

DIGITAL COMPETENCE IN ITALIAN HIGHER MUSIC EDUCATION

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In the past, the encounter between music and technological innovation was capable of making profound changes in the art itself and in social life. Today the passage from the possession of digital skills that characterizes our time to their use in the disciplinary sector of the teaching of music and instruments in higher musical education in Italy means reviewing the professionalism of the musician and his role as a teacher, with an emphasis on the artistic responsibility inherent in the welcoming of digital technologies and their exponential development, that we cannot help but think will reserve fresh future conquests, alongside the established knowledge and methodologies of music teaching at the highest levels.

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1 Introduction

In the past, the encounter between music and technological innovation was capable of making profound changes in the art itself and in social life.

Today, this encounter - between music and technology - is causing a profound transformation in the field of education and investment in training for the new generations.

In other words, we are seeing and perhaps supporting - albeit with all the contradictions of the digital divide - the birth of a possible future; a future that appears to be conditioned by the development of the Internet:

The Internet is called on to perform increasingly many tasks - from online banking to tsunami monitoring. If the Internet could wish for anything on its 40th birthday, it would probably ask to be more powerful, connected and intuitive - responding to our needs at home, work or on the go. (Digital Agenda for Europe)

A future that was unimaginable just a few years ago now seems to be knocking at the door:

There was a time when connecting to the internet meant being tethered to a desk and chained down by cables. As wireless and mobile technology advance, users can not only surf the online world, but can also do so on the move, through a plethora of portable devices, including laptops, smart phones and tablets; with an increasing need for high-bandwidth, high-speed broadband that can cope with rich multimedia content.

Research projects funded by the European Commission are spearheading future networks that are fast, flexible and ever responsive to demands from both humans and machines for access to content, apps and services relevant to the context and location of the user. This is how the future internet is evolving: as an internet of services, things and infrastructure. From smart appliances that talk to each other to clothes that monitor our health; from cars that cannot crash to mobile technologies and cloud platforms that run our businesses. (Digital Agenda for Europe)

In this complex, constantly shifting scenario, we are seeking to trace a research basis to organize what is happening at the level of training in digital competence in Higher Music Education in Italy, to begin to reveal characteristics and limits and understand in what directions it will be possible and useful to steer further investigations.

We intend to trace the situation that Italian conservatories of music find themselves in, according to the following lines of observation:

1. the realization of digital competence in the range of training offered by

- Higher Music Education;
2. the computerization of conservatories and the implementation of services for teaching;
 3. digital competence in the evolution of a musician's professional profile.

As for specialist musical training and the related disciplinary didactics - just as highly specialised - this means once again combining artisanship and technology in the practical situation of a music and/or instrument lesson. A lesson using technological tools must be able to be inserted into traditional forms of teaching by expanding on the forms and possibilities whenever deemed opportune, without neglecting the essential aspect of the direct encounter - frequently one-to-one - that takes place in specialist musical education.

This study therefore investigates how, in conservatories of music in Italy, correlated and interdependent instances that are realized conjointly are actually interwoven.

On the one hand, the digital competence of musicians, currently called upon to teach in a way they were not prepared for, expresses itself in terms of didactic-technological competence useful for teaching their own discipline.

On the other, the effects that musicians' digital competence has on the training of students - above all where the students opt for didactic training, wishing to become teachers in turn. A teacher who, when compelled to teach music or a musical instrument, is unlikely to meet young students who - as "digital natives" - know how to do everything without the need to learn:

They know better than adults do the services and user interfaces and know how to defend themselves better from con tricks, however, the idea of an "Internet generation" capable of mastering the digital world with their eyes closed is a myth. Most adolescents are ignorant of all of the Web's operational details. Vice versa, as is typical of this age, they are curious and free from complexes, and they do what the young thirsty for experience have always done: they take possession of the new tools that technological development makes available. (Tisseron, 2014, p. 42)

2 The realization of digital competence in the Higher Music Education syllabus

This work, as regards the general pedagogical aspects of the use of digital technologies in education intends to refer to the study carried out among universities by Lovece (2013), given that conservatories of music and universities are both governed by the same regulations on the training of secondary school teachers.

The Italian Ministerial Decree 249/2010 (*Regulations* defining the discipline of the requisites and procedures for the initial training of teachers) sanctions the task of training both music teachers and teachers of instruments from secondary schools to conservatories, redefined as Institutes of Higher Education in Arts, Music and Choreography (AFAM), at university level, by Italian Law 508/1999, while the university still has the task of training music teachers for secondary schools.

Nowadays, digital competence has assumed a role and pedagogical value in the Decree that has redesigned the initial training of all Italian schoolteachers, putting itself in line with what is happening in the rest of the European countries. (EACEA, Euridice, 2011)

Among the objectives of the initial training of teachers, aimed at qualifying and developing the teaching profession through the acquisition of disciplinary, psychological/pedagogical, methodological/didactic, organizational and relational skills, is the acquisition of the digital competence foreseen by the Recommendation of the European Parliament and Council of 18 December 2006, concerning the capacity to use multimedia languages for the representation and communication of knowledge, for the use of digital contents and, more in general, of simulation environments and virtual laboratories. As we know, the Recommendation included digital competence amongst the key skills for permanent learning, useful to achieve fulfilment and personal development, active citizenship, social inclusion and employment.

Hence, digital competence has become part of the syllabus for the initial training of teachers of music and musical instruments, and is included among the pedagogical skills of Conservatory professors - or some of them, at least.

It is included amongst the other skills of conservatory professors, to be developed and become a resource for the entire teaching body: meanwhile, we are aware that gaps in individual ability to use ICT - which can be enormous - have an effect on the working environment.

We need to recall also that all the initiatives of the Italian National Digital School Plan are carried out starting from a development of motivation to experiment with didactic innovation, as well as the former skills on the new technologies of single teachers at primary and secondary schools, within the schools themselves, on a voluntary basis, to achieve the gradual involvement of all teachers and the potential creation of networks of professionals. (Avvisati *et al.*, 2013)

As regards the field of specialist music training and the professors' competence, this study intends to further develop the investigation by Rossi, Bordin, De Cicco (2014), to again investigate the skills necessary for specialist teaching at the reformed Conservatories.

To safeguard the professional profile of the professors themselves also the

conservatories need to state clearly what is expected of the teaching staff in terms of knowledge, competence, and didactic and pedagogical approach.

Unfortunately, the ministerial decree limits itself to stating that the acquisition of the digital competence foreseen by the Recommendation of the European Parliament and Council of 18 December 2006 constitutes an integral part of the initial training syllabus for teachers - yet again taking for granted the digital and didactic competence of professors, along with the pervasive spread of digital culture across all teachings.

It does not introduce a specific discipline - as it could do - and so for the moment, conservatories cannot document digital competence that is common to programmes to train individual teachers, while also lacking a necessary comparison with the objectives of the first cycle of education.

Nonetheless, specific digital competence could become clear on several planes:

1. digital competence of the professors, particularly that of the didactic branch;
2. digital competence of the students, particularly that of the didactic branch.

No regulatory imposition on training or updating exists to date concerning the competence of professors, which, as we know, should transcend that of the student, but be in line with it.

Instead, the existing regulations allow us to focus on the student, particularly in the didactic branch.

We now intend to describe a path that could be taken, hypothetically, within academic curricula, and in particular in training courses for teachers and music instructors.

The table we are presenting (Table 1) is a summary of the correspondences between the uses of digital technology training in digital competence in Higher Music Education.

Table 1
DIGITAL COMPETENCE IN HIGHER MUSIC EDUCATION

	Interpretation	Didactics
Acquiring, processing, interpreting information with respect to scores, musical performances, musicological documents, didactic good practices	by developing strategies of analysis and archiving of audio-video data and musical writings	by developing strategies of analysis and archiving of audio-video data and musical writings

	Interpretation	Didactics
Creating multimedia files for didactics and documentation for music and instrument lessons, performance experiences	by developing strategies of cooperative and collaborative work, for communicative ends	by developing strategies of cooperative and collaborative work, for communicative ends and didactic planning
Becoming familiar with virtual environments for training with respect to specific musical skills of training and performance	by developing strategies to acquire autonomy and feed-back in learning, also with inclusive ends	by developing strategies to acquire autonomy and feed-back in learning, also with inclusive ends
Mastering fixed and mobile digital technologies to manage didactic experiences		by developing strategies to implement and carry out in practice the didactic project in class or on the move
Communicating and collaborating on the Web with respect to the sharing of information, training and performance experiences	by developing strategies for communication and critical sharing	by developing strategies for communication and critical and didactically effective sharing

3 The computerization of conservatories and the implementation of didactic services

The European drive towards the integration of digital technologies with didactics is replete with important regulatory and/or advisory documents.

The KEA European Affairs agency, which deals on behalf of the European Parliament with supporting public institutions in the development of strategies to unlock local cultural and entrepreneurial potential, published a wide-ranging report in 2001, entitled *Panorama of Digital Music in Europe* (KEA, 2001): this describes the state of the musical entrepreneurial class, the latest developments in digital technology, the relevant legislative aspects and the emerging digital market. The role of digital technology is said to obtain the best results in the fields of musical education and research. One part, entitled *A Challenge for Musical Education*, is dedicated to the European situation in Conservatories and stresses that digital technologies are significantly linked to musical creation, and describes a peculiar situation where creation using digital means, traditionally considered part of composition, has been progressively transformed into a field belonging to engineering disciplines, opening the road to a disciplinary dialogue and the definition of a boundary between the artist and the technician. The integration of digital technologies with traditional musical teaching in Conservatories is defined as “very difficult to assess” and the absence of national public policies to tackle this problem is highlighted. Moreover, it is inferred that “a dialogue on the question of how to integrate information and communication technologies (ICT) to teach music has nonetheless begun in the United Kingdom, as it has in Italy”. (p. 60)

In the 2006 Recommendation of the European Parliament on key skills for permanent learning the Council of Europe encouraged member countries to do their utmost to standardize the spread of digital competence.

In 2008, UNESCO outlined a reference framework of Teachers' Skills in ICT, supporting a didactic system that can recognize the pedagogical value of digital technologies.

The Commission's Communication to the European Parliament, the Council, the European Economic and Social Committee and the Regional Committee of 19 May 2010, entitled *Digital Agenda for Europe* (DAE), is one of the seven key initiatives of the Europe 2020 strategy, and lays down some objectives for the growth of the European Union to be achieved by 2020, and was launched on the occasion of the Council of Lisbon in 2007. The DAE was accepted and applied in Italy in December 2012 by the decree *Decreto Crescita 2.0*, of the Ministry of Economic Development. In it, it is postulated that starting from the 2013-2014 Academic Year, all Italian universities must have an electronic record for each student, containing all the documents and data relating to the academic curriculum. This will make it possible to manage a student's entire academic career digitally, without the use of paper, making the entry of students from other universities - also from abroad - easier. The measures encourage a renewal of the educational system, and are necessary steps for a transition towards an informed, standardized use of ICT technologies, by students too. To implement the *Decreto Crescita 2.0* a specific agency was set up to promote digital technologies in Public Administration, the *Agenzia Digitale Italiana*, with a role of governance.

The first significant step in Italy towards a structured policy focussed on the integration of digital technologies in Conservatories was the AFAM Wi-Fi project. This initiative has been promoted to create, extend and complete Wi-Fi coverage, as well as introducing innovative online services of an administrative and didactic nature.

The AFAM Wi-Fi project is part of the eGov 2012 Plan (Objective University) within a wider-ranging action aimed at innovating and modernizing Italian Public Administration.

As for the education sector, the plan contributes to the spread of digital technologies in universities and AFAM institutions. More specifically, AFAM Wi-Fi has permitted the financing of 41 projects presented by Institutions of Higher Artistic and Musical Education (Academies and Conservatories) across the whole country.

A global assessment of the AFAM WI-FI project, written on behalf of the Presidency of the Council of Ministers, reports an important fact: the percentage of students whom institutions allow to access Wi-Fi and Internet, has gone from an average index of 13% to 95%, plugging an evident gap - at least in

this environment - between the Italian situation and that of the more evolved countries in the European Union.

The institutional choices, indubitably based on basic situations that differ widely from institution to institution, directly involved on-line teaching in 20% of the cases, and the retrieval of teaching materials in 35% of the cases. Almost all of the institutions chose to improve their system by acquiring technological apparatus that they lacked, notably improving their equipment, and investing in communication (via websites and Wi-Fi).

The results of the AFAM WI-FI project certainly highlight an ongoing movement towards the functional and integrated use of digital technologies in Italian Conservatories; however, they also spotlight a scarce propensity to use digital means and skills directly in teaching.

Obviously, a redefinition of the didactic skills of conservatory professors has not yet been carried out, even if the new configuration of the didactic life in our institutions presages a phase of transition, which will see the coexistence of resilient situations with pockets of integration of technological knowledge sustained by those professors open to teaching using digital technologies:

- those who will be able to identify the most suitable tools and methods to ensure that the results of learning envisaged by curricula are achieved, also via the pedagogical use of emerging technologies;
- those who will be able to choose and adapt technological contexts and applications to different styles of learning.

4 Digital competence in the evolution of a musician's professional profile

The passage from the possession of basic digital competence to actually using it in the specialist disciplinary sector of teaching music and instruments, nowadays forces a reconfiguration of musicians' professionalism and their role as a professor. The welcoming of digital technologies and their exponential development, which we can only think will bring new conquests in the future, will also mean an increase in a professor's artistic responsibility, together with an implementation of awareness and already consolidated methodologies of music teaching at the highest levels.

Key competences of the future will include the development of innovative methods to use technology to improve the learning environment as well as developing competence in "Knowledge Creation". (UNESCO, 2008; Battigelli *et al.*, 2010)

Nonetheless, the choices of Italian public policies in the specific AFAM sector to deal with this problem have gone in two directions: one structural in support of institutions, and one that indicates curriculum standards for students in the didactic branch, as we have seen.

Once again musicians are left alone, called upon to teach in a way they were never prepared for: from the art workshop - where the musician was in close contact with each student - to collective management of the entire training phase, to the design of curricula in terms of time scale and learning content, and their assessment. (Rossi, Bordin & De Cicco, 2014).

For musicians, however, technological skills already occupy an important place in their own professional sphere: the same that we find in specific teachings in the sector of *Electronic Music and Sound Technologies* being introduced into conservatories - or at least in the larger ones.

It is not necessary that these belong in the same way to all the professors of higher education, and it is not enough that these disciplines are obligatory for all students.

What is indispensable is pedagogical reflection that questions what the cultural and technical contribution of this specialist reflection might be, at a basic or advanced level.

Hence, the musician's digital competence increases. We are in the heart of the "soundtrack" of multimedia: the creation and musical and sound performance and their artisticness.

Conclusion

The debate on digital competence, including its assessment, can be enriched by contributions from different artistic and scientific areas.

From an analysis of the initial training of teachers on two-year teacher training courses at Italian conservatories it is possible to outline - deduced in terms of knowledge and the transmission of knowledge - a rough representation, not exhaustive but oriented, of digital competence in education, in a perspective that integrates the technological dimension with cognitive, ethical and, especially, artistic/musical development.

The results of this work indicate, hypothetically, a way forward for pedagogical innovation within traditional forms of teaching and learning, also by identifying the nature and evolution of digital competence among conservatory professors and the change in a form of teaching historically centred around individual 'doing' somewhere between art and laboratory technique. These results aim to contribute to encouraging reflection inside Higher Music Education in Italy on the use of technologies in disciplinary didactics that stand comparison with what the students encounter and use in everyday life. (Ruthmann & Dillon, 2012)

The educational dialogue must also be triggered through the didactic use of ICT to obtain the result of a lesson controlled in its time scale and progress, and capable of managing the emotional states aroused by a didactic encounter

endowed with rhythm and pathos (Pellerey, 2005). Not using ICT in developed contexts such as those of Europe would determine forms of an “internal” digital divide: between different generations, between territories, between economic/social categories, between institutions and their own members.

This study contributes to feeding reflection on the professional identity and social role of a new class of professors whose digital competence must never fear the challenge of the changes that are galloping ahead with the sustained rhythms of technology, but must be guaranteed at an institutional level by a careful and focussed process of transformation and adaptation of spaces for a new kind of teaching, thanks to an efficient use of digital equipment.

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