the new generation for the knowledge society. To this end, shall be considered in this Decree, three fundamental dimensions in schools: ICT infrastructure equipment; development of innovative ICT-based content with digital support; and purchase of training teachers in ICT. All of this assumes a gargantuan challenge by requiring grandiose investment and planning. In compliance with it, we should indicate that in last decade, and more precisely in the last five years (with the present world crisis), the Portuguese Government has made a great effort to provide basic education centers with computers for the implementation of ICT.

The music curriculum in Portugal, in Primary and Secondary education and in Specialized education (where integrated teaching and articulated teaching takes place that constitutes an interconnection between the two main branches) considers Music education an accessible discipline for most students and of multi/interdisciplinary character. In the case of Musical Education textbooks, of the 3rd cycle, the curricular contents can be worked transversally throughout the three years that comprise this stage of studies, without a predetermined order of the sequence of the modules to work. This logic of content chaining is dependent on what present the textbooks and what is selected by the teacher to develop in the context of the classroom. To better understand the context of Music education for the 3rd cycle, we point out that Artistic Education in Elementary education has four areas: Plastic Expression and Visual Education; Expression and Music education; Dramatic Expression/ Theater; and Physical-Motor Expression/ Dance. In the 3rd cycle, the four areas become optional, varying with the school offer and the student's choice, with Music education being one of these options about ICT, theater, cinema, among other options.

SAMPLE STUDIED

As advanced, the analysis of the textbooks developed in the present work focuses on the 3rd cycle of Primary school. In this study, we considered initially, the twelve textbooks edited from 2002 to 2016. In a later phase, focusing on practical issues, we focus on the four textbooks which are currently in the editorial market (Table 1), in Music education discipline of the 3rd cycle.

About the sample count, the four textbooks include a total of 498 pages. The following is a brief description of the main features of each textbook, which study sample comprising:

- Factory of Sounds 8/9 (M1) has a total of 96 pages (plus 32 specifics for teacher use). It has guidelines for its use and location with the numbering of its pages in the upper and the extreme. It presents as complementary material acetates and CD support.

- Music Menu (M2) has a total number of 111 pages (for teacher and student). It has back cover and soft back cover. It has index and spine with rings. However, it does not contain guidelines for using the textbook and the location of pages on the

Title of the textbook – Editor	Abbreviation*	School Level
Fábrica dos Sons 8/9 – Porto Editorial	M1	8th, 9th
Menu Musical (nova edição) – Porto Editorial	M2	7th, 8th, 9th
MP3 7/8 (nova edição) – Areal Editorial	M3	7th, 8th
MusicBox – Raiz Editorial	M4	7th, 8th, 9th

Table 1. Simple of studied textbooks

* To simplify the presentation of the sample, an abbreviation identify each textbook, according to

the sequence given by the data of editing.

Source: Own elaboration.

bottom and the end. As a complementary material, it has a book of detachable sheet music (this material is also available at a URL: www.profareal.pt), a music technology project and audio CDs.

- MP3 7/8 (M3) comprises a total of 144 pages. It has back cover and back cover, as well as a cover sheet. It has a list of auditions, another of videos, index, and spine glued, without rings. Contains guidelines for using the textbook and the location of pages on the bottom and the end. The supplementary material to the textbook is a CD-ROM.

- MusicBox (M4) contains a total of 144 pages. It has a front and back cover, as well as a cover sheet and glossary, as well as a position guide of the notes of the flute, another of auditions, index and spine without rings. The curriculum modules in this textbook are distributed evenly. It presents as complementary material a daily notebook (to the student) and five audio CDs (to the teacher).

The four textbooks in analysis reflect what is currently being "consumed" as the main support material for the pedagogical practice of Music education, both by students and teachers. The textbooks under study are those of the teachers since they incorporate the student textbook in its entirety and contemplate the aspects of interest simultaneously for the teacher but also for the student. These textbooks are for an age group of students that in Portugal varies between 12 and 15 years old.

DATA ANALYSIS

PTo approach the content analysis of the textbooks we used the program NVivo, version 10.0 and Excel. The NVivo software allowed us to analyze the activities for the use of technology included in the textbooks, as well as to discover the stimulation presented by the textbooks for the use of ICT. While the Excel program can determine the suggestions presented in the textbooks for the application of ICT, with the complementary resources that accompany them.

In the Nvivo software, to analyze the textual and iconic data, the categorization was defined starting from the "raw" content presented in the textbooks. For this, we used different nodes to represent the categories and subcategories. For data insertion into the program, it was necessary to produce a pdf file of the four textbooks under study initially, so that to analyze these documents could with an appropriate program to carry out qualitative analysis.

We should state that we analyzed the entire body of the four textbooks, covering in a total of 498 pages. To develop and delimit the categorization system with the corresponding subcategories, we included three essential aspects in the textbooks:

- Indicators of activities and its relation to the use of ICT.

- Presence in the textbooks of the module "Music and technologies".

- Type of technology that integrates the textbooks into its complementary resources.

The activity indicators, which present the main work proposals collected in the textbooks of Music education, were codified according to their typology and function in learning. The main centers of activity are reflected in the sub categories related to: listening, evaluation, composition, experimentation, improvisation, interpretation, research and other work proposals (such as the presentation of exercises, type of grouping that promote, Biographies, diverse curiosities, conceptual and intercultural explanations, study strategies, production of didactic material and evaluation of learning).

From the relation established between the pointers of activities identified in about Musical Education textbooks on the ICT had been created three focus of categories of analysis, relative to:

- Activities that appeal the use of the ICT as mere support, that is, where it does not have a true use of these concomitant ones to the use of the textbook.

- Proposals for activities that relate the necessity to make an effective use of the ICT.

- Activities without ICT (where reference for its use does not exist, not even as an auxiliary resource).

The previous nuclei materialized the three main categories (1st level), and the respective sub categories of each one of them, come off. It is worth mentioning that NVivo software, through the codification of each part of the textbook, allowed to know the frequencies assigned to the different subcategories, from the count that makes the program itself automatically. In a final phase, different steps were taken to extract the results and create registration tables in the Excel program to facilitate their understanding and interpretation, as reflected in the following section. The presentation of results was changed with Excel because the direct outputs of the NVivo also included other subcategories, not analyzed in this article. This procedure is valid since it does not change the results obtained.

The determination of the curricular modules present in each of the textbooks, as well as the accounting of the type of ICT that includes, among its complementary resources to the printed textbook (such as CD, DVD, CD-ROM, videos, among others), was Analyzed directly with the Excel program. For this, we used the same procedure as with the NVivo. In fact, we perform the content analysis for the categorization system derived from the textbooks data, and we determined the sum of frequency in the Excel spreadsheet.

RESULTS

The results obtained in agreement with the research goals previously are presented below. The category on indicators of activities was subdivided, in turn, into those that do not present a use of ICT in front of those that present. From this, we identified the activities that make an effective use of ICT and those that use them only as support (Figure 1).

The results obtained (Figure 2) show that different activities that collect the textbooks have some connection with ICT. Noting the number that uses
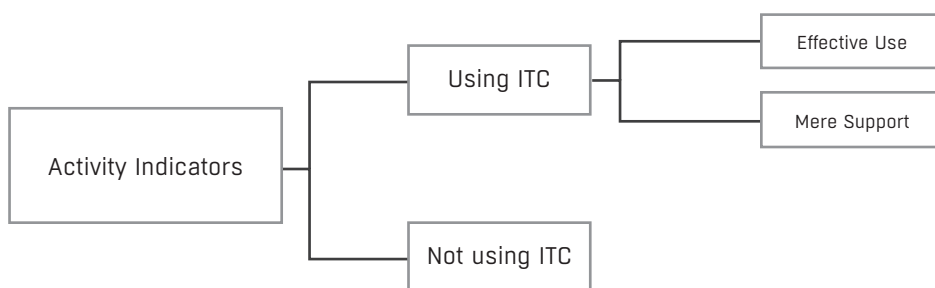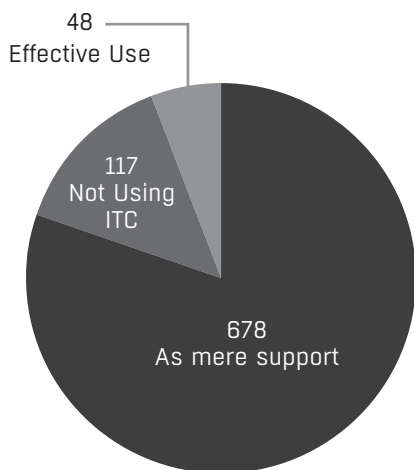

Figure 1. Categories identified in the activity indicators in the textbooks

Source: Own elaboration

Graphic 1. Textbooks activities typology concern to the ICTs

Source: Own elaboration

technology-related activities (f=678/843), it is also evident they are used as a mere support for the content. The most frequent example associated with ICT is the use of audio equipment for listening activities, with the following quotation from a light revealing this kind of praxis: "*Listen carefully to the original work of Bach and then each musical arrangement*" (M4, p .56). There are record activities of sound capture and image recording, although these are unusual. With less occurrence are the activities that have no direct relation with the ICT (f=117/843), and this includes all that implies the vocal, instrumental or movement practice. This text extract shows an example: "*Using the notes on the blues scale, perform your own improvisation. You will be able to play during the 24 bars marked for the purpose or to combine with another colleague, improvising each one for 12 bars*" (M4, p.76).

Activities which request effective use of ICT (f=48/843) receive very little attention. As a textual illustration in this respect, a text paragraph states the following: "*Produce an audio CD where you will record the selected songs and their arrangements. (...) When the work is complete, you can make some copies for its dissemination*" (M1, p.27). Only half of the textbooks analyzed (M3, M4) include activities that use direct ICT use. An example of this type of suggestion is the production of an audio CD where students must record the selected songs and their arrangements. These textbooks

promote this type of work proposal exceptionally.

The structure of the National Curriculum of Basic Education of the 3rd cycle has eleven subjects and four organizers: Interpretation and communication; Creation and experimentation; Sound and musical perception; Musical cultures in contexts.

For the four mentioned organizers, the textbooks show the development of a work interconnected from a thematic module, among the eleven which take part of the curricular guidelines: "Forms and structures", "Improvisations", "Melodies and arrangements", "Memories and traditions", "Music and movement", "Music and multimedia", "Music and technologies", "Music of the world", "Pop-Rock", "Sounds and senses" and "Themes and Variations" (Table 2).

About the described in Table 2, the representative modules in the analyzed textbooks are those of "Pop-Rock", "Melodies and arrangements" and "Sounds and senses". The module "Music and technologies" only is dealt with in two four textbooks (M1 and M3). We must register that the M4 is the only textbook that develops three of the eleven possible modules. Consequently, of the results drift that, at least, a textbook includes all the curricular modules (M3). The fact of the M3 to present the totality of the modules of the ministerial guidelines allows that this if constitutes as a material of base necessary to be developed by the pupil throughout three school years until the final of the 3º cycle. By those guidelines, the student must work in at least, six of the eleven thematic modules during the cycle. The fact of if having the eleven available possibilities in one same textbook also allows to the teacher a fast access in the adaptation of the activities to the characteristics of the group and the students.

We highlight that a textbook (M2) has two extra-curricular modules. However, these modules are not part of the ones preset by the Ministry of Education: one is the approach to classical music and the other around the instruments.

It should be noted that not all textbooks under study include the module "Music and technologies" as would be expected. In both textbooks that approach this module, its presentation is very basic and uniquely theoretical, without recourse to any software to experiment. It is noteworthy that, despite living in a digital age, the module "Music and technologies" is treated in only half of the textbooks in commercialization through

Module	Contents
Forms and structures	Organization and structuring of music.
Improvisations	Exploration and understanding of the processes of musical improvisation.
Melodies and arrangements	Forms of creation, composition, and arrangement of melodies and songs.
Memories and traditions	Exploration of different types of musical spectacles of national origin.
Music and movement	Exploration, interpretation, and creation of different types of music around the movement, dances, and choreography.
Music and multimedia	Exploration, understanding and manipulation of sound and musical materials for the production of communicational, aesthetic and other effects.
Music and technology	Manipulation of acoustic and electronic sounds through experimentation, creation, interpretation, and MIDI exploration.
World Music	Exploration, manipulation, and understanding of codes and conventions of musical cultures of oral tradition.
Pop rock	Identification, creation, and manipulation of the characteristics of some musical styles through the use of technology.
Sounds and senses	Exploration, manipulation and understanding of musical creation through experimentation, composition, interpretation and graphic representations of sound.
Themes and Variations	Exploration, and manipulation of a musical idea.

Table 2. Modules and contents included

Source: Ministry of Education, 2001, p.12.

an extremely simplistic and redundant or repetitive exposition in the rare activities presented. In fact, the M3 is a recent edition of the M1, that is, the same old textbook but now presented in the market under other clothes, maintaining the flaws in regard to the use of technologies, without taking advantage of the potential To improve the learning of musical language and contribute to digital literacy.

Regarding the didactic material presented in the textbooks, it is necessary to indicate that it is systematically distributed into two distinct groups: one for students and another for teachers (Table 3).

The results show that about textbooks, even existing didactic material for the students this is surprising in a lesser amount of what that one that is available for the teachers. The didactic resources of the students are only subordinated to the subject textbook. However, they arrive in port an audio COMPACT DISC (M1), as well as a guide of hearings for download (M2, M3, and M4).

The audio COMPACT DISC includes musical extracts predominantly ethnic, European and Portuguese as for example the "Prologue of the Cantigas de Santa Maria" (M1, p.19, Track 9), followed by the ones of classic music Occidental person: "Variations on a subject rococó" of Tchaikovsky (M1, p.32, Tracks 25, 26 and 27).

For teachers, a set of extra sheet music, typified by traditional Portuguese songs (M2) and access to the Interactive Resource Bank for Teachers (BRIP), in the M2, M3 and M4 textbooks. BRIP includes, in addition to the textbook premium, an interactive digital textbook with digital resources, which contains: audio files, videos, didactic animations, interactivities, editable lesson plans.

Textbooks M1 and M2 do not have any digital version of the printed textbook. The first includes only one audio CD (which serves both teachers and students) and eight overhead projectors. While the second comprises two audio CDs for teachers and only a selection of auditions,

Textbook	Technologies / Etextbook	User	
		Teacher	Student
M1	8 Acetate	●	
	1 CD audio	●	●
M2	2 CD audio	●	
	BRIP (includes the e-textbook)	●	
	Audio downloaded from www.estudaeaprende.pt		●
M3	E-textbook premium (digital version of the textbook with hundreds of interactive features in context without having to access the Internet)	●	
	BRIP (includes the e-textbook)	●	
	Audio downloaded from www.portoeditora.pt/espacoaluno		●
M4	E-textbook premium (digital version of the textbook with hundreds of interactive features in context without having to access the Internet)	●	
	BRIP (includes the e-textbook)	●	
	Ficheiros áudio disponíveis para *download* em www.raizeditora.pt		●

Table 3. Complementary technological material included in the study textbooks

Source: Own elaboration.

which students have access to a visit to a website presented by the publisher: www.estudaeaprende.pt.

Among the textbooks published for Music education in the 3rd cycle, only one offers teachers their digital format as a complement to the printed textbook (M4), and this edition is only for teachers whose school adopts this textbook. In M4 the inclusion of the auditions in the textbook in digital format is added. The digital support auditions are the same as the physical media featured on the five CDs and included extracts from European ethnic music and classical composers. In this way, the teacher has two possibilities of work (the textbook printed or in digital support, and the auditions in audio CD in the apparatus or clicking in the digital textbook to listen directly through the computer the proposed auditions).
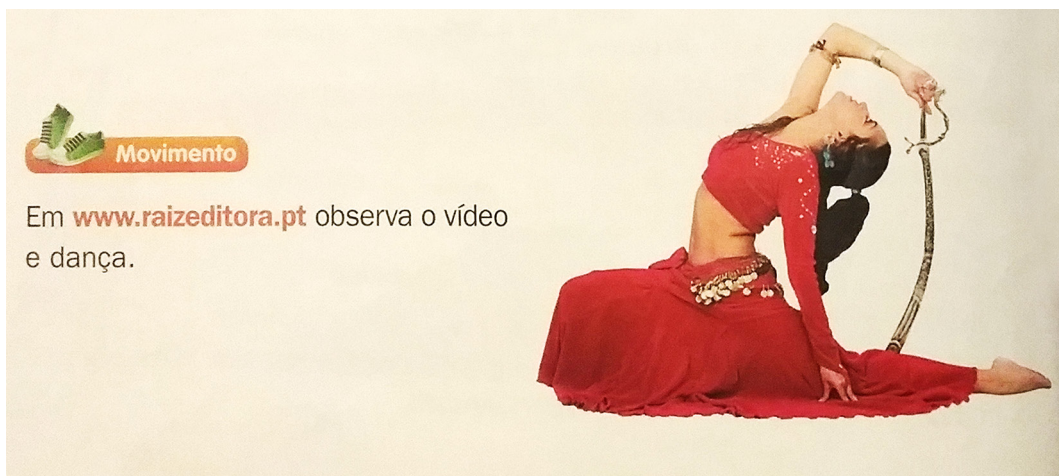

Figure 3. Example of an image about an activity to present a video of an Arab dance

Source: Carneiro, Santos & Carlos (2012, p. 18).

The M3 e-textbook include auditions, videos, and animations, which do not correspond to what is currently being consumed by adolescents in the musical context because they are not the top commercial music heard by these students. However, it presents activities that are a bit more innovative (compared to what is worked on by other publishers' textbooks) because they expose games for students to make arrangements or musical compositions: choosing something they like, seeing and listening to the instruments; or inviting them to observe and dance at some specific place (Figure 3).

Figure 3 represents an activity in which students are invited to watch a video of an Arab dance while being invited to dance it as a practice of experimentation. There are also other practices aimed at experimenting with traditional or more modern dances, combining the integration of intercultural components, although this type of activity is exceptional

DISCUSSION AND CONCLUSIONS

Although in today's world there is a dependence on technology in almost all areas, this study reveals that the most used printed educational resource in the didactic context, the textbook, does not promote the use of ICTs sufficiently, neither through the suggestions of Activities, nor for the development of the curricular modules and the complementary resources that it offers. In this way, the presence of ICT in the textbook or the suggestion to these resources, in itself, does not guarantee a quality technological literacy.

Although the curriculum goals shown in the study textbooks aim to use ICT, it is only the premise that the development of several digital competencies is expected to be present on its pages. On this aspect, we discover that it is only a simple intentionality collected in the printed textbook and also in its pdf version for use designed in the classroom. However, textbooks should truly be powerhouses for the development of digital skills. In another study, Astudillo and Chevez (2015) argue that the digitization of textbooks is presented as a didactic support in "Mexican" basic education classes without the intention of replacing printed textbooks, for which training in greater extent, teaching staff. In fact, digital resources or tools are not yet standardized at any level of study (Ricoy & Feliz, 2016).

As was shown in the large research set, this part of the study also shows that the activities presented in the textbooks do not have a substantial relationship with the actual use of ICT (such as using a musical writing

software. A sound system (or a mixing console), and their use is often used only as a stand (the stand, the storage, such as a set-top box, for example for listening to a CD). The promotion of the use of ICT in the textbooks of the 3rd cycle of Music education is done in a very restricted way, not ingenious and almost exclusively around the use of CD for listening activities. In this way, a pedagogical overvaluation of the auditions (where the use of ITC is as a simple warehouse of audio content) is perceived in detriment of activities where they are truly used. As an example of this type of activity could be the task of transcribing the melody of the most recent song of Enrique Iglesias "El perdón" in the program Musescore or Finale.

Digital interactive textbooks do not integrate components or materials, in quantity and quality, sufficient to respond to appropriate digital literacy in the area of Music education. The activities and resources collected in the textbooks do not enhance a good diversity for the visualization and musical exploration. The links to the textbooks available in digital format can be considered as little interactive and motivate the students. The presence of activities that resort to the use of ICT practically and creatively is unusual, and there is a lack of work proposals in which students could be encouraged to use them in the context of Music education.

We highlight that teaching the musical language in the 21st century implies a change of methodological focus (Hargreaves, Hargreaves & North, 2012), since music reflects the transformation of society, the social, cultural and technological changes resulting from globalization with contribution and exploitation of ICT. Thus, for the learning of music, it is fundamental that the student understands and assimilates all these transformations (Flores, 2010). There are innumerable myths associated with the role of ICT in education: being easy to use, allowing access to digitized materials and ensuring educational success, being able to outdo teachers and simplify teaching work. For this reason, it is necessary to make use of ICT to facilitate creative learning in students (Giráldez, 2009), which is significant since the practice of Music education itself.

The textbooks used in classrooms should have little in common with those of technological in the classroom to be two decades ago (Costa, 2010), because ICT has substantially modified the way of creating, producing, distributing, listening And consume music, including the music industry itself. Given this fact, and since it is still far from happening, at least as far as the context of Portuguese public schools is concerned, it is

important to reflect on what it means to teach music in a digital and urban age (Fitzpatrick-Harnish, 2015). It is not enough to introduce technological devices into the classroom to be innovative: there is also need to improve or create alternative textbooks to promote quality Music education (Finney & Burnard, 2010). For this, it is imperative to assume the relevant functions and purposes of ICT in the teaching and learning process, as well as to understand the profile of students and their needs. It is also important to reflect on the relationship between ICT/music/music experience, focusing on how digital tools can function effectively and playing an instrumental role in creative musical learning (Pérez Gil, 2007).

In another order of questions, it is necessary to understand that ICT equipment in music classes is fundamental for its integration into the dynamics of classes and that it is indispensable that teachers recognize the potentialities of both free and author software. For Malbrán (2011), it is crucial to promote good practices in the teaching of music when teaching teachers are those who know less about some aspects associated with musical technology (being the native digital students).

In part, the fact that textbooks do not include proposals for activities using music technology may be related to the complexity required by the software and/or digital tools of a discipline specific nature. However, it also happens because textbooks themselves are not a conducive medium for the progress of digital skills (for example, to enable the search for information by selecting the most relevant one, to encourage collaborative work by sharing, discussing and publishing information online), nor to Students or teachers. In this sense, it is essential that the school handbook allow the development of such skills, abilities or skills associated with ICT.

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