Digital education as a catalyst for museum transformation: the case of the “Museums and New Digital Cultures” course

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ABSTRACT

To embrace digital transformation, Continuing Professional Development (CPD) has become a strategic asset. In the cultural sector, new educational needs are emerging around the concept of “digital”, but how to approach them in a way that supports the evolution of previous roles as well as the overall organisational change? This paper addresses the aforementioned issue through the case study of a training programme, promoted by the Veneto Region and aimed at updating the digital skills of the regional cultural workforce. A qualitative study was implemented to explore the impact of such training programme, “Museums and New Digital Cultures”, which involved 120 professionals from 34 cultural organisations, at both individual and organisational levels. The research outcomes show how the introduction and implementation of new digital practices can be a key tool in transforming the individual evolution of different professional roles and trigger a broader organisational change.

ACKNOWLEDGEMENTS

We would like to thank Giacomo Pompanin for his invaluable contribution to the development and implementation of the CPD course. We would also like to thank the participants, without whom this research would have never been possible.
Introduction

The need to develop digital skills and digital confidence in museums has been widely recognised (Parry et al., 2018; Silvaggi and Pesce, 2018) and several research projects have addressed the need to identify a digital framework that can help museum professionals to embrace the digital transformation. The emergence of new job profiles is one of the most visible signs of this revolution, but still more important is the need to rethink traditional practices and to reinterpret previous museum roles and “modes” (Davies et al., 2013). This implies the necessity to not only develop within the organisation an entire set of new tools, but to also undertake a reflection upon digital cultures as a whole ecosystem which, by changing our society, is also transforming the cultural institutions themselves. As a consequence, more than ever before, cultural institutions need to reflect and reshape their strategies in order to develop their own way to embrace the digital transformation, based on their specific context, resources and mission. This emerging need struggles with the traditional hierarchical structure of cultural organisations as well as the standardisation of museum job profiles that do not foster the dialogue between different functions, as well as the interchange - and embrace - of new competences.

Given this context, Continuing Professional Development (henceforth CPD) addressing digital educational needs can have today a fundamental strategic role. However, CDP courses have to be designed not only with the aim of updating digital skills nor fostering the mere adoption of new technology, but to stimulate a broader reflection upon digital cultures, giving museum professionals the opportunity to develop their own strategy to embrace the digital revolution.

In this article, the impact of a specific training programme – “The Museum and New Digital Cultures” course – will be analysed, in order to evaluate its effects on both the individual participants and the overall museum organisation. The course – involving 120 professionals from 34 museums and cultural organisations – was one of the 15 training programmes funded by the Veneto Region between 2017 and 2018 within the initiative “Culture as investment”, aimed at updating the digital skills of the cultural workforce.

The following two sessions are dedicated to an overview of the Digital transformation in museums, and to a brief review of the main theories and dimensions of adult learning that inform CPD courses. Next, a detailed description of the “The Museum and New Digital Cultures” training programme will be offered. Thus, the mixed method design will be presented and both quantitative and qualitative data will be analysed and discussed. Finally, some conclusions about the implications of embracing the digital transformation at both individual and strategic level will be underlined.

Literature review

Digital transformation in museums: from digital skills to digital culture

The museum workforce finds itself in the midst of a cultural transformation, facing the impact of the digital revolution in different areas of the museum sector. As a consequence, new training needs are emerging around the concept of ‘digital’: from the introduction of digital skills to the development of a broader digital confidence and digital thinking within the organisation. In this context, a major project1 was launched in the UK with the aim to develop a museum digital literacy framework for the cultural sector which could possibly be adapted across different nations. The ‘One by One’ project introduces an innovative approach to digital literacy, shifting the focus from digital skills to digital confidence:

This is about shifting from just thinking about the technology and how to use it, to thinking instead about how we value digital, how we manage it, how we think and create with it. It’s about people in museums being informed, reflective, responsive and active around digital. In short: it’s about moving from digital competency to digital confidence (One by One, 2018, par. 15).

This approach is in line with the definition provided by Jisc (Joint Information System Committee), which describes digital literacies as “capabilities which fit an individual for living, learning and working in a digital society. Digital literacy looks beyond functional IT skills to describe a richer set of digital behaviours, practices and identities” (Jisc, 2014, par. 1).

This perspective implies a sociocultural constructivist view of technology: whether technology is seen as cause of cultural change (technological determinism) or a way to adapt to a changing culture

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1 One by One, funded by the Arts and Humanities Research Council (AHRC), is led by the University of Leicester in partnership with Culture24, together with a range of museum and academic partners. The aim is to develop new organisational mindsets in museums to help support their digital transformation needs.
“WHAT IS LESS CLEAR IS TO WHAT EXTENT THE INDIVIDUAL EVOLUTION OF DIFFERENT ROLES IS CONNECTED TO THE BROADER ORGANISATIONAL TRANSFORMATION: HOW A PROFESSIONAL THAT INCREASES HIS/HER DIGITAL CONFIDENCE AND DEVELOP HIS/ HER OWN CULTURAL APPROACH TO TECHNOLOGY CAN AFFECT THE STRATEGIC DIRECTION OF THE MUSEUM”

(technological culture), the concepts of technology and culture interact with each others. As a consequence, both the individual and the organisation need to develop a cultural approach to the usage of technology:

Museums continue to struggle with what it means to be culturally conscious and inclusive regards to their traditional roles and practices, but their speedy entry into the digital age is forcing them to resolve their position on the matter: what constitute their particular museum culture and how that culture determines their usage of technology (Bautista, 2013:29).

This reflection goes beyond the introduction of new skills in the organisation, covering an entire set of new mindsets that substitute previous approaches to audience, heritage and museums themselves2: “This means moving from museums considering their digital challenge as being simply about how they must react to changing hardware and software systems, to more strategically examining how they remain relevant to audiences who are operating within a changing digital culture” (One by One, 2018, par. 14)

Digital culture emerges therefore as a key concept that several authors have explored in a growing body of literature in museum studies, highlighting its different aspects and their related impact on various areas of museum practice: the participatory culture, which is changing the relationship between museums and visitors (Simon 2010; Jenkins et al, 2013; Giaccardi, 2012); the advent of a new audience, online users, who often become the main promoters of museums on the web (Russo et al, 2008; Proctor, 2010; Puhl & Mencarelli, 2015; Fois, 2015); the introduction of the concept of digital heritage, which has extended the curation into virtual spaces by introducing new cultural products and new ways of fruition (Parry, 2007; Geismar, 2018); the new educational needs of digital natives, for whom online creativity and collaborative digital creations are an essential part of the learning experience as well as of self-expression (Palfrey & Gasser, 2008; Mihailidis P. & Cohen, 2013). Exploring the impact of digital culture on each area of museum practice is beyond the purpose of this section. What it should be highlighted is the evolution of previous museological roles in response to these challenges, and how they are connected to the overall organisational change.

In this context, recent attention has focused on the identification of new job profiles in the museum sector (Confetto & Siano, 2017; Silvaggi & Pesce, 2018), and on the development of training programmes to update digital skills of individuals working in the organisation3. What is less clear is to what extent the individual evolution of different roles is connected to the broader organisational transformation: how a professional that increases his/her digital confidence and develop his/ her own cultural approach to technology can affect the strategic direction of the museum.

This article aims at exploring this question by providing evidence that the introduction of new digital practices and ways of working can, in a long-term perspective, be a key tool in transforming the evolution of different professional roles and thus trigger a broader organisational change.

Continuing Professional Development within a lifelong learning perspective

In the proceedings of the conference “La valorizzazione dell’eredità culturale in Italia” (Valorisation of cultural heritage in Italy), Feliciati (2016) claims that, in the last few years, the public debate on the job profiles involved

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2 In this perspective, a fundamental contribution was provided by Davies that identified different ‘modes’ to express the mixture of organizational values: “while we may recognise examples of the kind of behaviours described in actual museums, the modes do not exist in their pure form. In reality, museums appear to combine these modes in various ways, and the combinations will change over time. The value of the abstract modes is in how they provide a framework to analyse behaviour and tensions in a museum context.

3 In a European context, Mu.SA – Museum Sector Alliance – was a three year project (2016–2019) aimed to investigate digital needs of museum professionals and develop a training programme to develop their digital competences, with a particular focus in Greece, Portugal, and Italy.
in the Italian cultural sector has assumed heated tones. Central to the discussion is indeed the dramatic gap between the competences required by the sector and the lack of suitable professional training, at advanced level, for those either working or willing to work in museums. As Macdonald (2011) points out, while museums have undergone major changes, it seems that universities and other educational providers have yet failed to recognise and/or to address them in their professional development courses.

This matter of how to foster professionals’ learning in and beyond the work-place is indeed at the centre of an extensive body of research on the meaning and promotion of lifelong learning. According to the European Council Resolution on lifelong learning (2002): “lifelong learning must be understood as all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective”.

Within this perspective, Continuing Professional Development (henceforth CPD) as a tool of empowerment at both individual and organisational level has received wide attention in the literature on both adult learning and organisational change. In particular, CPD can be defined as “a process of ongoing education and development of professionals, from initial qualifying education and for the duration of professional life, in order to maintain competence to practice and increase professional proficiency, and expertise” (Alsop, 2001: 1).

It is important to point out that there are different definitions and models of CPD, as they depend upon the theory of learning and, specifically, of adult learning, which they embrace. According to Pätzold (2011: 62), the term learning itself “is not so clear once we look at its meanings in different contexts”, where by contexts he refers to the teaching approaches influenced by theories as different as Behaviourism, Cognitivism, Constructivism, and Neuroscience. Exploring these theories and their pedagogical implications for CPD is beyond the purpose of the current section. However, it should be highlighted that each one of them contributes to build a vision of learning as a holistic process, in which different dimensions – personal (cognitive and affective) and sociocultural – are deeply interrelated. Within this perspective, Pätzold (ibid.: 43) defines learning as the “change of the person in the world”, that is: (1) learning is change, “between a status quo ante and a status quo post in the experience of learning”; (2) at the core of learning is the person, which means that “emotions and cognitions are two sides of the same coin”, as they are both affected regardless of the subject matter taught (Illeris, cited in Pätzold, 2011: 94). and (3) learning is situated in the world, as “learning always has to do with a relationship between the person and the world” (Pätzold, 2011: 43).

Moreover, in describing Illeris’ model of learning, Pätzold (2011: 17) claims that “the process of learning consists of two simultaneous processes: a process of interaction, in which learning mediates between the individual and his/her social environment (...), and a process of acquiring knowledge and skills as an evolution of cognitive and emotional perspectives towards the subject matter”.

In particular, in quoting Wenger (1998), MacLeod (2001: 54) highlights that there is a strong interrelationship between meaning making and social practice, as “we operate within the world and make meanings about the world through practice” and “all practice takes place within a range of communities of practice”. On the one hand, experience and practice are two important components of adult professional learning, and only through reflecting on them one is able to develop new knowledge and change his/her mental habits (see Dewey,1938; Kolb, 1984). On the other hand, only when professionals reflect on experience together the real transformative power of learning within a community of practice takes place.

As Hargreaves (2003: 84) claims: “One of the most powerful resources that people in any organisation have for learning and improving is each other (...) Sharing ideas and expertise, providing moral support when dealing with new and difficult challenges, discussing complex individual cases together - this is the essence of strong collegiality and the basis for professional communities (Hargreaves, 2003: 84).

However, MacLeod (2001) notices that the concept of community of practice is not an utopist one, as being part of a community always requires to negotiate, form, and share meanings, as much as different agendas, which are intrinsic to the hierarchical nature of any organisation.

In this sense, a point that is made abundantly clear in the literature is that there is a strong link

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4 In terms of digital economy, Italy has been assigned a low score in the Digital Economy and Society Index Report on Human Capital – Digital Inclusion and Skills (European Commission, 2019), and appears 25th in the index, only followed by Bulgaria, Romania, Greece and Poland.
between corporate learning and organisational change (Deiser, 2009). However, the latter is only possible if the professionals working in the same organisation are able to tear down the system of asymmetric relationships and explore and reflect on new tools and/or actions in a cross-functional manner (Deiser, 2009:49). In fact, what is important to keep in mind for the purpose of the current article is that CPD can only trigger organisational change if it takes into consideration both the individual and socio-cultural dimensions of professional learning.

**Museums and new digital cultures: the training programme**

The "Museums and New Digital Cultures" training programme was devised in order to address the shortage of museum professional courses in the field of digital heritage and digital cultures. This programme was developed in response to a Directive of the Veneto Region (DGR 580, 28th April 2017), which aimed to update the digital skills of cultural professionals working in the region and to take full advantage of the new opportunities introduced by the digital revolution. Referring to the European Year of the Cultural Heritage, the Directive directly mentioned the digital transformation of the cultural sector at an European level\(^5\), "in a historical-economic phase in which there is less support for public budgets, a decrease in participation in traditional cultural activities, environmental pressures on cultural heritage sites and a substantial digital transformation". The text of the Regional Directive recognizes the new opportunities resulting from this change, which can be leveraged only by addressing the emerging educational needs. Indeed, the Directive states that:

\[\text{"According to the Regional Directive, the training of professionals that already operate in the cultural sector is considered the strategic asset that can support the digital transformation as well as enhance the institutional capacity of the cultural actors working in the Veneto Region"}\]

in order to take full advantage of these new opportunities and adapt to the transition to digital and globalization, the cultural and creative sectors must develop new skills and need wider access to credit in order to modernize assets, develop new production and distribution methods and adapt their business models (Veneto Region, 2017).

According to this Directive, the training of professionals that already operate in the cultural sector is considered the strategic asset that can support the digital transformation as well as enhance the institutional capacity\(^6\) of the cultural actors working in the Veneto Region. The Directive invited training agencies to develop training programmes around two main thematic areas: 'Web and Digital' and 'Multimedia'. While the latter emphasised the innovation in the cultural production with the introduction of new technologies, such as 3D graphic and virtual reality, the former proposed a broader view on the sectors of digital transformation, focusing on the digitization process, the advent of open data, and the social media as new spaces to promote cultural heritage, as well as to understand and analyse audiences. The "Museums and New Digital Cultures" course was designed within this area – "Web and Digital".

**The course design**

Promoted by the educational agency "Apindustria Servizi srl", the design of the "Museums and New Digital Cultures" course was assigned to two different project partners who already operated in the Veneto Region in order to take full advantage of these new opportunities and adapt to the transition to digital and globalization, the cultural and creative sectors must develop new skills and need wider access to credit in order to modernize assets, develop new production and distribution methods and adapt their business models (Veneto Region, 2017).


\[^6\] The Route 4 of the POR FSE 2014-2020 includes the institutional capacity described as "an improvement of the capabilities of all the actors working in the education, lifelong learning and welfare and labour policies".
in the field of digital cultural innovation. This paper describes and analyses the impact of 230 training hours that were coordinated by the cultural association ISOIPSE and that involved, from December 2017 to December 2018, 93 participants (among the 120 of the overall course) across 33 cultural organisations of the Veneto Region.

The main objective of the programme was to raise participants’ awareness as regards the “digital” phenomenon, not simply referring to digital tools, but to an entire ecosystem of new cultures, which requires the development of an active, and creative approach. This main objective consisted of the following sub-objectives:

- **Update the digital skills of the cultural professionals in the Veneto Region and introduce digital thinking at all organisational levels (Top Management, Middle Management and Front-Line Staff).**
- **Introduce in the cultural sector new digital practices and cultures that could accompany the institutions in rethinking their heritage, offer, mission, and social role.**
- **Increase the competitiveness of cultural actors, from a network perspective, stimulating a participatory approach in the relationship with the public as well as with the tourist sector.**

To achieve these objectives, and following the guidelines set in the Directive, the course adopted three different types of training intervention:

- **Training activities:** 24 hour training classes with the aim to develop, individually, both digital skills and digital thinking throughout the organisation. In the planning phase of the project, five different modules were designed, corresponding to five different areas of digital transformation.
- **Project work:** 12 hour training sessions, aimed at the development of digital products with the participants. The project planned 5 different project works to be subsequently further defined throughout the course.
- **Consultancy:** individual or group sessions aimed at better understanding the needs of the partners involved (individual sessions) or at addressing the single needs of one of the partners or a common need shared by different partners (group sessions). The course designed 17 two-hours individual sessions, in form of semi-structured interviews, with the aim of mapping and further detailing the educational needs of the 33 partners involved; as well as 5 group sessions of 10 hours, to be designed during and after the single modules in collaboration with the participants.

Course participants had to register for at least one of these interventions: out of 93 participants, 13 took part only in the initial consultancy. The actual number of participants in the training sessions was 80.

The project adopted an ongoing participatory, practice-based, and reflective approach (Flinn & Sexton, 2018) in order to adapt the training activities to the actual needs and context of the participants. To this aim, the following instruments were used:

- **Semi-structured interviews,** in order to explore partners’ needs in relation to the five areas of digital transformation (design stage – from August 2017 to October 2017);
- **Questionnaires,** aimed at collecting participants’ evaluation of the single modules (implementation stage – from January to September 2018);
- **Final evaluation forms to evaluate the impact of the entire training programme on the participants (evaluation stage – December 2018).**

The training activities summarized in figure 2 involved 93 professionals from 33 cultural organisations of the Veneto Region. The organisations were selected during the planning phase, as requested by the cultural association ISOIPSE and the SUMO cooperative. This paper considers the part of the course directly organized by ISOIPSE, that includes 230 training hours and 34 hours of preliminary consultation. This part of the course was designed and implemented by the two teacher coordinators Stefania Zardini Lacedelli and Giacomo Pompanin that involved other experts in each session.

This type of intervention was described in the Directive as “the definition and implementation of a professional project in which users act as operators, addressing existing problems and seeking solutions that are actually feasible and usable”.

In addition to the training activities, an online learning platform was also developed, in order to allow participants to download teaching materials, review the videos of the lectures, and interact with the teachers. The learning platform was hosted by the virtual museum DOLOM.IT (www.museodolom.it/home/moodle), a participatory platform for the experimentation and creation of new digital heritage.
FSE funding programme. The participation was widespread, at both geographical – including partners from the provinces of Belluno, Treviso and Vicenza – and organisational level – including top management, middle management and front-line staff. The training activities were attended by cultural professionals employed in the areas of communication, curatorship and museum education. Of the 93 participants, 20% (n=19) were top managers (museum directors or coordinators of museum networks), 48% (n=45) middle managers (Head of Educational Department, Social Media Manager, Members of the Scientific Committee), and 31% (n=29) were front-line staff (educational operators, volunteers, ticket office staff, civil service operators).

The cultural organizations participating in the course were museums, libraries, cultural associations, cooperative societies, and individual professionals (see Appendix 1). In this paper, the focus is mainly on museums (15 out of the 33 organizations), which all share similar traits (regardless of their status – private, public, or association): a small or medium size; a geographical distribution far from the big city centres of the Veneto Region; a model of governance distributed across different actors (often cultural associations). In terms of their workforce, they are characterized by a limited number of resources, with staff members who tend to be responsible for a number of different tasks, a low workforce turnover, and the fact that apprentices and volunteers are often in charge of ticket office, educational activities and social media.

So, in this type of organizations, managerial level roles and responsibility quite often are not clearly defined. These traits reflect the main challenges faced by small museums in embracing the digital transformation, and thus create a high demand for digital training across all different roles, including top managers (Barnes, Kispeter, Eikhof, Parry, 2018).

The geographical distribution of the organizations involved is summarized in the figure below.

FIGURE 1. THE GEOGRAPHICAL DISTRIBUTION OF THE "MUSEUMS AND NEW DIGITAL CULTURES" COURSE
Source: © Museums and New Digital Cultures project.

10 In the POR FESR funding programme, the actual beneficiaries of the training activities have to join the project in the planning phase. Once the project is started, an organisation can still request to participate but it needs to be approved by the Veneto Region (this was the case of 14 project partners).

11 The classification of each participant was made considering his position and responsibility within the organisation. While Top Management and Middle Management have been widely described in the management studies, the Front-Line Staff category has been drawn upon a recent research in museum studies, aimed to assess the impact of the Transformers’ programme (https://www.museumsassociation.org/news/15012018-researcher-to-assess-transformers-impact).
The five modules

As explained in the previous section, the training activities were designed in two different stages of the project. In the first stage, five areas of digital transformation were identified on the basis of the literature review, whereas in the second stage, these areas were revised taking into consideration the results of the semi-structured interviews, which highlighted specific needs and context of the partners involved, connecting them to specific practical interventions. This allowed to develop both a theoretical reflection upon the main challenges introduced by the digital revolution in the cultural sector, as well as a practical application of the knowledge acquired, by experimenting the new practices introduced by these areas of change.

The five areas and related practical interventions are explained in the figure below.

Museum education in the digital age

This module aimed to address the evolution of museum education with the emergence of new digital methodologies of collaborative content creation and curation. It was designed to help museum educators to employ digital tools in order to involve students in the collaborative creation of digital narratives: multimedia tours, virtual exhibitions, ebook, digital maps, podcast, soundscapes, anthropological video-interviews, blogs. The module benefited from the experience of DOLOM IT, a digital born museum entirely composed by digital resources, co-created with different communities (Szabo et al, 2017). In the project work dedicated to this module, 10 new educational projects were designed and subsequently implemented, taking into consideration the educational needs and relationships with technology of different age groups: from preschools to primary and secondary students.

FIGURE 2. THE FIVE MODULES AND RELATED PRACTICAL INTERVENTIONS
Source: © Museums and New Digital Cultures project.

According to Abenante (2016: 145), in any professional development course, there are two levels that are both necessary and irreplaceable. On the one hand, the theoretical-conceptual level, which aims to give professionals both the cultural background and the methodological instruments so as to allow them to apply an informed and competent practical approach. On the other hand, a practical level, in which professionals put in practice their knowledge. This second level is fundamental for people to successfully enter the job market.
Online public and digital engagement
The aim of this module was to address the revolution in the relationship with audience: from the introduction of a new public – online users – to the new participatory approaches to the museum communication. Professionals were guided to consider the strategic role of social media platforms, not only as spaces to communicate the different activities of the museum, but also to understand different publics and analyse the perception of their cultural experiences. Particular attention was given to specific tools to design a digital engagement strategy that can transform people in "ambassadors" of the institution and create heritage communities. In this module, museums have increased their ability to promote themselves in a network perspective, co-designing a series of digital initiatives on social networks and planning their participation to the MuseumWeek 2018. The project work of this module was dedicated to Digital Invasions, a cultural movement born in 2013 to promote a participatory approach to the promotion of cultural heritage using social media. During this Project Work, 4 digital invasions were planned by participants.

The museum outside the museum: new cultural productions
The aim of this module was to address the issue of evolution in cultural production, and explore new approaches as well as technology available to create narratives and involve public in emotional, interactive and participatory experiences. In this context, particular attention has been given to the evolution of museum conceptualization: how the extension of the museum presence on different platforms and virtual spaces has fostered the idea that the museum is not just the physical building, but it can extend its reach - and cultural offer – beyond its walls. Within this module, new cultural products were designed and created by the participants: a theatrical radioguide in collaboration with La Piccionaia of Vicenza and 5 new multimedia tours on the izi.TRAVEL App, dedicated to the discovery of 5 cultural sites of the Province of Belluno. In both cases, cultural professionals could experiment the interaction with new languages - theatre, digital - and new spatial dimensions that expanded the museum narrative outside its walls.

Digital heritage: copyright and open data
This module was dedicated to the emergence of Digital Heritage and new forms of digital curation. The aim was to introduce a reflection upon the conceptual revolution of heritage as well as on the practical, museological and legal implications of creating and curating new digital resources. The Module involved teachers from the Digital Heritage School - the network for the promotion of 'digital heritage' in the Italian educational programmes - and the Wikipedia community. The project work as well as the group consultancy presented two different tools for digital curation: Omeka, a content management system for the creation of digital archives, and Pinterest, a social media platform that can be used by museums to develop thematic collection in collaboration with other institutions.

Crowdfunding and cultural marketing
The aim of this module was to explore the new possibilities of sustainment for cultural organisations in the digital age, taking advantage of new forms of community involvement. A series of funding programmes were analysed at both international and national level, with particular reference to the European guidelines to support the cultural and educational sectors – Europa Creativa and Erasmus Plus. The module also presented new cultural marketing strategies to involve communities to support cultural projects using digital platforms. In this particular regard, participants were guided in the design of a crowdfunding campaign.

Each module addressed different areas of museum practice, as shown in the figure below.

FIGURE 3. THE INTERSECTION OF DIFFERENT AREAS OF MUSEUM PRACTICE IN THE "MUSEUMS AND NEW DIGITAL CULTURES" COURSE
Source: © Museums and New Digital Cultures project.
The study

The methodology

With the literature review and the aims of the training programme in mind, the overarching question of the current study was: how can museums address the digital educational needs in a way that supports the evolution of previous roles as well as the overall organisational change? The three sub-questions were:

1. Has participation in the training programme promoted the introduction of new practices within the different areas of the museums involved?
2. What impact did participation in the training programme have on individual participants’ conception of their roles?
3. What impact did participation in the training programme have on the overall museum strategy?

To answer these questions, a case study design (Yin, 2018), mixing both quantitative and qualitative data (Creswell & Creswell, 2018), was employed, investigating the impact of participating in the training programme at three different levels: individual (on the single course participants), practical (new practices introduced), and strategic (on the museum strategy). Whilst the decision to focus on the first two levels was inspired by the Directive, the third and last level emerged from the ongoing and participatory process (Flinn & Sexton, 2018), which led to the design and implementation of the training course.

As regards the instrument used to collect the data, an evaluation form was designed. This consisted of three open-ended questions, each of which investigating one of the abovementioned three levels, followed by a five-point Likert scale (1=not at all and 5=very much), aimed at measuring the impact for each level. The aim of mixing quantitative and qualitative data was to get a deeper understanding of participants’ Likert scale scores by integrating them with the respective qualitative responses. Thus, the first question aimed at monitoring the new practices introduced and implemented, as well as at assessing the change on previous operational procedures. The second question aimed at exploring the impact on the individual participants’ perception of their role, while the third question had the purpose of understanding the impact of the training activities on the overall museum strategy, with particular reference to the concept of heritage and museum. As regards the first question, apart from the Likert scale, participants were also asked to list the number of practices implemented.

The evaluation form was administered to all the course participants who attended at least one training (n=80), and 36 responded across Top Management (n=10), Middle Management (n=15), and Front-line Staff (n=11). From these respondents, in particular, only 11 out of 3613 participated in one training intervention, while 25 of them – considered as the more committed ones – took part in more than two interventions. Therefore, all the participants attending more than three interventions filled the evaluation form.

13 It is interesting to notice that these respondents represent 19 out of 33 cultural organizations, of which 11 out of 14 from the museum sector (78%).
From the non-respondents (n=44), 37 participated in one training intervention and only 7 participated in two interventions. This can lead us to say that those who participated the least are also the ones that did not fill the form.

The evaluation forms were designed in Italian, and answers were later translated into English without changing the content and intent of participants’ speech, or putting words in their mouth (Liamputtong, 2011). In so doing, the aim was not to homogenise participants’ voice, but to let their geographical and cultural uniqueness to still be represented.

As regards the data analysis, the results of the Likert scales were analysed using descriptive statistics analysis procedures. In particular, the average number for each scale was calculated and results were presented through a bubble diagram.

On the other hand, the results of the open-ended questions were analysed through using Content analysis\(^\text{14}\). First, participants’ responses were analysed to find repeated patterns of meaning (Liamputtong, 2011). Thus, both initial and axial coding were performed, working from a more descriptive to a more analytic perspective. During the initial coding, the data was grouped and labels were assigned, to be later further categorised. In so doing, the most significant and frequent initial codes were defined. Finally, axial coding was conducted by making connections between major categories and their respective themes (Liamputtong, 2011). In reporting the qualitative results, participants’ ID numbers were used combined with an abbreviation for each organisational role (TM= Top management, MM=Middle management, FLS= Front line management).

### Results

#### Practical level

This level aimed to explore how many and which practices the course introduced, as well as to identify if they promoted a change in the ways in which these organisations work.

Regarding the quantitative results, the course fostered the introduction of a high number of new digital practices (50 implemented, 20 planned; see Table 1), creating the basis for a renewal of the cultural offer. The figure below shows the number of practices implemented and the respective module/area of the cultural offer\(^\text{15}\).

<table>
<thead>
<tr>
<th>Module</th>
<th>Practice</th>
<th>Number</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Museum education in the digital age</td>
<td>New educational programmes</td>
<td>10</td>
<td>Implemented</td>
</tr>
<tr>
<td>Online public and digital engagement</td>
<td>Contest DidaMash DidaDolom MuseumWeek Digital Invasions New Pinterest profiles New Instagram profiles New Google Profile Analysis of online behaviour of users Analysis of TripAdvisor reviews</td>
<td>5</td>
<td>Implemented Implemented</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>1 Implemented, 4 Planned</td>
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<td>Implemented</td>
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<td>New cultural productions</td>
<td>Instant Silent Play Multimedia Tour on izi.TRAVEL Museum app Social media game</td>
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<td>Digital heritage: copyright and open data</td>
<td>Digital archive Thematic collections on Pinterest Virtual Exhibitions Anthropological video-interviews</td>
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**TABLE 1. THE NEW PRACTICES INTRODUCED BY THE “MUSEUMS AND NEW DIGITAL CULTURES” COURSE**

Source: Author’s own elaboration

\(^{14}\) According to Schreier (2012: 170), “content analysis is a method for systematically describing the meaning of qualitative data. This is done by assigning successive parts of the material to the categories of a coding frame. This frame is at the heart of the method, and it contains all those aspects that feature in the description and interpretation of the material. Three features characterize the method: qualitative content analysis reduces data, it is systematic, and it is flexible.

\(^{15}\) A further analysis has been planned to evaluate the resilience of the practices implemented, and will take place in a few months time to verify how effective their implementation has been. However, a first analysis seems to suggest that the practices are now fully part of the cultural offer of the different institutions.
In further investigating table 1, five participants mentioned the participation in the DidaMash DidaDolom contest, which invited museums to reinterpret the captions of some objects inspired by the Dolomites heritage. Other five participants described their participation in the Museum Week 2018, the international week dedicated to museums on Twitter that was planned during the module dedicated to the online public and digital engagement. In particular, between 23 and 29 April 2018, the museums published thematic insights on their social profiles (Facebook and Instagram), which were then collected and tweeted by Museo Dolom.it. Four participants mentioned the creation of new multimedia tours on the izi.TRAVEL app that were created during one of the group consultancies and another participant mentioned the participation in the creation of a new Instant Silent Play. Four participants described the implementation of new educational programmes that involved students in the digital creation of content, as shown in the module, as well as in the Project Work dedicated to the museum education in the digital age. Finally, a participant mentioned the new Pinterest profile set in a group consultancy dedicated to the theme of digital curation, as well as the design of a new digital participatory archive, which was subsequently implemented in a subsequent project.

As regards the Likert scale scores, the overall impact on the practical level was quite high (3.7) and similar across the levels: the highest score is for Middle management (3.9), while it is slightly lower for the Top management (3.5) and the Front line staff (3.6).

Beyond the average scores, the qualitative results well explained differences among the three professional roles in terms of implementation of new practices. In particular, the Front-line staff expressed difficulty to actually introduce new digital practices that were not part of a shared strategy.

**FLS 06**: Unfortunately, many of the concepts explained are difficult to implement in my job context, due to a general mistrust about the new technologies, but I can still propose innovations “in small doses” that can foster a more modern environment for those who work inside the institution and at the same time more easily accessible for those who enjoy it from outside.

This raised the need of having organizational conditions to introduce new digital practices, among which the involvement of all roles across the museum and a strong mandate to pursue digital practices, as highlighted in the One by One Phase Two Report (Parry et al, 2019).

On the other hand, when the practices were implemented, the results show that this allowed to undertake a reflection upon the conceptual revolutions brought by the digital age and practically experiment the implications for each specific institution/context. In particular, the practical use of specific platforms/channels raised a comprehensive reflective approach around different themes, and, above all, the need to develop a different “language” (Jones & Hafner, 2012):

**TM 05**: The Omeka platform has opened a very stimulating and constructive debate on how we intend to communicate our heritage to the public, highlighting how digital culture needs a specific language, partly different from that used in traditional exhibitions.

Indeed, participants often commented on the fact that the internet is characterized by specific discourse features (Crystal, 2001), which differ from the use made by other museums in other, non-digitally mediated contexts.

Interestingly, the use of platforms also fostered new collaborations in the digital domain, introducing a more collaborative approach to curation (Parry et al, 2018). This emerges strongly in the answers of the participants from the Top Management of the training activity dedicated to digital curation on Pinterest:

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**FIGURE 4. BUBBLE DIAGRAM OF THE PRACTICAL LEVEL SCORE RESULTS**

Source: Author’s own elaboration

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16 Once the course was concluded, the Altovicentino Museums applied for a private funding to implement the project of a participatory digital archive, that was subsequently launched in February 2019 (www.omeka.museialtovicentino.it).
**TM 05:** The experimentation with Pinterest was an opportunity to raise the awareness that museums can use social media, not only to communicate and attract the public, but also to share ideas and projects among the museum professionals themselves, who can – in the case of Pinterest – use the boards to share ideas and create new interpretations.

**MM 05:** The stimulation of opening a Pinterest profile has opened a partnership with a school involved in the design and realization of sketches for the advertising campaign of educational projects.

These answers show how the use of Pinterest not only stimulated collaboration across different museum departments, but also between museums and other local partners, suggesting that a platform can also inspire a participatory approach to the creation of heritage (Simon, 2010; Szabo et al, 2017; Zardini Lacedelli, 2018).

In terms of the resilience of the practices mentioned above, a number of participants from the Middle Management show a long-term perspective, describing how the new practices resulted in an enrichment of the overall cultural offer.

**MM 05:** The launch of the izi.TRAVEL tour, always accessible, was done in October of this year, but other dates are already scheduled. In addition of being a game and a new cultural experience in itself, the tour is today used by museum educators to make the museum journey more interactive, during guided tours and workshops for schools.

**MM 01:** In the brochure of the educational offer of the museum - which is distributed in all the schools of the Province – we have introduced new educational programmes inspired by digital collaborative approaches, where the educator, following the museum activity, guides students to develop digital products based on the theme of their visit.

**MM 04:** The project for a virtual exhibition on tourism and cycling is currently being planned.

This is a particularly interesting result. Overall, the number of practices introduced, the high average level of impact and the long-term perspective revealed in the answers show how the implementation of new practices can be a key dimension to connect the individual’s change of attitude (see following section) to a broader organisational change.

**Individual level**

This level aimed at exploring the impact at the individual level (i.e. if the training activities introduced a change of attitude in the participants towards their professional role).

As regards the quantitative data, the Likert scale scores seem to be consistent across all three roles. As shown in the diagram below, the bubbles gather around the same values. This is confirmed also by the average score of Top Management (3.7), Middle Management (4) and Front Line Staff (3.8). These results indicate a very positive level of impact, confirmed also by the overall average score (3.8).

The qualitative data tally with the quantitative data, giving a deeper insight into participants’ positive responses. In particular, five themes emerge from the data analysis: change of perspective, digital confidence, collaborative approaches, enjoyment and creativity, new horizons for the imagination.

In reflecting upon the impact on their individual perceptions, participants across different organisational roles agree that the training course significantly contributed to a change of attitude towards their profession:

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**FIGURE 5. BUBBLE DIAGRAM OF THE INDIVIDUAL LEVEL SCORE RESULTS**

Source: Author’s own elaboration
The course triggered numerous changes in the approach to my profession, qualifying my knowledge and skills in the field of digital heritage.

The answers indicate also an increasing awareness of the evolution of the museum roles, one of the trends recently observed in literature (Silvaggi, Pesce, 2018):

**FLS 07:** My profession is evolving, and an open mind on what are the new perspectives in my sector, can only stimulate a personal as well as professional growth.

With regard to the relationship with technology, the answers show a change of perspective towards the digital world, connected with an increase of digital confidence, confirming the importance to understand the wealth of new cultures and languages of the Web (Parry et al, 2018):

**TM 02:** The course opened our eyes to a world that we had underestimated especially in its potential.

**MM 08:** The course allowed us to learn how to use web programs and platforms competently and more naturally, to familiarize ourselves with the sharing of processes, to cross over and mix different languages and methodologies, giving rise to very stimulating experiences, such as the creation of a Silent Play.

It is noteworthy that the increase of digital confidence is often accompanied by the introduction of new collaborative approaches, as noted above (practical level):

**FLS 04:** The union and the group strength allow us to develop different ideas, obtaining a collective working. Each one contributes with his/her own capabilities and we collaborate all together to overcome the technical and operational difficulties of new technologies.

Interestingly, the interaction and gradual integration of digital in the previous practices seems to leverage a positive creative atmosphere: enjoyment, creative freedom, satisfaction and excitement are frequently mentioned in the answers.

**MM 01:** A common factor of all the experiences of working with digital tools is the fun and the satisfaction you receive in creating and reinventing heritage. There is an atmosphere of involvement and inclusion, enjoyment and creative freedom.

In particular, one of the major benefits of the introduction of digital technology seems to be the opening up of new possibilities: digital as a powerful imagination tool that can help to see previously unknown scenarios, as well as to imagine new shapes for the museum itself.

**MM 13:** It has opened up new possibilities, created excitement for new ideas and new possible “edutainment” scenarios, to which I probably would not have had access without this opportunity.

**FLS 07:** It was fundamental to get a new perspective of the museum space, no longer confined to the physical walls, but facing outwards and increasingly looking for new ways to express itself.

This creative perspective on digital is confirmed also by the model developed in the Phase Two Report of One by One (Parry et al, 2019), which includes the imaginative relationship as one of the four components of any active individual relationship with the digital.

**Strategic level**

This level aimed at understanding the impact of training activities on the overall strategic dimension, to see whether the course affected the future strategic direction. In particular, the aim was to identify changes in what Davies et al (2013) calls museum “modes”, with particular reference to the meaning of heritage, the relationship with audience, and the concept of museum itself.

Taking into consideration the quantitative data, the overall average score (3.5) tends to confirm a certain level of impact on the organizations involved, even if slightly lower than in the other levels. The Likert scale data seems to show a relevant difference between the answers of participants according to their roles within their respective organisations. In fact, as shown in the bubble diagram, the average score decreases depending on the managerial level: it is quite high for the Top Management (3.8), slightly lower for the Middle Management (3.6), and even lower for the Front Line-staff (3.1). Nevertheless, with particular reference to the Front Line Staff and Middle Management, there was a significant number of non-responses or partial
responses (four people who answered only in the qualitative section ignoring the Likert scale and two people seem to have misinterpreted the strategic theme and the question proposed). This suggests to interpret carefully the data jointly considering the corresponding qualitative answers.

Specifically referring to the Front-Line Staff, the reason behind their non-response, as expressed by the respondents themselves in the open-ended section of the question, tells us that part of these people do not consider themselves to be in the position to influence the overall museum strategy.

**FLS 02:** Since we are external collaborators, not structurally included in the managing body of the museum, our ability to influence the museum’s strategy is almost close to zero.

On the one hand, the Front-line staff is not commonly involved in the definition of the organisational strategy; this is an obstacle to an effective digital transformation, that requires an interdependence between individual and organizational change (Parry et al., 2019). On the other hand, the strategy is not always made explicit (Mintzberg & Waters, 1985), as specific actions can become part of the strategic direction, even if they are not planned and implemented as part of a deliberate plan. Considering this implicit dimension of the strategic process, the introduction of digital practices seems to have a significant ability in influencing the overall cultural offer and become part, in a long-term perspective, of the museum strategy.

This is confirmed by other evidence, which shows a strict connection between the practical and strategic level, that is the strategic implication of the introduction of new practices:

**TM 02:** Overall, the museum has become much more interactive also through the “high digitization” proposals that allow us to produce new digital heritage and to involve young people, different from our usual target.

Considering the answers of the participants that assigned a high impact score (mostly Top management), a series of themes emerges: participatory approach to museum and heritage, re-thinking of audience, network approach, new ways of working, time for assimilation.

The training programme seems to have played a fundamental role in introducing a new approach to some of the key concepts that guide the mission of cultural institutions. In particular, the participatory nature of both heritage and museum was clearly recognised:

**TM 10:** Heritage is no longer understood as the set of objects to be exhibited only inside the showcases and where the visitor is a passive spectator but, thanks to social platforms, also as an opportunity for in-depth learning, as a knowledge experience where the virtual visitor can become an active protagonist.

**TM 07:** A key point was the awareness that the museum should be a participatory institution that involves its visitors, that provides them experiences and emotions. This is probably the most complex challenge, but the collaboration among museums, cultural and social professionals can encourage this process of change.

Connected to this, a change of attitude towards public is revealed across different answers, showing how opening up new digital opportunities naturally leads to rethink audience development in light of the different nature of online public, considering the different needs and expectations of the users and planning new engagement strategies accordingly:

**FLS 07:** The course led us to look beyond the visitor who physically goes to the museum, and address those who, through digital tools, search for information, knowledge, and now increasingly requires an emotional connection with the collection.

The reflection upon digital engagement strategies often led to a renewed attention to external stakeholders as potential partners in digital projects.

**FIGURE 6. BUBBLE DIAGRAM OF THE STRATEGIC LEVEL SCORE RESULTS**

Source: Author’s own elaboration
The introduction of a network approach emerges across different answers:

**MM 15:** The simple fact of creating a network with other cultural institutions is useful to develop the digital presence of the museum.

While in some cases these changes of attitude remain at a conceptual level (Tamma et al., 2019), in others they are accompanied by an evolution of previous ways of working. The awareness of the new museum ‘digital presence’, for example, often has practical implications:

**TM 02:** The course encouraged us to review our communication channels that we previously underestimated and/or ignored: in these months we have rearranged and implemented them, with the aim to create a coordinated image of the museum at all levels and to firmly manage from the inside.

These findings confirm how digital education in museums need to be purposeful and values-led (Parry et al., 2019): any reflection on digital transformation goes far beyond a change in technologies and ways of doing, because it embraces what it means to be a museum today.

The fact that some institutions assimilated the change of perception quicker seems to depend on a series of factors (among them the abovementioned role within the institution). The answers of Top management participants, in fact, show an overall higher impact and greater uniformity across different levels. However, as already noticed in the analysis of the practical level, time seems to be a key element for any digital transformation. As argued by participants, on the one hand, innovations require time to be assimilated, and, on the other hand, there needs to be ongoing experimentation of the new practices introduced and the progressive inclusion of all the other members of the organisation.

**MM 13:** Above all, the course has laid the foundations for a new mental form which, it is hoped, over time will eventually become a way to modernize some obsolete practices of understanding communication, both outside and inside the museum.

**MM 13:** For now our intentions for the future are positive: there are many projects, many of them originated from this course. Their implementation will be the result of constancy and continuous involvement of the staff (as well as the willingness of the top management, which should not be underestimated).

**Conclusions**

As the analysis of the literature has shown, the urge of museums to adapt to a changing digital culture is widely recognised, and so is the necessity for previous roles to evolve. What is less clear is how to address the new educational needs of the individual professionals that work in the cultural organisations in a way that also supports a broader organisational change. This paper tried to address this issue by analysing the impact of a specific training programme, aimed to update the digital skills of the cultural workforce of the Veneto Region in order to support the digital transformation of the institutions involved.

The results show how the impact on the individual dimension was clearly positive and consistent across different roles, showing similar patterns: a change of perspective towards their profession, an increase in digital confidence, the introduction of new collaborative approaches, and how embracing the digital revolution fosters an atmosphere of enjoyment and creativity and opens up new horizons for the imagination, as suggested by other studies (e.g. One by One reports). Interestingly, the perception that the individual evolution and the introduction of new digital practices can contribute to a broader organisational change is not consistent across different organisational roles. This is due to the fact that while Top managers’ change of attitude towards museum and heritage corresponds to new collaborative and networked ways of working and to a “digital” evolution of the museum cultural offer, Middle managers and Front line staff are more doubtful as regards the possibility they have to shape the future direction of their organisation.

As a result, two fundamental conclusions can be drawn.

First of all, the introduction and implementation of new digital practices can play a fundamental role in adapting the overall cultural offer and affect, in a long-term perspective, the museum strategic direction. As shown by the data analysis and discussion, the experimentation and adoption of new practices stimulated a rethinking of previous ways of working, laying the foundation for a broader organisational change.

Secondly, this practical level needs to be accompanied by a cross-sectoral reflection on the new practices introduced. As shown in this study, not all the
museum professionals thought that their professional evolution could trigger organisational change. The hierarchical and departmental structure of traditional museums minimised the transformative power of both individual evolution and the introduction of new practices. In fact, CDP can be a key tool to support the overall digital transformation if it is designed in a way that increases opportunities for interaction across different organisational roles, stimulates the inclusion of both Middle management and Front-line staff in the development of the cultural offer and, finally, introduces a new interdisciplinary and cross-sectoral approach to the organisation itself. In this sense, from a managerial point of view, organizations would benefit from the adoption of tools that allow their members at different managerial levels to share strategic direction more effectively.

It must be noted that the study was exploratory in nature, small-scale, and context-bound. However, the responses are indicative of a trend, even if not unanimous at all managerial levels, that the training programme led to organisational change to some extent. Thus, the current research succeeds in showing how digital education can be a powerful catalyst for a transformation of the overall organization that goes far beyond the digital realm. Further research is needed to (i) investigate the long-term sustainability of the digital practices implemented, and (ii) extend the generalizability of the findings, by conducting other similar studies involving museums with a different digital experience.

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To cite this article:

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