

RESEARCH/INVESTIGACIÓN

Received: 21/03/2021 --- Accepted: 05/07/2021 --- Published: 28/07/2021


DIGITAL MIGRATION IN THE COMMUNICATION PROCESSES OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) AND THE MEDIA OF SOCIAL COMMUNICATION

Migración digital en los procesos de comunicación de las tecnologías de la información y la comunicación (tic) y los medios de comunicación social

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How to cite this article:

Moreno-Espinosa, P., Román-San-Miguel, A., Méndez-Ojeda, J. I., y Cu Acosta, P. R. (2021). Digital migration in the communication processes of information and communication technologies (ICT) and the media of social communication. *Vivat Academia. Revista de Comunicación*, 154, 69-88.
<http://doi.org/10.15178/va.2021.154.e1361>
<http://www.vivatacademia.net/index.php/vivat/article/view/1361>

ABSTRACT

This study aims to understand the experiences and the produced impact by a blog developed in Music Appreciation matter. Participants were 20 students (among digital native adolescents, and adults) of the technical level as well as the professor, digital immigrant, whose teaching experience exceeds 30 years in an institution of higher education in Western Music in Jalisco, Mexico. As method, it was used the Action Research in the Classroom, in situ observations, focus groups, depth interviews, field diaries, and audio and video recordings. It's concluded that the interaction mediated through the blog in the teaching of Music Appreciation is a motivational component whose design and implementation contributed to a better understanding of different

Moreno-Espinosa, P., Román-San-Miguel, A., Méndez-Ojeda, J. I. y Cu Acosta, P. R.
Digital migration in the communication processes of information and communication technologies (ICT) and the media of social communication

musical styles and educommunicative interactions exceeded the traditional knowledge actions. Among the most relevant results of research are those related to the introduction of new methods and technologies in different modalities and learning environments, as well as the study of the synergies of the teaching-learning processes with the communication ones, mediated by the diverse Information and Communication Technologies (ICT) and social communication media in the different institutions of higher education and educational centers dedicated to the teaching of music, belonging to both formal and non-formal education.

KEYWORDS: Action Research - Blog - Digital Migration - Interactions of knowledge - Learning-Teaching - Strategy - Music Appreciation - Educommunication - Digital Skills.

RESUMEN

Este estudio pretende conocer las experiencias y el impacto producido por un blog desarrollado en la materia de Apreciación Musical. Los participantes fueron 20 estudiantes (entre adolescentes nativos digitales, y adultos) del nivel técnico así como el profesor, inmigrante digital, cuya experiencia docente supera los 30 años en una institución de educación superior en Música Occidental en Jalisco, México. Como método se utilizó la Investigación Acción en el Aula, observaciones in situ, grupos focales, entrevistas en profundidad, diarios de campo y grabaciones de audio y video. Se concluye que la interacción mediada a través del blog en la enseñanza de la Apreciación Musical es un componente motivacional cuyo diseño e implementación contribuyó a una mejor comprensión de los diferentes estilos musicales y las interacciones educomunicativas superaron las acciones de conocimiento tradicionales. Entre los resultados más relevantes de la investigación se encuentran los relacionados con la introducción de nuevos métodos y tecnologías en diferentes modalidades y entornos de aprendizaje, así como el estudio de las sinergias de los procesos de enseñanza-aprendizaje con los de comunicación, mediados por las diversas Tecnologías de la Información y la Comunicación (TIC) y los medios de comunicación social en las diferentes instituciones de educación superior y centros educativos dedicados a la enseñanza de la música, pertenecientes a la educación formal y no formal.

PALABRAS CLAVE: Investigación-acción - Blog - Migración digital - Interacciones del conocimiento - Aprendizaje-enseñanza - Estrategia - Apreciación musical - Educomunicación - Competencias digitales.

MIGRAÇÃO DIGITAL NOS PROCESSOS DE COMUNICAÇÃO DAS TECNOLOGIAS DA INFORMAÇÃO E COMUNICAÇÃO(TIC) E OS MEIOS DE COMUNICAÇÃO SOCIAL.

RESUMO

Este estudo pretende conhecer as experiências e o impacto produzido por um blog desenvolvido na disciplina de apreciação musical. Os participantes foram 20 alunos (entre adolescentes nativos digitais, e adultos) do nível técnico, assim como o professor, imigrante digital cuja experiência supera os 30 anos em uma instituição de educação superior em música ocidental em Jalisco, México. Como método se utilizou a pesquisa de ação na sala de aula, observações in situ, grupos focais, questionários em profundidade, diários de bordo, e gravações de áudio e vídeo. Se conclui que a interação mediada através do blog no ensino de apreciação musical é um componente motivacional cujo design e implementação contribui a uma melhor compreensão dos diferentes estilos musicais e as interações educomunicativas superaram as ações de conhecimento tradicionais. Dentro dos resultados mais relevantes da pesquisa se encontram os relacionados com a introdução de novos métodos e tecnologias em diferentes modalidades e entornos de aprendizado, assim como o estudo das sinergias dos processos de ensino-aprendizado com os de comunicação, mediados pelas diversas tecnologias da informação e comunicação (TIC) e os meios de comunicação social nas diferentes instituições de educação superior e centros educativos dedicados ao ensino da música, que pertencem à educação formal e não formal.

PALAVRAS CHAVE

Pesquisa-ação - Blog - Migração digital - Interações do conhecimento - Ensino-Aprendizado - Estratégia - Apreciação musical - Educomunicação - Competências digitais.

1. INTRODUCCIÓN

1.1. Digital migrant teachers

Nowadays there are different perspectives that explain that the Information and Communication Technologies (ICT) originate a new challenge in our educational systems, both by the transformation of the so-called "traditional" model and by the modifications in forms by which students acquire or learn new information. Thus, in today's world, it is necessary to move towards a different paradigm of education that incorporates content, ways of teaching and learning of both teachers and students in a distinctive communicative process using the ICT, in such a way that they recover the education as a natural act of communication and incorporate as a priority theme these technologies that take part of the school curriculum with spaces for reflection action on their potential, limitations and effects on learning (Ruthmann *et al.*, 2015). It is also evident how current school systems face the labor world requirements that go beyond the mere technical skills that ICT demand, since, according to the Organization for Economic Cooperation and Development (OECD) , in the 21st century, the mostly required skills are higher order cognitive skills through which "knowledge management, analysis, interaction and exchange of creative, critical, reflective and collaborative thinking" are expected, which in it is time have been translated in failed attempts of official federal programs implemented in Mexico such as "Enciclomedia" and "Digital Skills for All" constituted in only "traditional conceptualizations of

didactics and purely transmissive versions of learning" (Edel et al., 2015; OCDE, 2010). For its part, the United Nations Educational, Scientific and Cultural Organization (UNESCO), through the Division of Higher Education, has proposed as one of the important pillars of the globalization of higher education the innovations related with the ICT which have important consequences in this sector in terms of quality, access, diversity, and financing. It has also formulated guidelines for the use of ICT by teachers, aimed at transforming a learning environment focused on the teacher to one focused on the student. To this, the organism considers that teachers should have access to suitable training and opportunities for constant professional development so that they are motivated to learn and apply new techniques and new methods of teaching and learning mediated by technologies (Semenov, 2005).

One of the current ways of addressing this need in teachers is to analyze the role of the teacher as a digital migrant, as someone with the possibility of appropriating digital technologies and contributing to the digital migration of other people, mainly their colleagues, to be a competent educator in his areas of disciplinary content, the technologies didactic use to teach and continue learning as technological changes advance; reflect with them the digital migration processes that are available to the teacher through a set of conditions, guidelines, actions and resources that must be exploited in a planned, explicit and systematic manner (González, 2013).

Thus, today, digital migrant teachers are facing the first generation of university students trained in new technological advances surrounded by computers, video games, among others, with information processing and communication skills different from those of the generation in charge of to train them, (in this case teachers), thus establishing a generational rupture or gap that cannot be ignored or neglected (Ayala & Cassany, 2008; Prensky, 2010). With the expansion of new technologies, digital migrants have the opportunity to assess the skills of digital natives by exploring different forms and methods of teaching and learning. The today's student hardly finds attractive a long-term face-to-face conference, or lessons with "step by step" logic, and often this is interpreted as if the student seems to show a lack of effort and seriousness during their learning process. The so-called digital natives, unlike digital migrants, enjoy receiving agile and immediate information, prefer graphics rather than texts, are inclined to random processes (hypertext), work better and perform when they work on the Web, and prefer to be instructed in a playful way rather than embark on the rigor of the traditional work (Prensky, 2010). The challenge for digital migrant teachers is to revalue their digital literacy to seriously explore the potential of different technology tools including social media, and gradually incorporate the actions focused on training and practice that take part of the information and communication era, in ways that they recover unsuspected forms of interaction related to their teaching role and they are empowered with ICT, resulting in the improvement of teaching-learning processes and social interaction through the new modalities of teaching on the Web, thus enhancing these educational scenarios according to their specialty, subject and educational level (Davis *et al.*, 2014).

1.2. The empowerment of Music Education with ICT

Today, the music of written tradition is accessible to a large number of people, without ethnic, linguistic, age, or social class differences. Unlike antiquity, western music and performers can now be disseminated through the mass media, such as radio, internet and television, which influenced the increase of people, first, in the enjoyment of music and second, in the desire to learn how to play a musical instrument (Navarro *et al.*, 2009). This is how in our times, the influence exerted by the different means of communication and social information on the education and dissemination of culture, including music, is thanks in large part to the new ICT, however, it is real that the dedication to its research in the different arts is very neglected and unbalanced in his treatment (Palomares, 2004).

Nowadays, students find it difficult to think about what life was like when the aforementioned means did not exist, including the process of music education changed, since it is necessary that it is on par with what happened in ICT (Sustaeta & Domínguez, 2004). In general, music technology can improve processes and reduce learning times. Computer tools, like books, videos, or television, are a potential mediating agent of learning whose use depends on the teacher's musical vision, as well as on the principles that guide their educational action. For example: the use of video as a complementary modality for presenting information may influence on the study of fingering for certain musical instruments or orchestral conducting techniques (Tejada, 2004).

From this conception of music and its teaching supported by ICT, the migrant teacher will generate his own concept of music education and design an action plan that brings into play interactions between students, teacher and mediators (Tejada, 2004). For example, in the case of a group of the subject Orchestral Conducting of a Higher Education institution in the United Kingdom, the use of educational video by the students meant an innovative and useful support to the feedback given by the teacher, both of the rehearsals, as of the concerts, because it facilitated them to follow the teacher's suggestions, and represented a means to give feedback to themselves and to observe improvements in their conducting technique (Ramírez & Sime, 2010). Among other scenarios mediated by the technologies, the didactic applications for the virtual choral rehearsal in the polyphonic work of small groups, in which its components can work individually with the agreed repertoire with facilities to be downloaded from the internet in MIDI or mp3 format, and each choir member can rehearse independently, either with their individual voice or combined with any of the other voices, or with tonality (Sustaeta & Domínguez, 2004).

Another work done, which involves the teaching of arts through ICT, refers to the study of singing. Qualitative research was carried out, which consisted in the implementation of an experimental course called "Application of new technologies in the teaching of singing addressed to 30 students", with different degrees of experience, vocal development and interpretation styles, whose objective was to verify whether the application of ICT in the teaching of singing facilitates students to obtain favorable results during their training. As part of the results, it was found that the insertion of

computer programs allowed the teacher, who served as a participatory researcher, to qualify in an objective way the development of advanced students, who in turn checked their progress through the analysis of their sonograms, compared with those of famous singers who they took as models. Beginners corrected deficiencies in timbre, voice attack and breath support (Suárez, 2008).

It's notorious how the web with its different tools has drawn new scenarios for the teaching and learning of music, providing extraordinary resources for music educators from all ambits and levels, and thus to favor creative, constructive and meaningful musical learning. In this sense, the incorporation of the ICT in the teaching of music offers the possibility of facing varied and enriching learning situations from different approaches (Giráldez, 2006). In the Wai-Chung's words (2009), the Internet is used to explore new methods of making music, composition and interpretation, together with the analysis and discussion of their cultural aspects and the digital culture.

So, it can be affirmed that the coverage of ICT and audiovisual media has transformed the world of music from its production, dissemination and perception. The web and its resources have become an inexhaustible source to investigate contexts in which music develops, thus promoting self-learning and collaborative work where students and teachers have the opportunity to explore new scenarios that favor the learning of the music and to recognize the importance of this technological empowerment and its applications in this field (Sánchez, 2009).

1.3. The blog and the teaching of music

At the end of the 90s, blogs were born to counteract the limitations that interposed in the communication between the user of the medium and the designer of the online content. It was in the year of 1997, when the American software developer, entrepreneur and writer Dave Winer creates the necessary software, and Jorn Barger creates the term Weblog when opening a personal page on the web, considered the first true and own blog (Rojas, 2006).

The blog or weblog, is one of the components of the "Web 2.0" and has become in recent years a phenomenon within it. It is defined as a personal online journal, "blog", a website to collect and publish messages or texts by one or several authors on a topic and whose stories are organized along two axes: chronological and thematic. It is a space where we can create a personal diary, where the author keeps up the freedom to publish what he sees appropriate (Seoane, 2007). It is one of the most dynamic areas of the Internet, which is projected as a means of online communication that strives for a place between electronic versions of conventional and digital media such as news portals, magazines, newsletters among other kinds of information.

The main modalities or denominations that the blog adopts, are: the "edublog", as an educational tool for teaching and research; the "schoolblog", which is developed in the school environment by teachers and students; the "audioblog", the "videoblog" and the "photoblog", which contain audio, video and photographic files respectively; and

Moreno-Espinosa, P., Román-San-Miguel, A., Méndez-Ojeda, J. I. y Cu Acosta, P. R.
Digital migration in the communication processes of information and communication technologies (ICT) and the media of social communication

the "media blogs", which are about media and communication. The blog takes place within a community of users who share a common interest; generally, the "blogger" is responsible for its operation and makes a series of reflections or opinions through published texts, so that from the educommunication he or she assumes the functions of teaching, communication, information, research, dissemination, debate, organization, publisher of scientific and educational results, among others (López & Ballesteros, 2008).

The blog has been used to support face-to-face teaching practice, the development of didactic units, provide additional documentation, link to thematic portals and other web spaces, carry out research and synthesis work, expose comments and doubts; a greater empowerment of self-learning and the greater involvement of students in the creation of didactic materials (Lima, 2008).

As for the research and experiences with the blog in music education, is the one developed with undergraduate students of the subject of Musical Analysis in the National Institute of Education, an institution of the Nanyang Technological University in Singapore. The distributed musical skills were exploited through the design of blogs. It was found that its implementation has great pedagogical and motivational impact as a tool and strategy in teaching and learning, it strengthens collaborative work and the organization of ideas during this process (Chong, 2008).

In Mexico, the Institute for Educational Research and Development of the Autonomous University of Baja California (UABC, as per acronym in Spanish), together with the National School of Music of the National Autonomous University of Mexico (UNAM as per acronym in Spanish), carried out a research-development study, which consisted in testing the blog as a techno-pedagogical teaching-learning tool to start the interpretation of the Classical Guitar in a mixed, blended learning or hybrid course. According to the results, it promoted favorable attitudes in the students, linked to other web tools such as "YouTube" and generated a space for the gestation of musicians, originating a way of teaching to play musical instruments online, based on constructivists pedagogical models (Navarro *et al.*, 2009).

2. OBJETIVES

To promote through the blog innovative practices in teacher's teaching strategies as digital migrant and the students' learning strategies, both natives and digital migrants, in the subject Musical Appreciation inside and outside the classroom.

Specific objectives of the study:

- 1) To know the expectations of teacher and students of Musical Appreciation in relation to the insertion of the blog for the subject's teaching and learning.
- 2) To design and implement a blog as an auxiliary to face-to-face Musical Appreciation classes.
- 3) Analyze with students and the teacher the impact of the blog implemented in the subject of Musical Appreciation.

- 4) Reflect on how the transformation of the teaching and learning process (teacher and students) occurred through the innovative intervention mediated with the blog.

3. METODOLOGY

The investigation was carried out considering the model of a public institution of the state of Jalisco. In this it's taught Western music, and his model is equivalent to the old music schools or conservatories founded in Mexico more than 50 years ago, in whose teaching system the music teacher's experience more than recognized teaching methods has prevailed. The institution has a library which contains books, music sheets and a sound library. It has limited internet connection for teachers and official students. The participants in the research were 20 students of the second semester of 2012 in the curriculum of Music Technician in the subject of Musical Appreciation, native students and digital migrants, students from various instruments, aged between 15 and 35 years (100% of students). Average schooling transits between secondary and high school, and a minimal amount has higher education degree. We worked with the teacher of Musical Appreciation as digital migrant.

This research was carried out under the qualitative approach, and the naturalist or interpretive paradigm, where a specific community interpreted its reality and particular needs in the scenario, so that then they elaborate a theory derived from it (Pérez, 1990; Elliott, 2000). The process of participatory action research was applied, where the community of digital and native migrants, together with the researcher in his participant role, all interactions. This type of study is formed according to a cyclic process that starts from the detection of a need, and that once covered, concludes with its evaluation, which gives rise to an emerging knowledge (Pérez, 1990) (See Figure 1). The intervention lasted six months and the study was extended to one year.

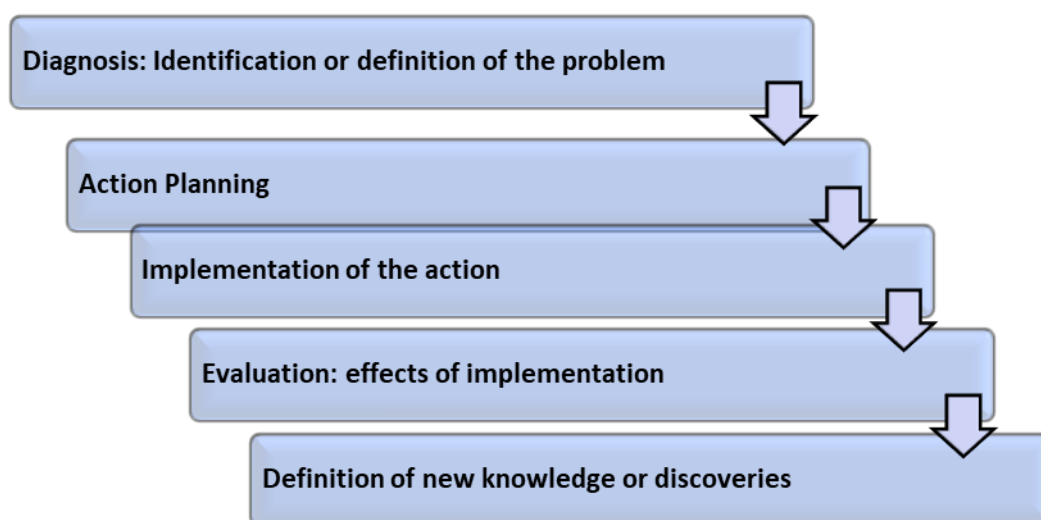


Figure 1. *The Research-Action cycle*
Source: based on Pérez, 1990

As research techniques for data collection that were used were: field journals through which the researcher's observations and appreciations were registered; the analysis of documents, since the subject's syllabus was revised and together with the most used textbook by the teacher; the in-depth interview with the migrant professor who gives us in-depth information about his experiences as a teacher of musical appreciation and the focus groups with the students that allow us to inquire about the topics in the perception of their collective performance in audio and video recordings. Diachronic reliability and triangulation were used to guarantee the research reliability and validity (Elliott, 2000; Galindo, 1999; Pérez, 1990). Regarding to the researcher's role and ethics, he served as moderator and advisor in the situations that required it, fostered dialogue and maintained the participants anonymity in the study.

4. RESULTS AND DISCUSSION

From the diagnostic phase, it is indicated that the teacher assumed not to know the blog and the way of working it. However, he visualized that its insertion in the classroom could generate interactions rich in experiences in an innovative scenario that contributes to a better understanding of the music appreciation. For their part, the students (90%) requested the creation of a virtual environment that allows them to learn from any point outside the classroom and to carry out listening tasks of melodies with greater attention in schedules and spaces that adjust to the time and place available. This coincides with Aguaded *et al.* (2008), since the teacher, when engaging with the students in the technology resources discourses, manifests a cognitive and attitudinal component favorable to them and projects their course as part of the potential of ICT integrating then the strategies that are proposed from, in, and by the educational communities.

In this sense, the opportunity of the new training environments and their benefits for training and communication are highlighted, which enable a viable proposal in response to needs with flexible, dynamic, active, interactive, individualized and collaborative environments (Cabero & Llorente, 2008), since the teacher stated that "two face-to-face classroom hours per week are insufficient to analyze the music, in such a way that they enrich the student's ear and, in turn, can distinguish good from bad music". In addition of that, students frequently requested him the recording of CDs with melodies and also they expressed regarding to the use of the cassette and CD player in class, which turned out to be monotonous for them by listening to a complete musical piece more than once, and in which they only wanted to analyze specific fragments of it, so that the functions "forward and backward" in that player were carried out with a certain imprecisions. So, the blog, is consistent with these evidences, as the opportunity to overcome the obstacles that are part of the access to the content, counteracting thus the poverty that some institutions dedicated to the teaching of the arts in Mexico maintain in aspects of technology infrastructure and equipment (hardware and software) (Cu, 2012).

Concerning to the blog components, the migrant professor and the students agreed that the discussion forums should be used to know the opinions on the identification

of tonalities, character, texture, periods, and musical styles, as well as links to "YouTube" about videos of melodies of recognized composers from different periods. In addition, the students (50%) mentioned the insertion of a chat where everyone can meet at a specific time and interact to get feedback and clarify doubts. On the other hand, it was proposed that the blog functions as a schedule or planning of activities with its themes and tasks, to access in case of absence.

As part of the action plan and the implementation phase, the subject's syllabus was revised, the blog and its learning tasks were designed, the teacher and the digital migrant students were trained (see figure 2) to access the blog and exploit it for the subject's purpose. The blog web address is <http://apreciacionmusical.blogspot.mx/> (Zapata *et al.*, 2014).



Figure 2. *Training teacher and students who participated as digital migrants, and projection of the blog in the classroom*

Source: self-made

In the blog evaluation impact, the students (80%) expressed that it presented an appropriate and novel design for the subject, which allowed an easy access and use. The professor explained that he immediately understood the benefits of implementing this technology. He also said that his design combined "very classic aspects like the Baroque, with modern things, causing the blog to have both a serious and modern character". Also, the use of this means had for him a motivational character, since he recognizes that the blog, compared to only recorded music, would have been more laborious to achieve it.

Both the teacher and students found it attractive that the design allowed them to contribute with videos and links. Again, the students affirmed that it was interesting both the blog projection in class, and the home review of the exercises solved with the support of the discussion forums and videos from "YouTube" (80%) because this caused a variation of the interactions in the class and endowed it with "a new dye". Through the forums, the teacher recognized and followed up the conscious participation, and as an added value, it allowed him to know each student's opinions and personality, thus favoring a narrowing of the teacher-student relationship. For their part, the students (90%) also showed a great acceptance towards the discussion forums, however, some of them observed that to the extent that the partners

participated, there were identical answers, reason by why they posed about the possibility that those were the result of a mere copy and not of an authentic evidence of learning. With this last statement it can be said that the student has been involved in the analytical exercise of the blog potentialities and limitations (Cu, 2012).

In coincidence with Cabero and Llorente (2008) who affirm that the ICT:

... offer us a series of possibilities that make them truly useful for their incorporation into training environments: expansion of the information offer, creation of more flexible environments for learning, elimination of spatio-temporal barriers for interaction between the teacher and students, increase in communication modalities, enhancement of scenarios and interactive environments, favoring both independent learning and collaborative learning ... [...] ... new ways of organizing teaching activities ... [...] ... creating differentiated environments adapted to the students cognitive characteristics (p. 8-9).

Regarding the videos of "YouTube", the teacher recognized the great educational value if each music teacher devotes time to the search and selection of reliable contents. For the students it was a useful tool when carrying out their tasks in a flexible way in substitution of the cassette and CD player. Each student could reproduce the complete musical piece for more than one occasion or to focus their attention on the melodies fragments that seemed to them most interesting to identify or analyze in an individual learning exercise (Cu, 2012).

The professor added that he achieved to capture his students' attention and engagement by using the blog inside the classroom with the help of the audio and projection equipment borrowed, including those ones who did not show interest in listening to concert music at the beginning of the semester, so that he could use the parts of the blog that he was interested in emphasizing more. In addition, he recognized the change in the way of formulating directions in the blog thanks to the instructional design, which caused to provide a better guidance for his students who said that the instructions were clear and well structured. In this sense, Beloch (2013) indicates that the instructional design to work in virtual environments is an arduous task, which requires training in this matter that allows the use of the teaching-learning modalities through the web and involves contemplating both the teacher and the student, the teaching modality, the program objectives, the tasks, exercises and materials, among others.

On the other hand, the blog in the teaching of musical appreciation fulfills its educational didactic purpose. It is a friendly, intuitive tool and can be used from both inside and outside the classroom in collaborative work, where the student takes control of their learning (Cabero & Llorente, 2008) in an innovative pedagogical approach of work for a mixed course modality. In relation to the weaknesses detected in the use of discussion forums, the students suggested that their formality and the tasks could be improved, with a platform that allows them to be designed in advance and programmed with upcoming, closing or deadline dates of publication and

realization for achieving a greater control and the prevention of disorganized participations. As for the chat that was proposed, it was used with little demand because it was difficult for the students to agree on an hour to meet and discuss. On the other hand, the teacher stressed that the blog exceeded his initial expectations, because he recognized that he got to bring his students to music (Cu, 2012).

For purposes of evaluation of the subject, the blog allowed a more comfortable consultation to corroborate the students' progress, participation, and achievements, as the teacher acknowledged that it would have been difficult to achieve it by relying solely on the printed attendance list and assigning on it "either quantitative or qualitative notes about each student's performance". The students were allowed to make proposals, among them the fact that the students asked for more diversity of materials for this purpose, which also complement their face-to-face activities, mainly for the beginning of the learning of musical instruments. Other requests were the creation of a virtual sound library, in which a musical repertoire of different genres and musical styles can be downloaded to analyze from their homes, a virtual library that contains books about music, and mainly, music sheets for each instrument. They argued that sometimes when they used to go to the library the material they requested was not available, and it would be easier for them to access this content when downloading it from a technological platform from their homes. They also demanded audio materials in mp3 format to study the different chords, rhythmic-melodic dictations, as well as the design of tutorials that reinforce the learning of certain musical instruments in the aspects of posture, technique of execution, among other skills. In addition, the teacher suggested that it would be very useful to have a collection of training videos about master classes of renowned instrumentalists and singers, so as not to depend solely on these face-to-face classes (Zapata *et al.*, 2014).

5. CONCLUSIONS

Based on the results and their analysis, it can be concluded that the digital migration process leads to complex interactions in the migrant teacher, which leads him to reflect and improve his own practice in the conventional and web scenarios, in a transformation of both communication and teaching and learning processes, which includes more motivated students to learn through the insertion of innovative modalities that can be used not with a purely technological determinism. This is related to the tendency to focus only on the appearance and the technical standpoint of devices, criteria mostly promoted by the technological industries, marketing, advertising, and the entertainment world, (Bauman, 2017) and whose influences turn out in incorrect applications of technology. To overcome this situation, educators can develop a sense of critical and reflective evaluation when these technologies take part of the pedagogical processes carried out in the classroom, since we are immersed in a world where "it is difficult to draw a clear dividing line between musical humanity and technological humanity" and the study of social practices and meanings has been abandoned as part of the so-called "participatory culture" by which technology has taken part (Himonides, 2012; Ruthmann *et al.*, 2015).

The action research methodology in its participatory nature allows the cooperation and the knowledge reconstruction of the migrant community, digital natives, the researcher, and the school community, since this allows for enriching interactions and critical reflection spaces that encourage the formulation of alternatives for work with ICT in a dynamic of educational innovation for the teaching of musical appreciation.

It is important to point out that the methodology of applied research was the product of the joint participation of a school community both in the collective construction of the problem and needs and in the action plans taken to contribute to its solution. The formulation of the action plan as a vital part of the study is a construction of the collective based on their training needs in the subject and requirements according to their knowledge in new scenarios, computer skills and the versatility of tools in the web 2.0, in this case the work with the blog.

It is possible to innovate in the classroom supported by the ICT and this will depend on the vision that the teacher has of teaching music, as well as the development of attitudes, both from the teacher and students, to encourage the use of these new modalities with pedagogical and didactic aims in spite of the limitations, since the possibilities before the wide variety of free platforms and tools from the Web 2.0, it can be proved that they have versatility and flexibility, that allow a different and innovative control in the participation of teachers and students, where both assume their own control and construction of their own training and knowledge processes in order to optimize their processes when teaching and learning in the classroom. That was the case of music appreciation subject. In fact, 90% of students consider that participation in the blog helped them to express themselves more easily than in the classroom, thus reducing stress, and in the case of those who do tend to openly express their opinions in class, they will be able to know the opinion of other colleagues through the blog.

It is recommended, for purposes of future research, that in conservatories and schools of music education in Mexico, empirical studies be conducted that are systematic, accurate, and timely on the digital literacies of their teachers and students. It is also advisable to investigate in our country the practices with different devices, mobile applications, the diverse uses of audiovisual media, the television as an educational and cultural tool, all of these to deepen the degree of authenticity of learnings, to understand the communication processes (to what extent the ICT and social media function as mediators of knowledge in teaching and learning scenarios of music and are used for such purposes by teachers, students and musicians in general). Other problems that can be investigated regarding the use of these technological tools and means of social communication through consistent empirical studies of an interdisciplinary nature are: the cognitive processes that are generated, the development of diverse skills, social behavior patterns, socio-affective processes and identities, as well as the description of social imaginaries between different educational and social actors involved, the social and cultural capital of students and music teachers, the mediating role they play in cultural industries, among other possible objects of study. This will allow a solid and firm starting point, on the one

Moreno-Espinosa, P., Román-San-Miguel, A., Méndez-Ojeda, J. I. y Cu Acosta, P. R.
Digital migration in the communication processes of information and communication technologies (ICT) and the media of social communication

hand, to guide the integral formation of the students of art school communities, and on the other, to detect needs in terms of infrastructure and facilities to advance in viable solutions. It is also suggested to conduct research on issues related to the internal curricular assessment of educational programs so that the insertion of ICT in this area is relevant and has a positive impact on the teaching and learning processes, as well as the teacher training (Davis *et al.*, 2014; Grimshaw, 2014; McPherson & Welch, 2012; Ruthmann *et al.*, 2015; Reeves *et al.*, 2017; Semenov, 2005).

Finally, it is necessary to evaluate, before implementing, the potential of the different tools offered by the Internet for educational purposes, including the Learning Management Systems, the different Content Management Systems and the different Web 2.0 tools, to determine which are the most suitable in the study of a specific musical instrument, as well as the theoretical, musical, pedagogical and / or methodological subjects. The contents derived from the tools that are functional will serve to enrich and enhance the functions of the Learning Management Systems that institutions of music manage. Therefore, it will be necessary to encourage internal policies for the best use of ICT in the same entities.

6. REFERENCES

- Aguaded Gómez, J. I., Tirado Morueta, R., & Cabero Almenara, J. (2008). Los centros TIC en Andalucía, España: un modelo de implicación del profesorado en la integración curricular de la tecnología. *SOCIOTAM*, 17(2), 171-199.
- Ayala, G., & Cassany, D. (2008). Nativos e inmigrantes digitales en la escuela. *Revista CEE Participación Educativa*, 9, 53-71. <https://cutt.ly/umht08k>
- Bauman, Z. (2013). *Sobre la Educación en un mundo líquido. Conversaciones con Ricardo Mazzeo* (D. Payás Puigamau, Trad). Paidós.
- Beloch, C. (2013). *Diseño Instruccional, Entornos virtuales y de formación. Recursos tecnológicos en Educación y Logopedia*. Universidad de Valencia. <http://www.uv.es/bellochc/pedagogia/EVA4.wiki?7>
- Cabero Almenara, J., & Llorente Cejudo, M. C. (2008). La alfabetización digital de los alumnos. Competencias digitales para el siglo XXI. *Revista Portuguesa de Pedagogía*, 42(2), 7-28. <http://tecnologiaedu.us.es/cuestionario/bibliovir/jca26.pdf>
- Chong, E. K. M. (2008). Harnessing distributed musical expertise through edublogging. *Australasian Journal of Educational Technology*, 24(2), 181-194. <http://ajet.org.au/index.php/AJET/article/view/1220/446>
- Cu Acosta, P. R. (2012). *Plataforma Tecnológica como estrategia de enseñanza y aprendizaje de Apreciación Musical del Mundo Occidental: una experiencia con el blog*. [Tesis doctoral, Universidad Autónoma de Yucatán]. <https://cutt.ly/JmhyyzD>

Moreno-Espinosa, P., Román-San-Miguel, A., Méndez-Ojeda, J. I. y Cu Acosta, P. R. *Digital migration in the communication processes of information and communication technologies (ICT) and the media of social communication*

Davis, C., Deil-Amen, R., Rios-Aguilar, C., & González, M. (2014). Social Media, Higher Education, and Community Colleges: Research Synthesis and Implications for the Study of Two-Year Institutions, Community College. *Journal of Research and Practice*. <https://doi.org/10.1093/oxfordhb/9780199826162.001.000110.1080>

Elliott, J. (2000). *El cambio educativo desde la investigación acción*. (5th edition). Morata.

Galindo Cáceres, L. J. (1999). *Técnicas de investigación en sociedad, cultura y comunicación*. Pearson Addison Wesley Longman.

Giráldez Hayes, A. (2006). *Internet y Educación Musical*. Grao.

González Gartland, G. (2013). ¿Incluidos, formados y capacitados? El impacto de las migraciones digitales en el rol docente. In Cabello, R. *Migraciones digitales: comunicación, educación, y tecnologías digitales interactivas*, (pp. 79-100) Universidad Nacional de General Sarmiento. <https://cutt.ly/0mhi2C0>

Grimshaw, M. (2014). *The Oxford handbook of virtuality*. University Press. <https://doi.org/10.1093/oxfordhb/9780199826162.001.0001>

Himonides, E. (2012). Music Learning and teaching through technology. In McPherson, G. and Welch, G. (eds.) *The Oxford Handbook of Music Education*, (2). Oxford Press. <https://doi.org/10.1093/oxfordhb/9780199928019.013.0028>

Lima Torrado, J. (2008). Utilización de weblogs como instrumento de educación en Derechos Humanos dentro de la plataforma Webct de la Universidad Complutense de Madrid en el contexto del Proceso de Convergencia Europea de Educación Superior. *IV Jornada Campus Virtual UCM: Experiencias en el Campus Virtual* (pp. 111-115). Editorial Complutense. <http://eprints.ucm.es/7798/1/campusvirtual118-122.pdf>

López Meneses, E., & Ballesteros Regaña, C. (2008). Caminando hacia el software social: Una experiencia universitaria con blogs. *Pixel Bit. Revista de Medios y Educación*, 32(5), 67-82. <https://cutt.ly/CmhoQy8>

McPherson, G., & Welch, G. (2012). *The Oxford Handbook of Music Education*. Oxford University Press.

Morales-González, B., Edel-Navarro R., & Aguirre-Aguilar, G. (2015). Metacognición y tecnologías de la información y la comunicación: coincidencias e inconsistencias en la investigación. *Sinética: Revista Electrónica de Educación*, 45. <https://sinectica.iteso.mx/index.php/SINECTICA/article/viewFile/592/585>

Navarro, J. L., Lavigne, G., & Martínez Salgado, G. G. (2009). Curso de Guitarra Clásica en línea: blogs para la enseñanza musical. *Revista Electrónica LEEME (Lista*

- Moreno-Espinosa, P., Román-San-Miguel, A., Méndez-Ojeda, J. I. y Cu Acosta, P. R. *Digital migration in the communication processes of information and communication technologies (ICT) and the media of social communication* (*Electrónica Europea de Música en la Educación*), 24. <https://ojs.uv.es/index.php/LEEME/article/view/9794>
- OCDE (2010). *Are the new millennium learners making the grade? Technology use and educational performance in PISA 2006*. OECD Multilingual Summaries. <http://www.oecd.org/edu/cei/45053490.pdf>
- Palomares Moral, J. (2004). Comunicar la música. *Comunicar*, 23, 13-16. <http://www.redalyc.org/pdf/158/15802303.pdf>
- Pérez Serrano, G. (1990). *Investigación Acción: Aplicaciones en el campo social y educativo*. Dykinson.
- Prensky, M. (2010). *Nativos e inmigrantes digitales*. Distribuidora SEK, S. A. <https://cutt.ly/hmhoBV1>
- Ramírez Martinell, A., & Sime, J. (2010). Video enriched learning experiences for performing arts students: two exploratory case studies. In O'Donoghue, J. (Ed.), *Technology Supported Environment for Personalised Learning: Methods and Case Studies* (pp. 248-267). IGI Global.
- Reeves, T., Caglayan, E., & Torr, R. (2017). Don't shoot! understanding students' experiences of video-based learning and assessment in the arts. *Video Journal of Education and Pedagogy*, 2(1). <https://videoeducationjournal.springeropen.com/articles/10.1186/s40990-016-0011-2>
- Rojas Orduña, O. I. (2006). *Blogs: La conversación en internet que está revolucionando medios, empresas, políticos y ciudadanos*. ESIC.
- Ruthmann, S. A., Tobías, E. S., Randles, C. & Thibeault, M. (2015). Is it the technology? Challenging technological determinism in music education. In Randles C. (Ed.), *Music Education: Navigating the future* (pp.122-138). NY Routledge.
- Sánchez Llamas, J. (2009). Los objetivos del currículo musical y su puesta en práctica en los I. E. S. *Temas para Educación: Revista Digital para profesionales de la Enseñanza. Federación de Enseñanza de CC.OO. de Andalucía*, 4. <http://www.feandalucia.ccoo.es/indcontei.aspx?d=3423&s=5&ind=177>
- Semenov, A. (2005). *Las Tecnologías de la Información y la Comunicación en la enseñanza. Manual para docentes*. UNESCO. <http://unesdoc.unesco.org/images/0013/001390/139028s.pdf>
- Seoane García, C. (2007). Blogs, los nuevos colegios invisibles. (Espacios de creación, diálogo y aprendizaje). *Cuadernos de Biblioteconomía Arquivística e Documentação*

Moreno-Espinosa, P., Román-San-Miguel, A., Méndez-Ojeda, J. I. y Cu Acosta, P. R.
Digital migration in the communication processes of information and communication technologies (ICT) and the media of social communication

Cadernos

BAD,

23-37.

<http://www.apbad.pt/CadernosBAD/Caderno12007/CGarciaCBAD107.pdf>

Suárez Mazón, E. M. (2008). *Aplicación de Teorías Pedagógicas Modernas y Recursos Informáticos en la Enseñanza del Canto: Antecedentes Históricos*. [Tesis doctoral, Universidad Carlos III de Madrid].
<http://dialnet.unirioja.es/servlet/tesis?codigo=18772>

Sustaeta, I., & Domínguez-Alcahud, M. P. (2004). Aplicaciones didácticas de la informática musical. *Revista Electrónica Complutense de Investigación en Educación Musical*, (4). <http://pendientedemigracion.ucm.es/info/reciem/v1n4.pdf>

Tejada Giménez, J. (2004). Música y mediación de la tecnología en sus procesos de aprendizaje. *Educación XXI Revista de la Universidad Nacional de Educación a Distancia*, 7. <http://www.redalyc.org/pdf/706/70600701.pdf>

Tobias, E. (2015). Inter/trans/cross/new media(ting): Navigating and emerging landscape of digital media for music education. In Randles, C. (Ed.) *Music Education: Navigating the future* (pp.91-121). NY Routledge.

Wai-Chung, H. (2009). The role of multimedia technology in a Hong Kong Higher Education Music program. *Visions of Research in Music Education*, 13(1).
<http://www-usr.rider.edu/~vrme/v13n1/Vision/Ho.finalfaedits.01.15.09.pdf>

Zapata González, A., Méndez Ojeda, J. I., & Cu Acosta, P. R. (2014). Una nueva forma de enseñar y aprender la apreciación musical utilizando el blog. In Prieto Méndez M. E.; Pech Campos S. J.; De León, T. and García, J. F. *Technologies and Learning: Innovation and Experiences* (pp. 625-630). Humboldt International University/CIATA.

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Moreno-Espinosa, P., Román-San-Miguel, A., Méndez-Ojeda, J. I. y Cu Acosta, P. R.
Digital migration in the communication processes of information and communication technologies (ICT) and the media of social communication

Research ID: <https://publons.com/researcher/1939741/pastora-moreno-espinosa/>
Scopus: <https://www.scopus.com/authid/detail.uri?authorId=51663715200>
Researchgate: <https://www.researchgate.net/scientific-contributions/Dra-Pastora-Moreno-Espinosa-2033866337>
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Digital migration in the communication processes of information and communication technologies (ICT) and the media of social communication

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