Chapter 21
Educommunication Web 2.0 for Heritage:
A View From Spanish Museums

Pilar Rivero

https://orcid.org/0000-0002-6757-7598
Research Group ARGOS, Environmental Sciences Institute, University of Zaragoza, Spain

Iñaki Navarro
University of Zaragoza, Spain

Borja Aso
Environmental Sciences Institute, University of Zaragoza, Spain

ABSTRACT

Museums have now been using social networks for nearly twenty years. While they began by engaging in activities characteristic of web 1.0, they have come to learn how to adapt to the new digital landscape. They are now fluent in the language and conventions of each social media platform and post content on a daily basis. The 2005 Faro Convention is partially responsible for urging museums to develop these new online strategies. The present chapter examines how large institutions are capable of generating daily content that is both multiform and attractive, but which barely encourages the exchange of experiences and opinions between users. Interestingly, it is in the local heritage-based cyber communities that we find the creation of authentic educommunicative spaces that are even capable of moving action from the digital realm of social media into the physical world.

INTRODUCTION

Both widespread technological improvements as well as the fact that an increasingly large portion of the public now has better access to technology have revolutionized our way of engaging with heritage over the last twenty years. This is especially the case in the wake of the rise of the web 2.0 (also known

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as the social web), where interconnected users jointly communicate, share, spread and create content and where we can observe the humanization the network, a trend that has encouraged the sharing of personal experiences. That said, the question remains whether this new method of cybernetic interaction actually boosts processes of "patrimonialization," that is identifying and assigning symbolic value to particular heritage items (Fontal, 2013). In other words, does this new cybernetic landscape provide novel opportunities to generate new information about and awareness of heritage.

Since the Faro Convention (Council of Europe, 2005) in which it is stressed that the creation of digital contents should go hand in hand with—and not simply replace—the physical conservation of existing heritage, the digital preservation of heritage has become a practice established in various national and international initiatives led by networks of institutions, such as museums and libraries. Such initiatives seek to document and catalogue heritage as well as to provide public access to various museum collections. In Spain, for example, the CERES project provides access to all the collections held in Spanish museums. Over the last few years, a large portion of the public has stopped using computers to surf the Internet and now rely on mobile devices (whether phones or tablets) to do so. This shift has had the consequence that many large institutional databases and websites that catalogue, explain or interpret heritage are being used less and less, since they are not technically compatible with mobile devices or, at the very least, are not mobile friendly. It is now specialized users principally visit such databases, which means that they are losing their educommunicative potential and are progressively inaccessible or unattractive to more general users, both because of the complexity of their content as well as technical difficulties inherent in accessing these resources on mobile devices. The point to stress is that digital preservation on its own does not encourage heritage-based educommunicative processes. To do so requires a further step.

The goal is to develop and disseminate educommunicative processes through already established heritage-based cyber communities that are populated by users who come together on social media thanks to an interest in heritage and a desire to defend it. Within such communities users share and generate new content about the heritage item(s) that bring them together.

THE ROLE OF THE INTERNET USER: FROM PASSIVE SUBJECT TO ACTIVE CITIZEN

Throughout history, every new means of communication has sparked debates about the effects that technology has on society. On the one hand, there are the pessimistic sceptics who worry that new forms of communication will ruin traditional means of interaction, if not (in the most hyperbolic and apocalyptic version of the argument) lead to humans beings to cease interacting with each other. On the other hand, optimists project that new innovations will actually increase and complement the traditional ways that people establish connections with others (Christakis & Fowler, 2010, p. 266).

One of the topics discussed in the Faro Convention (Council of Europe, 2005) is precisely the potential use of technology to move towards a more natural means of communication. The mass introduction of mobile devices (whether smart phones or tablets) over the last several years has made it possible to access digital documents from just about anywhere. Furthermore, mobile devices brought about significant improvements in communication systems: interface improvement, for example, has led to a simpler and more natural type of communication, through the use of touchscreens (which are visually quite attractive) or improved voice technology. The ease with which we can access different applications now allows

us to find needed information immediately, which has resulted in users acquiring new educational and touristic skills that help interpret heritage (Cameron & Kenderdine, 2007).

This type of communication, which is both more natural and rapid, however, has not eradicated the existing digital divide on a geographic level: there has not been an equal number of new projects or initiatives across the globe, a fact that must be explained by a slew of historic, economic and cultural reasons, ranging from the lack of means to voluntary isolation. At times this has been interpreted as a refusal to embrace the total interconnectedness promised by the network of networks. Put simply, we are still far from fully knowing and integrating regions that we had thought were getting closer and closer, such as China or large swathes of Africa.

There also continues to be a visible divide on the societal level: age remains a defining factor that strongly correlates to both an individual's amount of "digital consumption" as well as the ways in which and purposes for which individuals use devices. It is quite interesting to observe how various generations have gone about integrating themselves into the digital landscape in, at time, opposing ways: while pre-Internet generations largely use their real identity online and use the net to search for information related to personal preferences and concrete needs (just look at the number of websites meant solely to provide information about a given topic), the generations of "digital natives" have chosen to unite anonymously on social networks which are characterized by an extreme concentration of content, undoubtedly due to the feeling of being inundated with information and the sense of immediacy that digital consumption entails. This new tendency has given rise to what can be dubbed "the culture of virality", which is characterized both by immediate yet ephemeral global repercussions and also by a not infrequent disregard for the truthfulness or authenticity of content (a phenomenon popularly referred to as "fake news").

As Internet users, human beings have ceased to be passive consumers and have discovered and taken up new roles as transmitters, distributers and even producers of content. The proliferation of roles, which are by no means mutually exclusive and which in fact Internet users simultaneously play, has transformed consumers into "prosumers," a term coined by Alvin Toffler in his 1980 book *The Third Wave*. The notion of the prosumer combines together the ideas of the consumer and the producer of technology that was foreseen by Marshall McLuhan and Barrington Nevitt in their 1972 *Take Today* (p. 4). The idea of the prosumer perfectly jibes with the concept of "emirec," which Jean Cloutier coined in 1973 to describe the individual who was at once a transmitter and receiver. Aparici and García-Marín have compared and juxtaposed the two notions in order to underscore how Clouter came from a communications background, while the term prosumer encapsulates the concept of economic production that is alien to the logic of the market (Aparici & García-Marín, 2018).

Today, network users generate content based on their own experiences, lives and/or beliefs (Ellis, 2011; Carrillo, 2014), all of which undoubtedly serves to emancipate and empower Internet users who ought to make good use of the new methods of communication and technology in order to strengthen their critical autonomy and increase their participation in all sorts of questions ranging from the political to the ecological and intercultural (Gozálvez & Contreras, 2014, p. 130).

This sort of civic participation in the creation of digital content undoubtedly has also had an effect on heritage. This can be seen in the development of the already consolidated social web where users do not simply content themselves with sharing images with brief comments on Facebook, Twitter or Instagram, but where they also open themselves up to participate in activities like archival work, analysis and the dissemination of heritage through the launching of civic-science projects focused on heritage. While we can find many good examples across various European countries, one interesting case is the MuralHunter project from Spain that catalogues, digitally preserves and analyses urban murals (Rivero

& Gil-Diaz, 2016, 2018). The project is conceived of as a civic-science initiative, since the users, who are not required to have any specialized training, are the ones who geolocate their own photos of artistic murals, either from their mobile devices or computer (using the MuralHunter app, which makes use of mobile devices' locational information or through the "mural" section of the website http://civitas.unizar.es, respectively); furthermore, users contribute information, such as personal comments, to help catalogue the murals. Given that many users can upload various pictures of the same work, it becomes possible to follow the evolution of a particular mural from its creation to, in certain cases, its disappearance or substitution with a new work of art painted on the same wall. Accordingly, an otherwise ephemeral work is able to live on in the digital realm. This project continually seeks to create a catalogue of urban wall art from around the entire globe. Since it does so through a collaborative civic-science approach that involves a high level of creative interaction, the project also aims to foster the creation of an international heritage community structured around an interest in urban mural art from the world over. Accomplishing this goal requires active citizenship geared towards the protection of heritage and the "patrimonialization" of urban murals. By mid-2018, a year after the project was first launched, the online community had catalogued 855 works, 781 of which are found in Spanish cities, the country in which the project began. Generally speaking, citizen participation in the wake of the web 2.0's appearance has led to a rise of virtual communities or cyber communities built around a more or less concrete topic or interest. In these communities individuals interact with culture, the environment and with other users (Maldonado, 2015, p. 89). At its origins nearly twenty years ago, before it was dubbed "web 2.0" and before the existence of the easy types of multidirectional communication that today social networks offer, Adell described this phenomenon in the following terms:

Groups of people who share an interest and who use information networks as a cheap and easy means of communication between individuals who are quite spread out and do not live in the same time zone (Adell, cit. Área, 2001, p. 120).

Some ten years later, authors like Moya spoke of virtual communities as "spaces conducive to personal relationships that are established between stakeholders and an organization… virtual communities are relationships in which individuals share ideas and opinions" (Moya, 2013, pp. 15-17).

The nuance is interesting: technological globalization has led to the disintegration of spatial and temporal barriers and instead has opened up the possibility of users who are connected from any point on the planet and who continue to establish connections based on their interests and worries.

Unfortunately, this mode of participation also leads to a process of isolation for users who are interested in topics that are increasingly specific and specialized. Users attempt to find comfort zones structured around their interests where they will be able to avoid the growing hostility often found on the web 2.0. This undoubtedly points to an educational problem: a lack of constructive debate and critical thinking. As we have stressed, all of this gives rise to a society in networks that is characterized by the proliferation of isolated archipelagos of opinion and a continual feedback loop of support within these small virtual nuclei.

We must add to this final point that online conventions, which generate their own lexicon and methods of labelling and grouping content, tend to be aggressive due to the protective cloak of the anonymity that social networks provide. This often results in two possible types of behaviour: the fear of sharing one's opinion in face of possible confrontation or, alternatively, the attempt to receive superficial and easily quantifiable approval that can come in the form of likes or Retweets.

The response to seek out isolation and to take refuge in a comfort zone located in the virtual world can be understood as a reaction to an over exposure to social media and the glut of information to which Internet users are regularly subjected. Put slightly differently, as networks have evolved at a breakneck speed, the average user and institutions have had to continually adapt and/or improvise after having been overwhelmed by a new world of possibilities that was previously unknown and shows no sign of slowing down.

After nearly a quarter century of living with the network of networks, the educational system has also entered into this whirlwind and has been in the process of evolving the best it can. This is what previous research has defined as moving from ICTs and educational technologies to finally arrive to technologies for participation and empowerment (Cabero & Barroso, 2015).

This form of empowerment based on networking should transform digital citizens into critical beings who can even aspire to take part in digital activism, which is understood as an Internet user who is capable of using the possibilities offered by the network to fight for equality, social justice and protecting heritage (among other things). Technologies are moving towards renegotiation of what coexistence means: instead of reproducing the established order of things in physical spaces, now we see the rise of a new type of coexistence that is transformative, reflexive and critical (Correa, Jiménez de Aberasturi& Gutierrez-Cabello, 2018).

EDUCOMMUNICATION AND HERITAGE-BASED CYBER COMMUNITIES

The Rise of Heritage-Based Cyber Communities

The birth of a cyber community that is intellectually and emotionally held together by heritage does not simply require an institution that diligently generates and publishes content on social media, but also needs, by definition, the active support, following and participation of the rest of the community of Internet users. Only when these elements all come together consistently over time can we truly speak of a heritage-based cyber community.

There is no reason that a heritage-based cyber community must coincide with the physical community, given that the community can have members who belong to both cybernetic and physical communities or to just one of them. Independently of whether or not members belong to both facets, the creation of a cyber community that constructs its own meaning around real experience resembles an ant colony, where every individual action—no matter how small—influences the evolution and dissemination of the information that the community as a whole generates (Forte & Bonini, 2010).

The Convention on the Value of Cultural Heritage for Society, which was signed in Faro in 2005 by the Council of Europe, was the first time when the concept of heritage community was understood as "a group that values specific aspects of cultural heritage and that seeks to protect and share that heritage with future generations." This also entails the need for public participation in decision making about cultural heritage, which would also lead to greater social cohesion through the promotion of shared responsibility for inhabited spaces (Cimadomo, 2016).

Faro came to capture and propel the efforts collected in, for example, *Participación ciudadana, patrimonio cultural y museos. Entre la teoría y la praxis* (*Citizen participation, cultural heritage and museums: Between theory and practice*; Arrieta, 2008), where the needed actions structured around the notions of both citizen and local participation and engagement in heritage projects are also outlined.

The protection and sharing of local heritage are only several of the motives that led to the rise of more or less local virtual communities built around either a specific heritage item or a nucleus of determined interests. Maceira has reflected on the social dialogues in heritage contexts in the following way:

The group that sets into motion heritage actions considers itself as the bearer of memory and is connected to heritage to the extent that it feels responsible for and is able to link itself with that heritage: the group identifies with it, builds up features of identify for itself: that is, objects that incarnate or evoke the group's memory. By doing so, a collective is formed, important spaces for citizen participation are made, the social fabric is reinforced if not made anew and regional and local networks are activated… (Maceira, 2008, p. 45).

Today we are able to highlight truly notable examples in which large-scale projects with financial backing have been able to kick-start groups dedicated to the protection of local heritage. We can look, for example, to the case of Romania with the Roșia Montană mines (Montana, 2014) or to Morocco where cultural tourism has furnished as an opportunity to improve the living conditions in a particular area (Hamdouni Alami, El Khazzam, & Souab, 2017).

Leaving aside the use of platforms like Change.org or the dissemination of petitions on the social media accounts of NGOs, in Spain there are examples of several fascinating communities that have sprung up around heritage: "Huelva te Mira," for example, arose in 2016 as a citizen response to the pillaging of the site La Orden-Seminario in Huelva. This activist and constructivist movement, open to the general public and built by people from different professional backgrounds, employs a horizontal and participatory model based on teamwork and collaboration; it has sought to recognize, protect, appreciate and share the cultural landscape, demanding from local institutions an effective tutelage of heritage and encouraging the active participation of the community in the running of the site and decision making process. On-the-ground action and tactics are shared, amplified and subject to debate on the group's official Facebook page, which has more than 4,000 followers (Huelva te mira, Instituto Andaluz del Patrimonio Histórico. 2018. Retrieved from https://www.iaph.es/web/canales/formacion/cursos/Redactivate/huelvatemira.html).

Following Maldonado (2015, p. 122), there can be absolutely no doubt that today the twenty-first-century public has changed how it relates to culture: it has come to demand much more interaction and participation with issues of heritage. This springs from the desire to seize it, understand it and appreciate it.

This manner of taking control is a response to a globalization that, having imposed it hegemony, provoked the resurgence and/or reaffirmation of the local elements of identity, which find in heritage (whether material or immaterial) the opportunity to shine a light on the ways of finding others who share the same physical and spiritual connections. What is the spark that ignites this light? An external threat such as the demolition of a historic building? The commemoration of a historical event? The desire for more tourists who can provide a stimulus to the local economy?

On the one hand, it is the state that, in accordance with its many and diverse interests, that doles out economic resources meant to protect, study and promote heritage. Yet at the same time and much more interestingly, it is also the free and empowered citizen body that chooses to ignite these lights and has learned to exploit new spaces such as the web 2.0 in order to turn up the wattage on this searchlight. This allows communities not so much to make an issue "go viral" (since this has the connotation of being ephemeral and fleeting), but rather to muster the force needed to keep an issue in focus for the period of time required to accomplish a desired outcome.

Educommunicative Processes in the Social Web

Heritage Educommunication, especially on the web 2.0 or social web, belongs under the umbrella category of what today is called Heritage Education. While the concept of "Heritage Education" is quite broad and relatively new (in many educational programs language like "Heritage Didactics" and "Heritage Pedagogy" still endures), the first mentions of this concept in the Spanish context cropped up in 2003 in certain debates within Heritage Didactics and Museum Studies. After more than a decade of scholarly research, Heritage Education can now be considered as a budding academic discipline in its own right (Fontal & Ibañez-Etxeberria, 2017)

But what exactly does Heritage Education mean? Following Martín-Cáceres and Cuenca, it can be defined in the following manner:

A discipline that seeks to analyze and develop educational projects (in formal, non-formal and informal educational contexts) that are investigative, interdisciplinary and socially critical and in which the design and development of goals, content and methodological strategies contributes to the construction of shared values, all of this while also promoting intercultural respect and social change as well as moving towards the training of a socio-culturally engaged citizenship. (Martín-Cáceres & Cuenca, 2015, 38)

In this sense, over the last several years there has been a remarkable proliferation of studies and research projects that focus on heritage (Fontal & Ibañez-Etxeberria, 2017). That said, this area does not simply seek to examine heritage from a formal or academic viewpoint (i.e. historical or art historical studies of heritage artifacts, the creation of catalogues, etc.), but rather has come to focus on a more educative aspect: an awareness of heritage's social relevance has led to the generation of numerous initiatives for formal and informal educational contexts, as Martín-Cáceres and Cuenca (2015) have rightly noted.

Having said that, when we turn to Heritage Educommunication, we are aligning ourselves with an educational model based on Communication Theory, which itself is buttressed by ideas such as Deleuze and Guattari's rhizomatic theory or Freire's pedagogy (Venancio, 2016) that provide fruitful theoretical models for explaining educommunicative processes on the social web—even if these ideas were formulated long before the emergence of social networks. When analyzing the type of communication that takes place on social networks, we see that a valid theoretical model can be found in the rhizomatic production of knowledge, which entails a seamless plane of communication that is characterized by diversification, multiplicity and unpredictability (Deleuze & Guattari, 1976). That is, by applying this philosophical concept to social networking, we are able to say that there are no defined rules in the communicatory process that have clearly determined objectives or regulated activities and initiatives; accordingly, the communicative plane is not grooved, guided or regulated, but rather smooth, open and without restrictive guidelines. As a result, the various interests and anxieties of those contributing to a thread can spin off into a multiplicity of other topics of conversation: some will be activated while other will be deactivated and some lines of debate will overshadow others. In Deleuze-Guattarian terms, they develop along a rhizomatic model that resembles a ginger root: this is a type of knowledge that does not grows in any ordered or predetermined manner, but rather is spontaneous, unpredictable and multiform—though it is always connected with what came beforehand, with the thread from which it originated.

Furthermore, we must add that to achieve deep and meaningful heritage education, there ought to be a dialogic mediation between educational and cultural institutions, society and heritage. However, not all communication is educative; in this sense, we follow the work of the Brazilian educational theorist

Paolo Freire in order to stress the communicative conditions for necessary obtaining educommunication: democracy, horizontality, activeness, directness, bi- or multidirectionality, dialogue, collaboration, transformation and critical analysis (Freire, 1973). If we want to educate by means of communication (i.e. to educommunicate), something that we must strive towards, we must necessarily first meet these conditions. It is at this point that social networks 2.0 (e.g. Facebook, Twitter and Instagram) emerge as potentially fruitful tools for educommunication that could satisfy Freire's criteria. When the educommunicative process unfolds, it generates rhizomatic knowledge. That said, social networks' range of privacy settings can limit and even curtail communication in so far as they can import into a network the old communicative modes from the analogue age, which in turn can lead to the loss of the spontaneity and unexpectedness of the creative interaction that takes places on the web 2.0. In other words, educative potential can be lost.

Methodology and Objectives

Nowadays, the success and repercussion in social networks of a certain institution is attributed to the number of followers or the virality reached by some of its publications. For this research have been selected the most visited museum institutions in the last year in the entire planet which have official profiles on Facebook, Twitter, Instagram and/or YouTube. This strategy has been applied also to Spanish museums to finally be able to make a comparison at least superficial between institutions with similar characteristics.

Thanks to the large number of online tools for statistical studies on the net, we can obtain an exhaustive analysis of almost any feature we want to observe from a profile on social networks. For this research, following previous studies such as Fani Sánchez (Maciá and Santoja ed. 2016), sections have been selected as: number of total followers, number of publications, number of publications shared by other users, number of comments, etc. Finally, among the most interesting options in the network for statistical analysis in social networks, we have chosen the tool provided by fanpagekarma (www.fanpagekarma.com) that allows, among other things, to visualize in real time or make a historical analysis of data related to the number of followers, daily activity, etc.

The objectives of this research can be summarized in two. On the one hand, obtaining a first photograph of the degree of visibility and impact that the most visited museum institutions in their physical space have in the virtual world as well as a statistical summary, because the content is not analyzed, of the daily activity They have. On the other hand, the other major objective that justifies the bibliography selected for this research is the comparison of the main international museum institutions with the most important Spanish institutions in terms of their activity in social networks is always referred to within the field we call Heritage Education and Educommunication web 2.0.

SPANISH MUSEUMS IN SOCIAL NETWORKS: A PRELIMINARY ANALYSIS

Educommunication web 2.0 is now an active field of research in Spain. Although there is a continually rising number of studies in this area, educommunication web 2.0 continues to be a small area of research under the larger umbrella of Heritage Education in which new perspectives and research questions are emerging. While generally speaking research in Heritage Education in Spain has become consolidated due to the work of scholars such as Asensio, Cuenca, Calaf, Estepa, Fontal, Ibáñez-Etxeberría, Llonch,

Martín-Cáceres, Rivero, Pol, Santacana and Vicent among others. Heritage Educommunication has yet to gain such a solid footing in the scholarly community, simply due to the fact that it is a budding and innovative area of research. That is not to say that there is not a burgeoning bibliography thanks in large part to the abovementioned researchers as well as the doctoral theses written by students who are part of those researchers' projects.

Among the recent doctoral dissertations whose rigorous and pioneering analysis provides good models for future study, we must mention the following: Maldonado's *Educación patrimonial y redes sociales* (Heritage education and social networks); Asenjo's *Aprendizaje informal y nuevas tecnologías: análisis y medición del constructo de interactividad en contextos de exposición del patrimonio* (Informal learning and new technologies: An analysis and appraisal of the construct of interactivity in the context of heritage exposition); Llerena's *La comunicación de los museos españoles en Twitter: análisis de la situación y buenas practices* (Spanish museums' communication on Twitter: An analysis of the situation and best practices); Fernández del Castillo's*Museos y cibercultura: websites en la red* (Museums and cyber culture: Websites in the network); González Bouza's *Estrategias de comunicación museística en redes sociales. El caso de Santiago de Compostela* (Museums' communication strategies on social media. The case of Santiago de Compostela). These are just several illustrative examples of the various perspectives (i.e. geographical, discursive-analytical, etc.) from which scholars are now studying the role that institutions trusted with safeguarding heritage are playing on social media.

Despite the diversity in the way that these dissertations broach the subject, they all share a common denominator: the necessity of using ICTs to preserve and disseminate heritage. The most recent of these studies deal with social media, but only as a transmitter or loudspeaker. In other words, they place more emphasis on institutions than on Internet users.

It is equally true that the majority of work up to the present solely provides statistical information about museum presence on social media, the number of followers or the number of posts (e.g. Badell, 2013, Correa et al., 2012 to cite just two examples of pioneering studies). We also find several contexts in which Internet users are treated as the protagonists who are active agents in their interaction with heritage, such as in the MA in Naval History and Heritage (Martínez Solís et al., 2014). In this program, students are tasked with constructing a small community of online followers and collaborators that is built around a topic chosen by the student.

In many of these studies, the following questions are asked: does it fall on institutions to try continually to attract Internet users and to provide a stable space in which there is constantly updated content and new attractive initiatives? Or alternatively, is it the users' responsibility to familiarize themselves with new educommunicative tools that can be used to exchange information and share experiences?

The scholarly bibliography and continued observation of the official social media profiles of museums reveal a panorama in which there is a varied offering of material, which is expressed in an accessible way, adapted to each social network's peculiarities and is based on users' lived experience. In short, these institutions have learned to blend into the cyber landscape by offering useful tools to build heritage-based cyber communities (Mitrovic & Tadic, 2012). All of this can be observed on both the local and national levels.

There are even projects to break with the established habit of simple daily posts on a specific piece in a collection, scheduling, workshops, etc. Museum night, Museum week or the initiative #askacurator, in which the staff of important collections make themselves available to answer the questions of Internet users who use this hashtag, are some good examples of this. This final initiative, which was put into motion in 2010 by Jim Richardson, marked an important milestone, since it broke the trend of unidirectional

communication that required minimal user interaction. It has also been quite successful: there are 343 museums from 23 counties that have taken up the idea and there are instances of #askacurator going viral and trending on social media. According to Gómez Vílchez (2014), the standstill and later decrease in the level of participation can be explained by the normalization of interactions between museums and users who have grown accustomed to having their questions answered on a daily basis.

What really attracts our attention is the generally low level of the public's participation in response to these initiatives from various institutions: while one could count messages sent to accept an offer or express gratitude as "interaction," we hardly observe the exchange of opinions or the contribution of information that can complement and enrich a museum's posts. We find a situation in which there are daily posts which users consume and for which they even express gratitude, but they do not make their own contributions to further enrich their experience.

Can the way that users consume cultural material online change? Without using classrooms to teach digital natives this "new" way of acquiring knowledge, of sharing experiences and—why not—of promoting local heritage, it is certainly difficult for Internet users to break with the vertical modes of communication in which institutions broadcast a message for users to receive.

Of course, we cannot lose sight of the specific characteristics of different social networks: to sign up, most social networks require users to be at least 16 years old. So it is not a matter of forcing students into a virtual world that can be notoriously hostile and cruel, but rather to teach and invite them to use new tools for obtaining knowledge. Only once we have obtained a cybernetic education that truly seeks to take part in the processes entailed in the idea of "educommunication web 2.0," will we be able to break with the abovementioned vertical mode of communication that can only generate—at least for the time being—passive and superficially satisfied spectators.

Spanish Museums on the Main Social Networks

It has now been nearly fifteen years since museums made their online debut: at first they appeared in format 1.0 with official websites, which today continue to play a vital role (just look at the results furnished in the Ministry of Culture's recent surveys for the report "Our museums at a glance" (Spanish Government. Ministry of Education and Culture, 2018)); later, as we shall see, they began to join major social networks as they sprouted up.

Facebook, which Marc Zuckerberg launched in 2004 and which has been available in Spain since 2008, continues to be the best known and most highly used network, although its dominance has been challenged by Instagram and the rise of Twitter (Elogia, 2018). Thanks in large part to it being economically and technologically accessible, Facebook is the most popularly used by the public and by institutions which have not hesitated to set up official profiles that serve as "fanpages" (Losada-Díaz and Capriotti, 2015, p. 901).

Given that Facebook provided the first opportunities for museums to get on the net (not counting, of course, the creation of institutions' own websites that are still in use, thanks to relatively frequent updates), it allows us to observe the living evolution of profiles that have long been in use. Initially, social media was used in a more communicative than dialogic way, on the model of how companies used Facebook to spread information; accordingly they were unable to establish an interactive connection with the target audience (Waters et al. 2009; McCorkindale, 2010; Bortree & Seltzer, 2009 cit. in Losada-Díaz & Capriotti, 2015). In the cultural realm, by 2012 Facebook was the most used social network by mu-

seums: they had opened their own institutional profiles, where users would encounter a certain amount of confusion and error, since communication was unidirectional and not social (Gómez Vílchez, 2012).

In a 2013 action plan for 2013-2016, for example, the Prado Museum recognized the importance of social media and called for "the Prado's increased presence on social media as a means of emphasizing and increasing communication, cooperation and interaction between the museum, its visitors and institutions interested in participating in a community structured around museums, cultural institutions, art, history, etc." (National Prado Museum, 2013, cited in González Bouza, 2017, pp. 93-94)

By 2015 we can observe how Spanish museums had become perfectly ensconced in the practice of posting on social media with an average of four posts published per week, while some museums were even posting something on a daily basis. While these numbers were indeed higher than those for other peer institutions abroad, the inability to foster dialogue continued to be pronounced and hence something that could use improvement (Losada-Díaz & Capriotti, 2015).

Nowadays, Twitter, which boasts of having 317 million active accounts, has become the social network most used by individuals (statista.com, 2016 in Gavilán, Martínez-Navarro & Fernández López, 2017, p. 64). Indeed, Twitter's rise has been meteoric: Jack Dorsey created the platform in 2006 and by 2012 there were already 140 million active users and some 340 million tweets appearing in nearly every month (Macía and Saurina, in Maciá and Santoja, 2016, p. 61). In March of 2013, Twitter had about 313 million active users and 1.3 billion registered accounts with nearly 500 million unregistered visitors and some 100 million active users every month (http://www.expandedramblings.com/index.php/march-2013-by-the-numbers-a-few-amazing-twitter-stats from Macía and Saurina in Maciá and Santoja, 2016, p. 63).

In Spain, the first institutions began to sign up on Twitter in 2008: the Scientific Museums of La Coruña were the first to take the step of joining the microblogging network; months later ARTIUM and then the Prado also joined Twitter (Gómez, 2012); the latter remains the Spanish museum with the largest number of followers on Twitter.

Twitter is a social network that continually generates debate about its very nature: several authors have claimed that it is more than a social network (Romero, Meeder, & Kleinberg, 2011), given that it has become a necessary platform for sharing information and news. Other authors have branded it a "hybrid network" that falls somewhere between a social network and a news outlet, since it combines staple ingredients of social media (e.g. following and friending) with the essence of broadcasting and the promulgation of content (Gavilán, Martínez-Navarro, & Fernández López, 2017).

To demonstrate the vast popularity of Instagram, it is enough to point out that in January 2018 it had some 800 million active users, which amounted to having doubled the number of users in just two years (We are Social, 2018).

While several authors have given credit to the ability to include multiple filters that quickly make photos appear more professional (without requiring users to have any training in editing photos) for Instagram's popularity (Sánchez & Saurina, in Macía, & Santoja, 2016), others have highlighted how the app humanizes certain brands, since it allows them to show followers snapshots of daily life (Barton, 2012 cited in Mercedes & De la Morena Taboada, 2014).

Spanish Museums have not been blind to this phenomenon and have been progressively learning how use this social media platform. This runs the gamut from small to larger institutions: The Museum of Almería, for instance, has managed to create a sufficiently cohesive community so that the institution can bring people physically together for thematic gatherings, while the Prado posts daily videos fifteen minutes before opening their doors to the public.

In the audiovisual realm, YouTube is undoubtedly the platform par excellence, since Vimeo, a once possible competitor, has specialized in more professional and exclusive content.Currently, authors like Berzosa (2017) speak of the YouTube generation that has it is own lexicon, protocols of social acceptation, which take the form of up and down voting; in the same authors words, on YouTube "authenticity" is the key ingredient for generating attractive content (18, 185). In this case, the numbers speak volumes: every day nearly a billion hours of video is streamed and every month there are more than 1.9 billion active users—a number that does not include unsubscribed users (YouTube, 2019, https://www.youtube.com/intl/es-419/yt/about/press/).

Another interesting case is Pinterest. Launched in 2010, it was the first network to gain 10 million users (González Macías, 2013 cit.in Marcelino Mercedes and De la Morena Tobada, 2014), though today it lags far behind giants like Facebook, Twitter and Instagram, to which it is quite similar due to the centrality of images. Several museums opened their own Pinterest profiles, though today these profiles have been largely abandoned and replaced with Instagram accounts.

To give just one illustrative example of the changes that have taken place over the last ten years, if we look at the 208 archeological museums and collections, which are provided by the Spanish government (Ministry of Education and Culture, 2019), at least 109 now have one or more profiles on the most popular social networks (Facebook, Twitter, Instagram, YouTube and Pinterest) with an average of 2/3 posts per week, which generally containing information about schedules or exhibitions.

Basing our analysis on the most recent statistics for world's the most visited museums (Alonso, 2019, in *ABC.* Retrieved from https://www.abc.es/viajar/top/abci-veinte-museos-mas-visitados-mundo-2018-201905231827_noticia.html), we can crunch the numbers to shed light on the daily activity of several of these museums, thanks to the web app Fanpagekarma (https://www.fanpagekarma.com/).

We have decided to only focus on European and North American museums that are easily accessible on Facebook. We have left out Asian museums (among the most visited museums in the world, seven are Chinese) and some other popular museums (e.g. the Vatican Museums) due to a marked absence from the web 2.0.

Data Source: Fanpagekarma. (May, 2019)

The table perfectly reflects how the daily activity of these museums on Facebook has fostered a cyber community in which numbers do not show active interaction but rather has to do with the amount of shared content. Indeed, we find that the average user has no objection to liking a post or even sharing a post on his/her personal profile, though he/she is much less likely to leave any type of comment.

In Spain, where the numbers tend to be more modest, we can detect the same general pattern observed among international museums: there are cyber communities with eye-catching numbers of followers, daily posts and passive feedback (i.e. a like or sharing); however, there is hardly any dialogue between various users or between users and the institution.

Only the Prado and the Guggenheim Museum in Bilbao have reached numbers similar to those of the abovementioned international museums. The first can be explained by a flurry of online activity in commemoration of the museum's bicentennial, while the latter can largely be credited to its daily "riddle posts" in which an intriguing photo is followed by a question with three possible answers.

Data Source: Fanpagekarma. May 2019

If we turn to Twitter, the first thing to notice is that it is currently the social network with the most activity, leaving the competition in the dust.

Table 1. Official Facebook profiles of the world's most visited museums

Museum	Followers	Total posts	Posts per day	Likes per post	Comments per post	Shares per post
Musée du Louvre	2,481,223	3,695	1.2	2,666	54.6	499.5
The Metropolitan Museum of Art, New York	1,969,053	8,376	2.7	1,512	33.5	386
British Museum	1,505,650	5,287	1.7	1,733.1	37.7	433.4
American Museum of Natural History	1,193,805	5,418	1.8	377.7	15.6	93.6
Tate	1,176,569	5,910	1.9	805,1	32.2	172.7
National Gallery	948,186	4,637	1.5	1186.3	22.4	250
National Gallery of Art	857,227	4,193	1.4	910.1	17.1	194.8
The State Hermitage Museum	583,910	6,411	2.1	65.6	1.3	14.9

Even though there are, in some cases, millions of followers and daily posting similar to that found on Facebook (two or three posts per day), we still find a similar pattern: a lot of passive feedback (i.e. likes and Retweets), but very little dialogue being generated in response the an institution's shared content.

Data Source: Fanpagekarma. May 2019

Table 2. Official Facebook profiles for the main Spanish museums

Museum	Followers	Total Post	Posts per day	Likes per post	Comments per post	Shares per post
Museo Nacional del Prado	991,310	3,425	1.11	2,393.77	58.77	903.94
Museo Reina Sofía	381,237	7,666	2.50	156.89	2.59	33.21
Museo Guggenheim Bilbao	315,767	4,786	1.56	405.93	14.95	82.37
Museo Nacional Thyssen-Bornemisza	260,173	2,873	0.94	637.73	15.65	187.83
CaixaForum	221,139	2,670	0.87	152.15	8.80	46.98
MACBA Museu d´Art Contemporani de Barcelona	95,715	2,961	0.97	57.77	1.14	7.64
Museo Sorolla	57,121	1,168	0.38	292.16	8.96	141.06
Museo Arqueológico Nacional de España	56,407	3,454	1.13	101.93	2.57	34.19
Museo de Altamira	20,407	1,443	0.47	49.59	1.45	14.28
Museo Nacional de Arqueología Subacuática. ARQVA	11,599	626	0.20	25.51	0.84	8.22

Table 3. Official Twitter profiles of the world's most visited museums

Museum	Followers	Tweets per day	Conversations	Likes per Tweet	Retweets per Tweet
Tate	4,898,680	3.01	0.22	77.64	42.23
The Met	4,365,292	6.40	0.06	159.56	75.11
British Museum	2,009,939	3.94	0.26	165.64	108.91
Musée du Louvre	1,463,509	6.85	0.16	56.67	29.11
National Gallery	886,842	5.33	0.08	51.73	26.34
American Museum of Natural History	444,898	3.31	0.10	55.69	23.96
National Gallery of Art	231,482	2.55	0.08	22.08	13.38
The State Hermitage	3,395	0.04	0.00	12.35	7.54

In the case of Spanish institutions, we find a similar pattern in the numbers, though on a smaller scale. That said, it is worth stressing that the number of conversations is slightly higher. Even if Spanish museums have managed to generate a greater exchange of comments, the numbers are nevertheless quite modest, if we take the total volume of daily activity and of followers into account.

Data Source: Fanpagekarma (May, 2019)

Finally, let's turn to Instagram, the youngest of the social networks discussed in this paper. This numbers for this social network are quite interesting across the board. On the one hand, the number of followers is significant (especially if we remember that this social media has not been around for as long as the others); on the other hand, the number of comments is truly eye-catching in quantitative terms. We leave it for future studies to determine whether within this large body of comments there are productive spaces and connections that truly lead to an exchange of ideas and information.

Table 4. Official Twitter profiles for the main Spanish museums

Museum	Followers	Tweets per day	Conversations	Likes per Tweet	Retweet per Tweet
Museo del Prado	1,242,233	10.03	0.45	33.20	21.34
Museo Reina Sofía	760,702	4.99	0.22	14.12	8.19
Museo Thyssen	587,910	1.77	0.40	15.82	7.90
Guggenheim Bilbao	369,055	1.98	0.15	27.65	13.14
CaixaForum	284,403	4.14	0.23	3.63	1.92
MACBA | Museu | BCN	94,020	4.43	0.09	3.51	2.02
Museo Sorolla	52,235	0.59	0.24	57.07	19.18
MAN Arqueológico Nac	47,219	2.09	0.21	22.64	11.21
Museo de Altamira	12,248	0.72	0.06	5.91	2.33
Museo ARQVA	669	0.01	0.10	6.80	1.68

Table 5. Official Instagram profiles of the world's most visited museums

Museum	Followers	Posts per day	Comments per post	Likes per post
The Met	3,168,950	3.48	449.06	51,245.88
Musée du Louvre	2,990,562	0.87	266.80	43,641.85
Tate	2,874,128	1.91	120.77	18,210.70
British Museum	1,386,404	0.65	106.73	15,303.27
National Gallery	1,201,713	1.09	54.80	10,535.20
National Gallery of Art	346,098	1.00	32.00	3,216.70

Data Source: Fanpagekarma (May, 2019)

In Spain, it is only the Prado and the Guggenheim that have managed to generate similar numbers to those in the previous table: museum posts receive a large quantity of likes and also a significant number of comments. When first joining Twitter, these museums at first used the platform rather sporadically and without much confidence; today, however, their numbers have greatly risen to the point that there can even be four or five posts a day, ranging from updates about their schedule or admission prices to content about certain pieces for a general audience.

Data Source: Fanpagekarma (May, 2019)

Should a profile that receives more traffic and user interaction be explained by the characteristics of its users? Does a post in which an image plays a leading role (instead of a text, whether long or short) invite more comments? Do museums with deeper pockets that are equipped with more material and human resources (e.g. the Prado, the Guggenheim or the Reina Sofía) approach social media in the same way as more modest institutions, like the Museum of Almería or the Archeological Museum of Alicante? What about local museums like the Diocesan Museum of Jaca or even smaller local archeological sites? Do public and private museums deploy the same social media strategies?

By using the methods that Fani Sánchez (Maciá & Santoja, 2016)have proposed for monitoring museums' strategies for social media engagement (e.g. the number of responses, shared posts, comments and clicks on Facebook or the number of mentions, Retweets, responses and clicks on Twitter), we can see that independently of location, financial resources or the way social media is used daily with a mix

Table 6. Official Twitter profiles for the main Spanish museums

Museum	Followers	Posts per day	Comments per post	Likes per post
Museo Nacional del Prado	486.718	0.14	76.53	6,690.72
Museo Guggenheim Bilbao	469.357	1.20	45.69	1,471.27
Museo Thyssen-Bornemisza	180.951	0.28	10.87	963.59
Museo Reina Sofía	144.363	0.39	5.60	723.31
MACBA Barcelona	84.732	0.41	3.15	363.51
Museo Sorolla	70.604	0.28	8.40	902.18
CaixaForum	61.041	0.16	5.10	409.41
Museo ARQVA	1.543	0.06	0.99	55.17

of information and outreach to the general public, there are high numbers that are quite similar to those of peer institutions abroad.

Setting aside questions of size and type of management, Spanish museums that are more active on social media deploy a consistent and reliable communicatory strategy, which tends to entail at least one post a day, seven days a week. In these posts, museums adapt the same message to best meet the linguistic and formal peculiarities of each social media platform and sometimes even select different types of content for different platforms: in practice, this means short and concise texts accompanied by an image on Twitter and Instagram, while on Facebook posts tend to be longer and also include an image.

This daily activity, whose content can vary but is always visually appealing, invites a significant amount of positive feedback in the form of likes and shares/ Retweets. These figures are more or less similar to those obtained by other equivalent international museums.

A different situation that merits analysis is the case of local museums which employ their own savvy educommunicative practices in such as way that allows them to become the seed of heritage-based cyber communities and further allows them set processes into motion that generate truly exciting information and knowledge about heritage. This is certainly the case with the Diocesan Museum of Jaca (MDJ).

While the number of users-followers on Facebook, Twitter and Instagram may not appear impressive when compared to other museums (3,790 likes on Facebook, 3,298 followers on Twitter and 1,175 followers on Instagram), this museum's actions on social media 2.0 are outstanding due to the constant effort to awaken curiosity and to incentivize the discovery of heritage. The choice of the Diocesan Museum of Jaca as an example of good educommunication practices is not a random matter, but rather emerges as an example of a local museum after observing and analyzing numerous national and international museums from the point of view of educommunication web 2.0. Its relevance lies in the ability to reinvent itself and generate new proposals on the network, with virtual users as their center. In addition, there is the characteristic of being a local museum with reduced resources but that have the enormous task of guarding, making visible and educating its most valuable collection of Romanesque art, one of the most important in the Spanish landscape.

The MDJ has launched numerous long- and short-term educommunicative initiatives (e.g. *#aldetalleMDJ*, *La pieza del mes*, *#pinceladasdearte*, *#1día1pieza*, *#PequeMDJ* and *#MuseumWeek*), all of which, according to the museum's social media manager, are meant to facilitate educational action online and, ultimately, to produce an influx of 2.0 users, whose interest is piqued in the digital world and who then decide to step into the physical museum as a result. The systematic observation and analysis of the museum's 2.0 social media strategies has allowed us to confirm our initial hypothesis: it indeed is possible to find heritage-based educommunication web 2.0. Furthermore, it is noteworthy that this museum has consciously built itself up as a paradigm of how educommunication web 2.0 works: neither their limited number of 2.0 users nor their modest financial and human resources have impeded the museum from creating a top-notch educational cyber community built around heritage.

As we noted above, the MDJ has a considerable presence on Facebook, Twitter and Instagram, a presence that has more to do with its daily activity than with the number of user-followers. The museum also as a presence on YouTube (their channel is *Museo Diocesano Jaca - Arte Románico*), though this platform plays a less prominent role in MDJ's social media strategy (there are 74 videos and 153 subscribers) for several reasons: YouTube requires more human resources to record and edit videos and it is not such a dynamic platform that spurs active and multidirectional communication in the same way as other platforms can.

Among MDJ's good educommunicative practices, we want to highlight the following: *#aldetalleMDJ* (Facebook, Twitter and Instagram), *La pieza del mes* (Facebook and Twitter), *#Pinceladasdearte* (Facebook and Twitter) and *#1día1pieza* (Instagram).

Judging by the number of posts and interactions, *#aldetalleMDJ*(attention to detail MDJ) is the museum's most relevant project on social media 2.0 (together with *La pieza del mes* (the piece of the month). This initiative consists of posting a sort of puzzle every Tuesday for online users that deals with a piece or space within the museum. To announce each week's puzzle, the museum posts on Facebook and Twitter a brief description of the selected object/space about which users will have to do some research (the activity is clearly meant to be educational). In one post, for example, the museum asks users to learn what the small white dots that form part of the decoration of the Romanesque murals from Navasa (thirteenth century) are meant to represent. Before laying out the challenge, the post includes a succinct description of the painting in question. The next day, the museum publishes the answer to the puzzle, in this case explaining, "these white dots that occasionally surround the frescoes are pearls! In fact, pearls were used to decorate the highest quality tapestries, especially those of Byzantine origin. Romanesque painting sought to recreate this same effect."

La pieza del mes (piece of the month) is the longest-longing educommunicative initiative at MDJ (it was initially launched on the web 1.0). Every month an artifact is chosen from the collection and the museum posts a historical-artistic analysis on its social media accounts: on Twitter the image plays the leading role, whereas on Facebook text gains more prominence. The goal is to allow Internet users to become familiar with exhibited material in a more academic manner, though without losing sight of the museum's didactic mission and language's potential to attract. The museum staff crafts the analysis, which means that it is also a good opportunity to "rediscover" details that had long gone unnoticed and to provide up-to-date bibliography about the piece in question.

#Pinceladasdearte(brushstrokes of art) is another MDJ project on Facebook and Twitter. It seeks to draw attention to the "techniques, materials and iconographic elements that were most widely used in each period in order to create a guide with the words and concepts needed to facilitate the understanding of works housed in the MDJ and beyond." On both platforms users can find links to videos that are produced by the museum and then uploaded to the museum's YouTube channel. While the previous two projects appear at regular and predictable intervals, this is not the case with *#Pinceladasdearte*, which makes it more difficult to attract a faithful following.

The final initiative that deserves mention is *#1día1pieza* (one day one piece), which was a short-term project that took place in November 2018 exclusively on Instagram. The goal was to introduce the virtual community to the museum's collection. Each post contained an image of an artifact as well as its basic information (a total of 30 pieces were included in the project). The interesting part of the project was the museum's desire to share the selected objects "with all our friends, followers and colleagues from other artistic institutions by filling the web with #1día1pieza and accordingly allow for everyone to become a bit more familiar with our collection through the use of social media." In short, they sought to create a heritage-based community that was both collaborative and active.

CONCLUSION

Equipped with an awareness of the principles of change and continuity, it is up to millennials (i.e. those born in the 80s to mid-90s) to be the link between both ways of understanding the network of networks,

showing how it can be a way of accessing culture and patrimony. This liminal generation ought to provide a foundational education not only for the generations of digital natives, who never received a constructive, high quality and long-lasting educommunication, but also for the pre-network generations (i.e. those born between the 40s and 70s-80s). If it wants to be visible to all parts of the public, this education should be a truly enriching element that is fluent in new languages, discourses and online conventions. Furthermore, this education ought to help people contribute to the digital totality based on their personal experiences and the continuing need to produce immaterial heritage.

While subjects do certainly encounter information individually on an electronic device and are clearly conditioned socially and psychologically according to categories that are usually referred to as "generations" (see the works of Vilanova and Ortega (2017) or Berzosa (2017) (among others) for understanding this division), each individual receives a message that—at least in the case of museums—is meant to be global, that is, it is the same for every Internet users, whether male or female, 16 or 60.

If brands, sports institutions and even certain celebrities have been able to find new ways to reach the largest possible audience, museums too should be able to adapt their messages as well as their initiatives in order to accomplish their chief objective: having their audience really digest and process their messages.

What we are truly discussing is garnering social participation and engagement to help with the ultimate goal that Fontal and Ibáñez-Etxeberria (2015) have laid out: having all citizens identify with and make their own heritage so that it will be better preserved, managed, shared and come to play an important role in education (Fontal & Ibáñez-Etxeberria, 2015, p. 20). This entails the following process: knowing to understand, understanding to value, valuing to protect, protecting to preserve, and preserving to hand down (Fontal, 2013). In this article, we have tried to shine light on the first step of this larger process.

This social participation and engagement should never be the end goal of Heritage Education, but rather the starting point (Fontal & Ibáñez-Etxeberria, 2015, p. 20), a solid starting point capable of overcoming the fluidity and fragility predicted by Bauman (2003) when talking about the emergence of micro-societies with the rise of platforms 2.0.

Despite the large quantity of followers, daily posts and the far from insignificant efforts of the staff at large museums to set into motion educommunicative processes on the social web, we have shown that interaction with large institutions is fundamentally passive: users are receivers of information and they take simple actions to show their thanks (i.e. through likes) or to pass on the museum's content. On the contrary, smaller institutions—despite their modest number of followers—are beginning to foster heritage-based cyber communities that not only are more solid and structured around local or regional museums, but also are more interactive, possibly due to the sense of belonging that comes with locally conserved heritage. The presence of emotional bonds with heritage has been shown to be a fundamental aspect in the creation and coherence of heritage-based cyber communities. The driving goal of many such communities is the desire to protect and hence preserve threatened patrimonial items (whether due it a poor state of conservation, external threats or neglect).

Accordingly, the digital preservation of heritage, which was already discussed at the Faro Convention, on the social web should not merely be limited to uploading information (e.g. photos, sound bites, reconstructions or recreations) about heritage items. Digital preservation should also entail the creation of heritage-based cyber communities that seek to protect heritage, stress its value, make it approachable and, in short, to set into motion online heritage-based educommunicative processes as one further way of increasing active citizen participation with heritage items that can become the visual symbol of a cyber community's identity.

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REFERENCES

AlonsoJ. F. (2019, May 25). *ABC*. Retrieved from https://www.abc.es/viajar/top/abci-veinte-museos-mas-visitados-mundo-2018-201905231827_noticia.html

Aparici, R., & García-Marín, D. (2018). Prosumidores y emirecs: Análisis de dos teorías enfrentadas. *Comunicar*, *5*(26), 71–79. doi:10.3916/C55-2018-07

Arancibia, H., Castillo, P., & Saldaña, J. (Eds.). (2018) Innovación Educativa: perspectivas y desafíos. Valparaíso: Universidad de Valparaíso.

Área, M. (2001). *Educar en la sociedad de la información*. Bilbao: Editorial Desclée de Brouwer.

Badell, J. I. (2013). Museos en línea de Cataluña en la web 2.0 y en las redes sociales. *Ibersid*, *7*, 81–90.

Bauman, Z. (2003). *Modernidad líquida*. México: Fondo de Cultura Económica.

Berzosa, M. (2017). *Youtubers y otras especies. El fenómeno que ha cambiado la manera de entender los contenidos audiovisuales*. Madrid: Ariel.

Cabero, J., & Barroso, J. (Eds.). (2015). *Nuevos retos en tecnología educativa*. Madrid: Síntesis.

Cameron, F., & Kenderdine, S. (2007). *Theorizing digital culture heritage. A Critical Discourse*. Cambridge, MA: The MIT Press. doi:10.7551/mitpress/9780262033534.001.0001

Carrillo, A. (2014). *La intranet social*. Barcelona: Editorial UOC.

Christakis, N. A., & Fowler, J. H. (2010). *Conectados. El sorprendente poder de las redes sociales y como nos afectan*. Madrid: Taurus.

Cimadomo, G. (2016). Patrimonio como valor. Nuevas herramientas para la participación de las comunidades en la puesta en valor del patrimonio cultural. *Revista PH*, *90*, 212–214. doi:10.33349/2016.0.3804

Correa, J. M., Losada, D., & Jiménez de Aberasturi, E. (2012). Ideas y opiniones del educador de museos en relación a las Tecnologías de la Información y la Comunicación. *Revista Complutense de Educació*, *23*(21), 61–74.

Correa, Jiménez de Aberasturi, & Gutierrez-Cabello. (2018). Usos críticos de las tecnologías digitales para el aprendizaje dentro y fuera de los contextos institucionales de formación. In H. Arancibia, P. Castillo & J. Saldaña (Eds.), *Innovación educativa: perspectivas y desafíos* (pp. 175-208). Valparaíso: Universidad de Valparaíso.

Deleuze, G., & Guattari, F. (1976). *Rizoma (introducción)*. Madrid: Pre-Textos.

Ellis, M. (2011). *Managing and growing a Cultural Heritage Web Presence. A strategic guide*. London: Facet Publishing. doi:10.29085/9781856049153

Fontal, O. (Ed.). (2013) La educación patrimonial. Del patrimonio a las personas. Gijón: Ediciones Trea.

Fontal, O., & Ibáñez-Etxeberria, A. (2015). Estrategias e instrumentos para la educación patrimonial en España. *Educatio Siglo XXI*, *33*(1), 15–32. doi:10.6018/j/222481

Fontal, O., & Ibañez-Etxeberria, A. (2017). La investigación en Educación Patrimonial. Evolución y estado actual a través del análisis de indicadores de alto impacto. *Review of Education*, *375*, 194–214. doi:10.4438/1988-592X-RE-2016-375-340

Forte, M., & Bonini, E. (2010). Embodiment and enaction. A theoretical overview for cybercommunities. In M. Ioannides, A. Alonzo, A. Georgopoulos et al. (Eds.), Heritage in the Digital Era. London: Multi-Science Publishing Co.

Forteza, M. (2012). El papel de los museos en las redes sociales. *Biblios: Revista de Bibliotecnología y Ciencias de la información*, *48*, 31-40.

Freire, P. (1973). *Extensión o comunicación? La concientización en el medio rural*. Buenos Aires: Ed. Siglo XXI.

Gavilán, D., Martínez-Navarro, G., & Fernández-Lores, S. (2017). Universitarios y redes sociales informativas: Escépticos totales, moderados duales o pro-digitales. *Comunicar*, *53*(25), 61–70. doi:10.3916/C53-2017-06

Gómez Vílchez, S. (2012). Museos españoles y redes sociales, *Telos: cuadernos de comunicación e innovación*, *90*, 79-86

Gómez Vílchez, S. (2014). Debates culturales a través de Twitter. *Revista PH*, *86*, 9–10. doi:10.33349/2014.0.3548

González-Bouza, A. M. (2017). *Estrategia de comunicación museística en redes sociales. El caso de Santiago de Compostela.* Unpublished doctoral dissertation, Universidad de Santiago de Compostela.

Gozálvez, V., & Contreras, P. (2014). Empoderar a la ciudadanía mediática desde la educomunicación. *Comunicar*, *42*(21), 129–136.

Hamdouni Alami, Y., El Khazzam, B., & Souab, M. (2017). Heritage and cultural tourism in FES (Morocco). *International Journal*, *3*(2), 441–458.

Losada-Díaz, J. C., & Capriotti, P. (2015). La comunicación de los museos de arte en Facebook: Comparación entre las principales instituciones internacionales y españolas. *Palabra Clave (La Plata)*, *18*(3), 889–904. doi:10.5294/pacla.2015.18.3.11

Maceira, L. (2008). Los públicos y lo público. De mutismos, sorderas, y de diálogos sociales en museos y espacios patrimoniales. In I. Arrieta (Ed.), *Participación ciudadana, patrimonio cultural y museos. Entre la teoría y la praxis*. Bilbao: Universidad del País Vasco.

Maldonado, M. S. (2015) *Educación patrimonial y redes sociales. Análisis y evaluación de acciones en los medios de comunicación social para la definición de una cartografía educativa.* Unpublished doctoral dissertation, Universidad de Valladolid, Valladolid.

Marcelino, G. V., & de la Morena, M. (2014). Redes sociales basadas en imágenes como herramienta de comunicación museística. Museos y centros de arte Moderno y Contemporáneo de España en Pinterest e Instagram. *adComunica. Revista de Estrategias. Tendencias e Innovación en Comunicación*, *8*, 153–181.

Martín-Cáceres, M., & Cuenca, J. M. (2015). Educomunicación del patrimonio. *Educatio Siglo XXI*, *33*(1), 33–54. doi:10.6018/j/222491

Martínez Solís, L., Chaín, C., & Sánchez Baena, J. J. (2014). Aprendiendo a difundir el patrimonio marítimo en la web 2.0 a través del Máster de Historia y patrimonio naval. *Revista Internacional de Tecnologías en la Educación*, *1*(2), 25–40.

Mitrovic, M., & Tadic, B. (2012). Emergence and Structure of Cybercommunities, Thai, M. T. & Pardalos, P. M. (Eds.), Handbook of optimization in complex networks: Theory and applications (pp. 209-227). New York: Springer.

Montana, R. (2014). When heritage meets social activism, politics and community identity, *AP. Online Journal in Public Archeology*, *4*, 51–60.

Moya, E. (2013). *Inteligencia en Redes Sociales*. Barcelona: Editorial UOC.

Rivero, P., & Gil-Diaz, I. (2016). *Ciencia ciudadana, arqueología y educación patrimonial: el lanzamiento del proyecto civitas. Ciencias sociales, educación y futuro. investigaciones en didáctica de las ciencias sociales* (pp. 578–585). Santiago de Compostela: Universidad de Santiago de Compostela.

Rivero, P., & Gil-Diaz, I. (2018). *Una propuesta de ciencia ciudadana para la educación patrimonial: civitas, Nuevas formas de enseñar: investigar para innovar en didáctica de las ciencias sociales* (pp. 1051–1060). Valladolid: Universidad de Valladolid.

Venancio, R. D. O. (2016). Por uma Educomunicação Ciberpopular: Ativismo e Diálogo nas Mídias Digitais. *Revista Brasileira De Educação Do Campo*, *1*(2), 550–571. doi:10.20873/uft.2525-4863.2016v1n2p550

Vilanova, N., & Ortega, I. (2017). *Generación Z. Todo lo que necesitas saber sobre los jóvenes que han dejado viejos a los millenials*. Barcelona: Plataforma Editorial.

ADDITIONAL READING

Breslow, H., & Mousoutzanis, A. (2012). *Cybercultures: mediations of community, culture, politics*. New York: Rodopi. doi:10.1163/9789401208536

Castells, M. (2009). *Communication Power*. Oxford: Oxford University Press.

Freire, P. (1070). *Pedagogy of the Oppressed.* New York: Seabury Press.

Mateus, J. C., & Quiroz, M. T. (2017). Educommunication: A Theoretical Approach of Studying Media in School Environments. *ALAIC*, *14*(26), 152–163.

Mills, K. T. (2013). *Teaching History in the Digital Age*. Ann Arbor: The University of Michigan Press.

Moore, N., & Whelan, Y. (2007). Heritage, memory and the politics of identity: new perspectives on the cultural landscape. Aldershot, Hampshite: Ashgate.

Parry, R. (Ed.). (2010). *Museums in a Digital Age*. London: Routledge.

Rosenzweig, R. (2011). *Clio Wired. The Future of the Past in the Digital Age*. New York: Columbia University Press.

Simon, N.(2010).*The Participatory Museum,* Santa Cruz, CA: Museum 2.0.

van Boxtel, C., Gever, M., & Klein, S. (2016). *Sensitive past: questioning heritage in education*. Oxford: Berghahn.

Weller, T. (Ed.). (2013). *History in the Digital Age*. New York: Routledge.

KEY TERMS AND DEFINITIONS

Cyber Community: A group of Internet users who interact and regularly participate by using a social media profile to post about a given topic.

Heritage-based Cyber Community: A group of Internet users who interact and regularly participate by using a specific social media platform to post and take part in initiatives related to heritage.

Educommunication: A teaching-learning process that can be used on social media through which users exchange information and/or personal experiences.

Faro Convention: The reference for the protection and promotion of European cultural heritage (both material and immaterial) adopted by the Council of Europe in 2005 and which went into effect in 2011. The agreement, which is open to all member states, has been ratified by eighteen members.

Rhizomatic Model: An un-hierarchical process of influence in which elements do not depend on a strictly ordered model, but in which any element can influence the rest.

Patrimonialization: A process by which a material or immaterial element becomes a constitutive part of a community's identity that imbues said element with meaning and significance.

Web 2.0: A collection of online mechanisms that facilitate the exchange of information and collective means of creating content. No longer are cultural products produced for consumers, but new processes arise by which the final product is consumed the very users who are also co-creators of said product. Tim O'Reilly first defined the concept in 2004.