

The Digital New Museology Framework

A qualitative case study on fulfilling the museum's societal role in the digital space

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ABSTRACT

Recent advancements in digital technology have resulted in important changes within museum practices. In light of these advancements, several weaknesses in museums' digital abilities have come to light, as museums have generally failed to keep up with the digitalization of industries. This has considerable implications when it comes to museums' sustainability in an increasingly competitive market, as well as their ability to engage and to grow their audience. Additionally, this poses a challenge when it comes to the museum's ability to further its educational mission through engaging and entertaining digital experiences, which is an "edutainment" goal that is an essential mission of the modern museum. For these purposes, museums are urged to invest in developing their digital platforms and providing fully digital museum experiences.

Existing research provides many insights in terms of opportunities for the improvement of museums' digital practices and the increase of their societal value, which are focused on a visitor-centric perspective. However, a gap in research is found in terms of current applications of these digital practices for the goal of furthering the museum's mission. Therefore, this research project examines museums' current digital strategies in order to uncover ways through which they can create visitor-centric digital experiences to further their societal role. In this context, this research uses a case study methodology in order to identify current patterns in museum practices through the analysis of 10 museums' websites and Instagram platforms. These 10 case studies are selected based on variations in locations, sizes and year of establishment, in order to attain a greater generalization of findings. Based on theoretical insights, this study is analyzed through a conceptual model based on the new museology framework, which allows for a thorough exploration into the applications of the museums' edutainment mission and the dimensions of the digital visitor experience. From the research, significant findings are uncovered in terms of the ways in which museums further their societal role in the digital-only context. These findings are overall aligned with the theoretical background on digital new museology practices. Additionally, further findings uncover several areas of needed improvements in current museum practices.

KEYWORDS: museums, new museology, edutainment, digitalization, audience engagement

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1. Introduction

With the advent of digital technology, the museum industry has faced considerable changes, challenges and opportunities. Generally, museums have taken a reluctant attitude towards the integration of digital technologies into the museum experience for a number of reasons (Carvalho & Matos, 2018; Komarac et al., 2020). The industry is particularly reticent due to the fear of digital offerings hindering on-site attendance and the perceived authenticity of a physical cultural experience (Carvalho & Matos, 2018). Moreover, this lack of digital integration can be the result of other factors which can hinder museums' technological capabilities, including their differences in "size, location, funding and administrative control" (Komarac et al., 2020, p.160). These factors have prevented many museums from fully embracing the integration of innovative technologies in the museum experience.

Nevertheless, as digital technologies evolve and are more and more integrated in every aspect of the world we live in, audiences are increasingly requesting easily available information that can be accessed unlimitedly and calling for ways to directly engage with museum content (Marty, 2008; Foglia, 2017). These expectations have required museum professionals to adapt to new museology practices including the integration of digital services, which have in turn changed visitor interactions with the museum (Marty, 2008).

The new museology approach is a visitor-centric framework which focuses on fostering engaging experiences that effectively promote the museum's social mission (Viau-Courville, 2016). At the core of this social mission is the provision of educational services without neglecting the entertaining motives of the museum visit, a mission referred to as the "edutainment" mission of the museum (Lee et al., 2020). As such, digital museums are urged to take on a new museology approach for the fulfillment of these essential societal functions.

The digitalization of museum practices through a digital new museology approach can offer many advantages in terms of promotional opportunities, expanded networks and activities, and fostering engaged communities (Foglia, 2017). Moreover, this focus on digitalization is also considered to be a main strategy for museums to excel in the current competitive market (Komarac et al., 2020). Overall, museums' digital platforms, including websites and social networks, allow them to adapt the majority of their activities into the digital realm (Devine & Tarr, 2019). This includes the offer of exhibitions, talks, workshops, and other events related to the work of the museum. Additionally, these digital platforms, and more particularly their social media platforms, allow them to reinforce connections with their audiences and to expand their reach (Devine & Tarr, 2019). The digital museum can also offer an enhanced visitor experience for the audience on their digital platforms; for example,

digital experiences are unencumbered by external nuisances, such as noise and crowds, which can hinder a real-life physical experience (Rich-Kern, 2020). From a practical standpoint, the disappearance of the constraints of distance, confined spaces, limited time frames, and affordability are additional benefits of online experiences for visitors.

All in all, it can be concluded that digital technology is integral to the fulfillment of the museum's role and mission, as it opens up the door for the democratization of museums through knowledge sharing on a bigger and more diverse scale, and the creation of meaningful and enjoyable visitor-centric experiences on digital platforms (Carvalho & Matos, 2018).

Recently, interest in digital new museology has seen a major surge in the context of COVID-19, which was officially declared a worldwide pandemic on March 11th, 2020, by the World Health Organization (2020). Shut-downs of public spaces including museums due to this pandemic resulted in the overwhelming demand by consumers for the digital availability of informational and entertainment content from cultural institutions (Australia Council, Patternmakers, & WolfBrown, 2020). When it comes to the museum sector, the majority of digital demand was focused on educational and exhibitions-related content, and on increasing museums' presence on social media, thus demonstrating the need for museums to provide digital alternatives to their edutainment-related services, independently from the museum's physical building space (NEMO, 2020). As such, museums have the opportunity to take on new museology principles in order to fulfill these essential functions of the museum through visitor-centric strategies focused exclusively on the digital realm.

Based on this background, the objective of this study is to examine how museums can create strategies for online visitor-centric experiences which fulfill their societal role. This study will contribute to academic research investigating current digital strategies in museology through the lens of the digital new museology framework.

1.1. Scientific relevance

Despite extensive literature on the new museology framework and its dimensions (Mairesse & Desvallees, 2010; McCall & Gray, 2014; Viau-Courville, 2016), there is a lack of research on its applications in the digital-only context. Generally, current research has largely focused on digital technology as a tool designed to enhance rather than replace live cultural experiences, as the substitution of digital experiences in lieu of physical ones has commonly been regarded as a threat to the industry (Lee et al., 2020). As such, there is an important need for further study on museums' digital practices that are independent from

their physical building space. Furthermore, existing research which focuses on the societal role of the museum generally neglects the impact of digital technologies (Christiansen, 2020). The societal edutainment role of the museum, which is an integral part of the new museology ideology, also remains under-researched (Komarac et al., 2020). As such, there is a general need for the study of how museums can carry out their societal role in the digital space.

Recently, COVID-19 has also accelerated the museum sector's use of digital tools as integrated services for their audiences ("Museum programs move online", 2020). As a result, researchers have expressed the need for the observation of the strategies adopted during the COVID-19 pandemic for the creation of digital consumption experiences in the absence of physical experiences (Radermecker, 2021; Ou, 2020).

The study of digital-only strategies that effectively translate the museums' societal role into the digital space is thus an important area left untapped by current research. This paper seeks to fill this gap and provide new insights on what digital strategies museums can adopt in the absence of physical experiences and the shift from on-site to exclusively online operations, and the different opportunities available for the development of their missions on digital platforms.

1.2. Social relevance

Cultural institutions such as museums are not only valuable financial assets for economies around the world, but also important actors for societal development through their contributions in the areas of education and community outreach, which fall within their core missions (Mairesse & Desvallées, 2010; OECD, 2020). As the world becomes increasingly digital, it is thus important for the survival of the museum and its societal purposes to bridge the gap between physical and digital experiences. Recently, the COVID-19 pandemic has resulted in significant economic implications for museums, including considerable revenue losses threatening their operations (UNESCO, 2020). This situation has shed light on the industry's weaknesses when it comes to their digital practices, considering that other industries with effective digital strategies have thrived during this time (Radermecker, 2021). As such, this research is socially relevant as it presents a framework for ways in which museums can ensure their survival and growth within this competitive digital era through strategies focused on furthering their missions, which allows them to maintain their positive contributions in society.

1.3. Research question and sub-questions

As previously outlined, the study's aim is to observe current strategies by museums to create digital visitor-centric experiences which can further their societal role in the digital space, the importance of which has been more evident in recent times.

This study will contribute towards current research in the digital museology field through the use of a digital new museology framework, with the purpose of identifying museums' current digital practices and areas of improvement. From this theme, the study will assess digital strategies for the furthering of the museums' edutainment mission, as well museum strategies for the creation of engaging digital visitor experiences. Following this background, the study aims at exploring the following research question and sub-questions:

RQ: "How do museums create digital visitor-centric experiences that further their societal role?"

SQ1: "How can museums further their edutainment mission in a digital-only environment?"

SQ2: "How can museums provide engaging visitor experiences in a digital-only environment?"

2. Theoretical Framework

2.1. New Museology and the Contemporary Museum

The concept of the museum as a cultural institution comprises several understandings due to the diversity of the work that museums encompass and present to the public (MacLeod et al., 2015). As such, these cultural institutions are usually considered, first and foremost, as creators of experiences. Contemporary museums are focused on creating visitor-centric services, and hailed as inclusive, communal spaces designed for audiences to learn, observe and engage with their content (Barnes & McPherson, 2019). Museums as cultural institutions usually refer to educational institutions in the fields of art, history, science, etc., with exhibition / collections-focused spaces (Falk & Dierking, 2016). What constitutes a modern museum is however debated, as more and more non-exhibition based institutions are considered to be museums. These debates are exacerbated by the convergence of functions resulting from the shift from the physical into the digital sphere, which can blur the distinction between the museum and other cultural institutions, such as the library (Marty, 2008). In light of these discussions, Falk and Dierking (2016) consider that what constitutes a museum is primarily determined by visitors.

The current widely-adopted definition comes from the International Council of Museums (ICOM), which summarizes the museum as a “non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment” (2007). Despite this definition, which emphasizes museums’ nature as non-profit institutions, it is important to note that museums are increasingly moving towards a business, self-financing status in which means of operations rely majorly on their clients, meaning their visitors (Siu et al., 2013). The museum should thus be considered as a business structure which prioritizes the visitor experience and serves audiences’ needs, in order to ensure their survival and their well-functioning (Barnes & McPherson, 2019). This view of the museum as an audience-focused institution is central to the concept of new museology, which is presented in the following section.

2.1.1. New Museology

The “New Museology” theory presents a framework for the purposes and functions of a museum. The idea of new museology emerged as a critique of the traditional view of

museums as elitist, old-school, building-based and thus physically-restricted institutions that are centered around exclusivity and cultural authority (McCall & Gray, 2014). The role of the museum was perceived as being determined by the interests of exclusive social groups, and in turn its purpose was viewed as a tool for the influence of the masses towards the societal positions and cultural values of the elite. As it was described, the museum represented a form of colonial agency over the population which served no purpose towards the development of society (Viau-Courville, 2016). Furthermore, past museology practices involved the ideas of “curatorship” and of the “scholar-curator” (p.12), which considered that the education function of the museum consisted of a top-down dissemination of knowledge from the museum professional to the clueless visitor, thus considering the latter as an empty shell devoid of personal understandings and motives.

New museology puts an emphasis on the modern mandate of the museum, as the theory focuses on the current social and political role of this cultural institution (Mairesse & Desvallées, 2010). It proposes that museums have an integral role in society, particularly when it comes to preservation, education, and entertainment. This perspective entails a shift from a view of museums as institutions exclusively geared towards exhibition purposes, to institutions committed to enhancing their audiences’ education and entertainment experiences, referred to as “edutainment” experiences (Lee et al., 2020, p.2). As such, museums have the important role of creating connections between communities and cultures through enjoyable and informative experiences for the public (McCall & Gray, 2014).

With the practical application of new museology ideas in our current age, museums are now said to be defined by their relationship with their audience, rather than by their collections (Viau-Courville, 2016). This involves a complete restructuring of the organizational structures of museums, as they move towards the “democratization of culture” through the prioritization of social development goals and a focus on human agency over all (p.13). In short, it is now a mandatory practice for museums to engage in policies which have a direct impact on society in order to prove their value (McCall & Gray, 2014). This shift explains current variations in museum management, as new museum practices focus on bridging the gap between the cultural institution and society through increasing involvement in community development and efforts towards public engagement initiatives. This restructuring can result in positive outcomes in terms of financial gains, better organizational and network relations, and the overall outreach of the museum; as well as improvements in terms of cultural diversity and representation (Ross, 2004; McCall & Gray, 2014; Viau-Courville, 2016).

2.1.2. Edutainment Mission of the Museum

Overall, the new museology theory serves as a useful theoretical background for further understanding of the implications of the current societal role and the modern mission of museums. In the context of this research, new museology effectively sheds light on the importance of the museums' edutainment mission, which involves furthering its educational mission through the means of entertainment (Lee et al., 2020).

2.1.2.1. Educational Mission

Following these understandings of the mission of the museum, the core function of this cultural institution is to act as an educational resource and as a preserver of knowledge and cultural heritage (Bertacchini & Morando, 2013). This educational function of the museum is first realized through the offer of the full spectrum of the museum's resources, and thus ensuring the availability of quality, diverse informational content (Siu et al., 2013). In accordance with the parameters of new museology, museum education also needs to be easily accessible and catered to the majority of the public in order to fulfill its societal value (Rose, 2006).

The first aspect of the museum's educational mission in regards to providing access to the full spectrum of the museum's collection and resources serves the purpose of achieving a wide dissemination of information for both the museum's audience and external institutions, as well as a democratization of knowledge to go beyond scholars and professionals towards the general public (Papadimitriou et al., 2016; Flouty, 2019). Within this dimension, museums are also encouraged to emphasize the diversity of museum education, and how educational resources can take the form of different activities and interests (Ruso & Topdal 2014). This diversity of information is also closely related to the other important aspect of museum education, which is accessibility.

Museums are often criticized for their various barriers of entry, including spatial and sensorial barriers, which render the museum inaccessible for disabled audiences, as well as social and cultural barriers which undermine and diminish the impact of their educational mission (Rose, 2006; Papadimitriou et al., 2016; Renel, 2019). In order to improve accessibility, museums need to connect with their audiences beyond the constraints of the physical wall, namely through the digital space which democratizes and helps in the wide dissemination of knowledge for these various audiences (Papadimitriou et al., 2016). For example, through these digital spaces, the museum can provide integrated features and tools such as audio tours, captions, or transcriptions, in order to create sonically and visually

diverse environments for deaf or visually-impaired visitors (Papadimitriou et al., 2016; Renel, 2019).

The public's social class has often been a deciding factor first on their decisions to visit the museum, as well as on their enjoyment during the visit and what they benefit from it (Jensen, 2013). As such, the idea of an accessible museum first relies on making the museum accessible for different social classes, by taking into consideration the barriers of entry fees, as well as travel or other fees which can make even free entry offers pointless (Jensen, 2013).

When it comes to the notion of an accessible educational museum, another principle of new museology relates to the idea of an inclusive museum which can bring various communities together (Ruso & Topdal 2014; Papadimitriou et al., 2016). Within an inclusive museum's missions and purposes is giving voice to marginalized groups and positively contributing to "identity formation and memory-building" (Papadimitriou et al., 2016, p.34). Furthermore, social inclusion also has the benefit of enriching the museum's own expertise and knowledge when it comes to the history and culture of the communities which it serves (Dewhurst et al., 2014).

This inclusivity serves to diminish the impact of another barrier of access to the museum, as marginalized communities often consciously make the choice of staying away from institutions which they perceive do not cater to their contexts (Jensen, 2013). As such, the lack of socially-inclusive content is a major hindrance to the museum's social mission as an accessible educational institution for communities. In addition, the quality of museum education is evaluated by its ability to create personal meaning and individual impact for the audience (Dewhurst et al., 2014). Museums should thus strive to take the first steps in incorporating social inclusion strategies and bridging the gap with marginalized communities, for their own benefit as well as that of society as whole (Jensen, 2013; Dewhurst et al., 2014). In practice, this involves the museum's educational focus on themes including "social justice, democratic ideals, gender and identity, and other relevant issues" (Giannini & Bowen, 2019b, p.461).

However, inclusivity programs and attempts to reach wider audiences within the museum's educational endeavors are limited by museums' lack of resources and lack of skilled and experienced experts with appropriate knowledge of how to approach related topics (Greenhill et al, 2007, as cited in Jensen, 2013). Furthermore, it is another aspect which is related to museum's reticence and failure to adopt new museology ideas and methods of functioning (Jensen, 2013). Social inclusion is thus a main strategy not only to

further fulfill the museum's educational mission, but also to generate further audience engagement and grow museums' digital visitor rates.

Overall, theories related to current educational practices of the museum vary, but commonly center around a constructivist approach viewing the visitor as an active and engaged participant (Mayer, 2005; Villeneuve & Love, 2017). In the constructivist view of museum education, the authority over interpretations is shifted from curators towards visitors, who construct their own leaning through the subjective lens of their own background and characteristics (Villeneuve & Love, 2017). This approach is set on specific parameters differing from previous traditional approaches of museum education in terms of the level of involvement of visitors in accessing and gaining knowledge. As such, guidelines which are described as the basis of constructivist education in museums include: Different points of access and non-specific starting and ending points; Diversified and engaging tools of active learning; Diversified points of views; Experiences which allow for personalized connections with the content; and activities centered towards experimentation and the encouragement of individual interpretations.

The educational function of the museum does not only imply gaining knowledge on subject matter, but can have an impact on knowledge acquisition in terms of attitudes, interests, motivations and other affective ends (Peleg & Baram-Tsabari, 2017). Research background on museum education mainly centers around education for children and the notions of 'hands-on learning', 'learning by doing' and 'learning by playing' (Lee, 2020). The commonality that can be found throughout these concepts reaffirms the importance of the visitor' active participation in the learning process.

Educational museum offers are often critiqued for a lack of appeal for visitors, a verdict which stems from educational strategies which often prioritize the dissemination of knowledge over the creation of pleasant and engaging experiences for the learner (Rubio-Campillo, 2020). Moreover, common educational strategies of museums are described as a "unidirectional, linear process" which involves little participation from the learner (Riethus, 2020, p.64). The learner is thus unable to adapt individual needs and understandings in the learning process, which hinders opportunities of knowledge acquisition for inclusive audiences. As such, the success of these educational goal of the museum are compromised by disinterested audiences, thus undermining the educational mission of the museum (Rubio-Campillo, 2020).

Overall, these findings emphasize the importance of edutainment in new museology, which highlights the need for entertainment, including hands-on activities, to be incorporated within the educational services of the museum.

2.1.2.2. Entertainment Means

Despite the critiques against a strictly-informational approach to education, as described in the previous section, entertainment remains often disregarded in the context of the museum's educational functions, despite research which finds that edutainment reinforces, rather than harms, the learning process in the museum context (Komarac et al., 2020).

Nevertheless, the entertainment function of the museum remains inextricably linked with museum education, as it is the primary motivation for visitor engagement and participation and is thus considered as a primary means for the fulfillment of the museum's educational mission (Mayer, 2005; Gladysheva et al., 2014; Komarac et al., 2020). In light of this, museum professionals are increasingly adopting edutainment strategies despite their initial reticence (Komarac et al., 2020).

Museum experiences as an entertainment outlet are primarily leisure escapes from the mundanity and mental exertion of day-to-day living and working (Gladysheva et al., 2014; Falk & Dierking, 2016). While popular leisure choices prior to the 21st century mainly consisted of non-stimulating activities, people are now increasingly using their leisure experiences as opportunities to enhance their general knowledge and their personal development. One survey from the Canadian Tourism Council shows that more than half of respondents considered cultural experiences as ideal holiday activities, while 40% of respondents stated that the potential for cultural experiences were a primary deciding factor in their travel destinations (Research Resolutions & Consulting, 2007). These findings confirm the definite emergence of cultural experiences as entertainment outlets, and thus the potential for the museum experience to respond to these needs.

As previously mentioned, parameters surrounding the educational function of the museum focus on the need for engaging visitors in active learning and participation, (Villeneuve & Love, 2017). The entertainment aspect in the context of the educational function of the museum relates to both the interactive aspect of the educational experience, as well as use of storytelling and creativity in the knowledge-sharing process (Gladysheva et al., 2014; Giannini & Bowen, 2019b; Komarac et al., 2020).

Edutainment is described as a strategy based on the integration of interactive elements into the educational offers of the museum (Komarac et al., 2020). Additionally, research shows that interactive features increases visitors' time at the museum. This interactivity implies the creation of an environment where "cognitive and affective elements are simultaneously at play" (Del Chiappa et al., 2014, p.421, as cited in Komarac et al., 2020). Moreover, research finds interactive elements to be essential in the learning process as the latter is brought about from sentiments of "enjoyment, authenticity and emotions" (Komarac et al., 2020, p.164).

Despite the traditionally conservative view of many museums, they are often well-regarded for their contributions in visualization and their use of storytelling (Gladysheva et al., 2014). In the context of museums' edutainment efforts, curators consider storytelling to be one of the main priorities to be considered when sharing their collections and other resources with their audience, as they value the entertaining factor it can provide for users (Giannini & Bowen, 2019b). Often, storytelling is also regarded as an encouraging and attractive incentive for new audiences to take the first step into the museum, as well as an easier way to introduce the educational resources of the museum (Jensen, 2013). Furthermore, the creative potential of museum education stimulates the emergence of the learner's own creativity (Ruso & Topdal, 2014). As such, museums strive to share their materials through strategies focused on creativity and visual storytelling (Giannini & Bowen, 2019b).

With the social mission of the museum increasingly oriented towards improving accessibility and reducing inequalities, these needs are translated into the digital sphere. For people in difficult situations who have limited access to educational or entertainment channels, the museum's digital offers can act as a welcome distraction and reprieve (Guboglo, 2020). Additionally, edutainment in the context of the current digital era directly calls for the integration of technology into the process of creating experiences which are educational as well as entertaining for visitors (Komarac et al., 2020). These findings illustrate the need for museums to develop elaborate and refined digital strategies that fulfill audiences' educational and entertainment needs in meaningful and effective ways. The following section presents an overview of digital strategies for museums' edutainment mission.

2.1.3. Digital applications of the museum missions

Considerable improvements in terms of accessibility, inclusivity and communication between museums and their audiences have been made through new technologies and digital platforms (Foglia, 2017). As new museology becomes the norm and visitor-focused strategies are prioritized, museums thus turn to digital resources in order to reinforce their societal missions (Marty, 2008; Komarac et al., 2020). The digitalization of the museum's service offerings through online platforms can additionally have a greater impact on the furthering of the museum's goals. Additionally, the offer of digital edutainment is also considered to be a main strategy for museums to excel in the current competitive market (Komarac et al., 2020).

In terms of exclusively digital content, the digitalization of on-site collections is one of the primary online-based initiatives established by cultural institutions (Foglia, 2017). These digital catalogues made available to the public are increasingly used in order to facilitate management and conservation tasks for museum professionals. While these digital archives, often in the form of images, can present a good overview of the museum's collections, they fail to recreate the interactive context of the museum experience.

When it comes to the fulfillment of the educational mission of the museum, the personalization opportunities of the digital museum experiences can make it adaptable to different learning styles, and can thus ensure that visitors can choose the best way to follow (Foglia, 2017). This diversity of learning and the personalization potential of the museum journey is one of the key advantages of the learning experience in the digital museum over ones in the physical space.

Audience research firms LaPlaca Cohen and Slover Linett (2020) have found in a collaborative report that online museum experiences can remove a lot of barriers which often hinder some demographics' participation in museum experiences. These barriers can stem from the fear of not belonging in the overwhelming physical space of the museum, a feeling of exclusion caused by a lack of representation of their communities, among other dissuasive factors which can become obsolete in the online space (LaPlaca Cohen & Slover Linett, 2020). As digital experiences provide a sense of safety and anonymity, as well as free reign when it comes to content choices, digital experiences are increasingly more solicited and can be prioritized over physical-space experiences by some audience sectors. Through digital strategies, the museum can thus further its edutainment mission by improving accessibility, reaching untapped audiences and creating various experiences catered to the different needs and profiles of their visitors. Through these opportunities, visitors can have more fulfilling and enjoyable museum experiences.

Current advancements in technology have provided several opportunities for museums to create engaging and entertaining experiences which can further their missions (Rubio-Campillo, 2020; Riethus, 2020; Quick, 2020). First, the visitors' active engagement, by means of interactive, creative and intellectual stimulations, and the overall self-learning aspect of digital museum strategies allow for the digital museum to create long-term learning outcomes (Hawkey, 2004, Komarac et al., 2020). Museums have the opportunity to use strategies related to gamification to creatively educate and share their collections with visitors on their digital platforms, as research finds the use of games and game-like elements to be more emotionally engaging for visitors (Gaia et al., 2019). Interactive games are also considered high-cognitive tools for a fun knowledge-gaining process within the museum experience, as they combine the entertaining aspect of virtual worlds with problem-solving strategies designed towards effective learning outcomes (Rubio-Campillo, 2020). Additionally, the use of gamification combined with storytelling is found to be particularly effective in engaging visitors as it immerses them in challenging and collaborative atmosphere channeling their focus (Gaia et al., 2019).

Related to this, the rise of digital platforms and immersive media also creates new opportunities for storytelling and self-expression (Hoffmann et al., 2016; Giannini & Bowen, 2019b). In particular, the power of websites and social media platforms like Instagram have facilitated curators' ability to tell stories and narratives around the museum's cultural contributions (Dunn et al., 2019; Giannini & Bowen, 2019a). This digital storytelling allows museums to take full opportunity of current technological advancements to present their collections in a creative way, with the purpose of providing quality visitor experiences in the digital space (Dunn et al., 2019). In the digital world, this storytelling and creativity can thus take place by way of technological tools such as podcasts and social media platforms, through which museums act as outlets for creative knowledge-sharing, and which allow for the creative expression of their audiences (Hoffmann et al., 2016).

The recent COVID-19 pandemic has pushed museums into transferring their physical services into the digital world to compensate for the loss of visitors in the physical space (Rich-Kern, 2020; McGrath, 2020). In this context, museums have strived to further their edutainment purposes through initiatives related to the concept of "intelligent isolation", which implies that digital cultural experiences can bring "spiritual comfort and consolation" in times of hardship (Guboglo, 2020, p.311). Furthermore, this context further uncovered the potential of the edutainment practices of the museum to serve as an alternative to formal academic settings, in light of the limitations of online schooling (Guboglo, 2020).

Overall, the digital sphere allows museums to improve their edutainment strategies through mediums centered around interaction, accessibility and storytelling which allow for immersive experiences and an active role for the participants (Rubio-Campillo, 2020; Riethus, 2020; Quick, 2020).

2.1.4. The post-digital museum

This importance of digital strategies in museology, as illustrated by the aforementioned need to translate the museum's edutainment goal into the digital sphere, has given rise to the notion of the "Post-digital museum", which describes the increasingly normative presence of digital technologies in museum practices in the context of the digital revolution (Parry, 2013). The post-digital museum implies that digital technologies are integrated within the institution's organizational structure and dominate its core operations and strategies. The idea of this post-digital vision is that museums need to be "of" the web rather than "on" the web, meaning that the museum experience should be fully integrated into the digital sphere (Chan & Cope, 2015).

In this post-digital era, the distinctions between digital and non-digital become blurry (Parry, 2013). The digital becomes normalized in all aspects through the embedding of personalized, ambient and interactive features, to create seamless digital museum experiences which satisfies and inspires visitors. These technologies act as an incentive for visitors, encouraging them against the architectural constraints and intimidations of the museum building (Chan & Cope, 2015). Ultimately, the post-digital museum visitor experience means that there is no more choice to be made between digital online experiences and non-digital physical experiences, as they merge to become one and the same (Parry, 2013). The museum thus evolves past the integration of digital technologies into the physical setting of the museum, into creating a digital space that is separate and equal to the physical space (Devine & Tarr, 2019).

The normative aspect of the post-digital museum not only implies its increasingly frequent adoption, but also its specific use for the purposes of the museums' evolution and its use as an agent for "good" (Parry, 2013, p.30).

Based on these insights, this research suggests the importance of the establishment of the post-digital museum, meaning a digitally-focused museum within the new museology framework. This post-digital vision encourages different kinds of museums, including small and medium-sized, to take advantage of the full possibilities of the digital realm to engage communities and create impact on a large-scale (Chan et al., 2019). In this context, the digital

focus implies valuing strategies based on community, experimentation and sharing. As such, the post-digital museum responds to the digital new museology framework as it focuses primarily on audience experiences and engagement and positive societal contributions. This conclusion implies that the museum which fully responds to the new museology framework is a post-digital museum.

2.2. The Digital Museum Experience

As previously established, museums functioning in this current digitally-focused world are urged to establish themselves as post-digital museums, which implies the integration of digital strategies into every aspect of their services, including the establishment of a fully-digital museum experience (Parry, 2013). Furthermore, it was also established that the digital application of the museum missions involves an emphasis on the free-learning and personalization of the visitor journey (Foglia, 2017). As such, the post-digital museum in the new museology context involves a heavy focus on designing an engaging digital museum visitor experience (Parry, 2013).

In the context of the new museology vision of the museum as a brand-like, audience-focused institution, museums increasingly use online platforms, such as websites and social media, to increase audience engagement (Padilla-Meléndez & del Águila-Obra. 2013; Gladysheva et al., 2014). As a result, online platforms help create value and improve the museum's economic as well as social performance and outcomes (Padilla-Meléndez & del Águila-Obra. 2013). As such, creating engaging online museum visitor experiences is a main strategy for museums to maintain and to grow their online platforms, and achieve this increase in value.

2.2.1. The Museum Visitor Experience

Following these previous insights, it can be seen that, as the museums' missions become increasingly audience-focused in line with new museology practices, a priority for scholars is to understand the parameters surrounding the museum experience from the perspective of audiences (Falk & Dierking, 2000; Gladysheva et al., 2014). As it was previously emphasized, this audience engagement functions as an important value-creation-based business model for museums (Padilla-Meléndez & del Águila-Obra. 2013; Gladysheva et al., 2014). It is thus imperative for museums to create engaging visitor experiences not only for the furthering of the museum's missions, but also to ensure their stable functioning and the growth of their audiences.

Falk and Dierking (2000)'s "Contextual Model of Learning" provides a useful framework in this study for understanding the complexities around the visitor experience in museums. This analysis model presents a set of patterns which illustrate the various perceptions, knowledge, and the different contexts which construct the visitor's museum experience. The contextual model of learning provides three illustrative contexts: The personal context, the sociocultural context, and the physical context (Falk & Dierking, 2016). The museum experience in the contextual model of learning is understood as an intersection of these three dimensions. The visitor, in accordance with new museology concepts and the parameters surrounding the furthering of the museum's edutainment mission, is regarded as a highly active participant and decision-maker in the learning process (Peleg & Baram-Tsabari, 2017).

2.2.1.1. The personal context

The personal context variable considers the character traits of the visitors, and the different types of individuals which are likely to visit a museum, as well as the type of visitors they can become and the type of experience they will encounter (Falk & Dierking, 2016). The learnings and experiences that every individual visitor brings to their visit is taken into account by the museum in order to achieve a personalization of content. This involves several factors including their own understandings of what the museum is, what it entails, their prior museum experiences and their preferred methods of gaining knowledge. The visitor also has personal interests and individual motives for the visit, which determine their needs and expectations, and the personal benefits they seek to find in their experience. These characteristics influence visitors' behavior and their degree of control over their experience, and are useful to analyze what visitors can retain after the visit in terms of learning outcomes (Falk & Storksdieck, 2005). The personal context in the museum visitor experience is thus fundamentally linked with the museum's educational mission, and the personalization of their visitor learning journey.

While the physical building space of the museum can only present a single point of view, the digital realm allows for a multitude of lenses to be offered to different kinds of visitors, depending on their needs (Devine & Tarr, 2019).

This personalization in the digital context can be achieved through technological features and cues, including tools which allow users to create profiles, to personalize content to fit their personal interests or to create their own curated lists (Verboom & Arora, 2013). On digital platforms, this personalization is shown to be a key strategy which allows

museums to cater to different audiences and thus to generate more active engagement from users (Verboom & Arora, 2013; Devine & Tarr, 2019). The strategy of creating unique experiences for visitors primarily emanates from the rise of social media platforms, but is increasingly adapted into other digital channels, including the museum's websites (Devine & Tarr, 2019).

Museums can create inter-connected channels across various platforms through which visitors can plan and frame their own museum journeys (Foglia, 2017). This multi-channel approach allows for visitors to make their visit flexible and adaptable to the contexts and constraints of the visit (Devine & Tarr, 2019). This strategy constitutes another advantage of digital technologies, as they allow for seamless continuity between different channels without the limitations of physical spaces. Through these individualized offers, personalization can keep museums from falling into the trap of services that are disconnected from the users' needs (Devine, 2015). Amongst these mediums are museum apps, which constitute another strategy for the personalization of the museum experience (Riethus, 2020). These platforms are easily accessible interactive communication channels where users can freely choose the content they wish to access and the form in which it is consumed.

Overall, this personalization of the digital museum journey also allows the visitor to take control of their visitor journey and emphasizes the free-learning aspect of the digital museum, and is thus a fundamental element of the visitor journey within the new museology framework (Rubio-Campillo, 2020).

2.2.1.2. The social context

According to Falk and Dierking (2016), this context involves both the sociocultural environments of the visitor as well as those of the institution itself. Visitors' social and cultural backgrounds, including language, ethnicity, nationality, beliefs, values, etc., are all factors which influence their perceptions of the museum, and thus their experience (Falk & Dierking, 2016). These factors interact with the values and cultural background that the museum itself is grounded on and that it presents to the public. In this context, the sociocultural considerations of the museum experience are closely linked with the museum's ability to further its edutainment mission.

Furthermore, the social setting aspect of the museum highly impacts visitor experiences, since the quality of their social interactions within the museum space, with museum professionals as well as other visitors, can greatly affect the learning outcomes of the visit (Falk & Storksdieck, 2005). This context can serve as an explanation to visitors'

different behaviors and their different museum experiences as they vary based on the sociocultural factors at play (Falk & Dierking, 2016).

Museums are considered to be social spaces at their core, in which culture is meant to be practiced and reproduced by participants (Verboom & Arora, 2013). This inherently interactive nature is another aspect of the visitor journey which relates to the fundamental edutainment need of visitors' active participation.

In the context of the museum, social interactivity implies providing visitors with two-way communication channels in which they have direct access to museum experts and staff's services, which include providing explanations and clarifications which help visitor's knowledge acquisition (Siu et al., 2013). Additionally, museums can greatly benefit from opening channels which allow for visitors' feedback and suggestions, as it can also lead to important discussions for the museum's progress and the growth of its social value (Gladysheva et al., 2014).

Communication channels such as blogs and forums were found to be successful in generating engagement from online museum visitors and strengthening their social connection with the museum (Verboom & Arora, 2013). Furthermore, the rise of social media platforms has provided museums with prime opportunities in fostering an engaged community around their institution (Gladysheva et al., 2014). Social media platforms can thus be used by museums to promote the museum to new audiences as well as engage existing ones, integrating social media platforms in their knowledge-providing services, and establishing and maintaining the conversation between audiences and museum professionals through features integrated within those platforms (Gladysheva et al., 2014).

Recently, research has also explored the possibilities of integrating Artificial Intelligence (AI) technologies in museums' communication channels, for example through chatbots, as well as other gamification features, all of which are found to be successful in increasing visitor engagement and interest in the museum experience (Gaia et al., 2019).

2.2.1.3. The physical context

In this model, the museum is described as a physical setting, in which visitors willingly make the choice of entering the museum space (Falk & Dierking, 2016). The resulting interactions and reactions of the visitors strongly affect their learning experiences (Falk & Storksdieck, 2005). While most research focuses on the effect of the exhibitions and collections, the contextual model of learning emphasizes the influential power of the design characteristics of the museum space for visitor learning. As such, the architecture and set-up

of the museum influences the visitor experience when it comes to the observations made, the objects encountered, the level of comfort, the ease of movement, and the ambiance and overall coherence of the museum space (Falk & Dierking, 2016).

In the absence of the physical space when it comes to the digital museum, the digital setting is set up to provide the architectural and design elements needed for an immersive visitor experience (Devine & Tarr, 2019). Virtual Reality (VR) is one innovative technology which is increasingly used to create virtual environments and substitute physical experiences (Lee et al., 2020). This technology allows for simulations and virtual reconstructions which serve the purpose of creating immersive virtual realities (Quick, 2020). According to Lee et al. (2020), this tool for the creation and enhancement of the digital setting of the museum is found to respond to new museology parameters, as it allows museums to further their edutainment mission through “immersive VR environments [which] enable visitors ... to pleurably obtain information about collections” (p.1). VR also allows for better accessibility through the possibility of closer, more detailed explorations. Additionally, VR is also considered as a marketing tool which also allows for the growth of the museum’s audiences (Lee et al., 2020). Overall, virtual reconstructions of the physical setting of the museum are used for the purpose of the providing unique experiences and an immersive museum environment for visitors.

The museum experience is a dynamic process at its core (Falk & Dierking, 2016). These experiences are built on different interactions of a visitor’s individual characteristics and situational circumstances, meaning that museum experiences are inherently unique. The museum experience can thus be thought of as a “continually shifting interaction” between the three contexts (p.29), and learnings are considered to be in constant shift across time. The three contexts of the conceptual model of a learning provide a useful tool for the understanding of the influential elements surrounding the museum experience; however, the museum experience’s constant evolution means that it remains difficult to establish its true definition (Falk & Dierking, 2016).

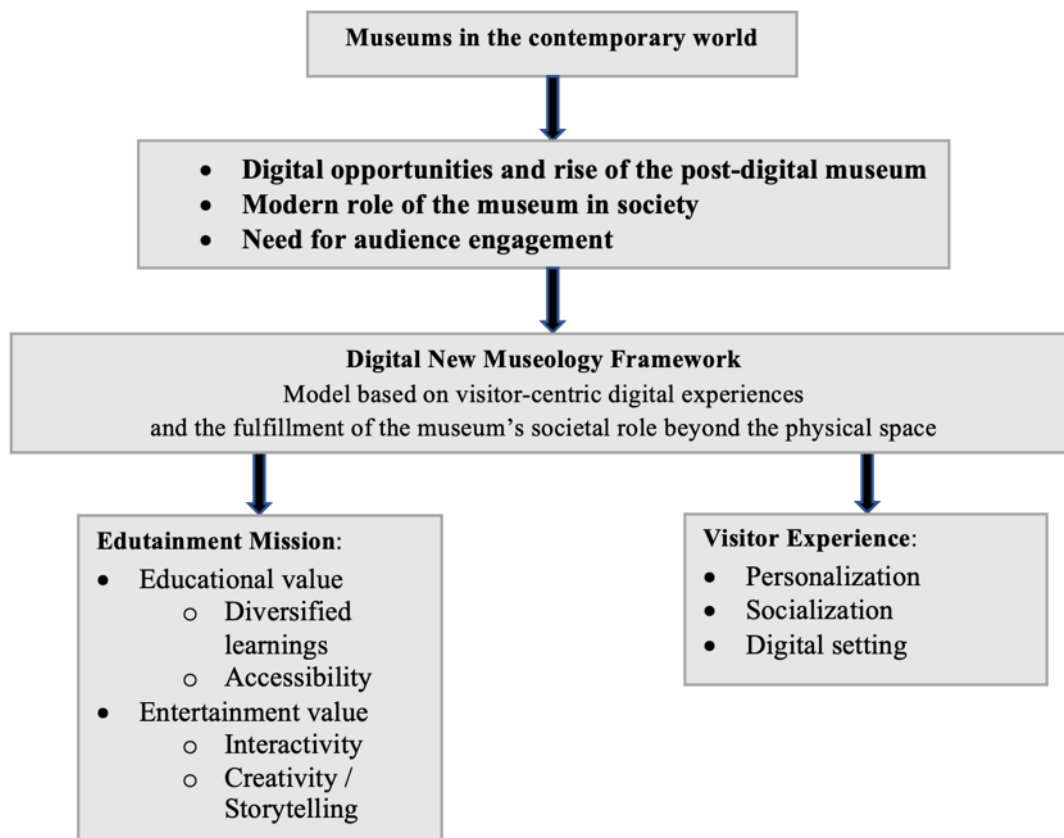
Overall, this framework for the museum visitor experience provides a useful basis for museum professionals to understand their audiences’ perspectives, with the goal of providing museum experiences that can better meet their expectations (Falk & Dierking, 2016). The model serves to explain the important parameters around the museum visitor experience and museum learning, which need to be taken into account when translating the museum experience into the digital sphere. These criteria can be used by professionals to gain

knowledge on the relationships that can potentially form between visitors and digital museum resources and ways to meet visitors' needs in an online format (Marty, 2008; Falk & Dierking, 2016).

2.3. Conceptual model

This research overall presents the concept of a digital new museology framework for the museum of today, which is focused on the visitor experience and the furthering of its societal mission. Considering the previous theoretical background, this research proposes a conceptual framework for the practice of contemporary new museology in the digital sphere that is based on dimensions centered around the fulfillment of the museum's societal role and the visitor experience. This digital new museology involves an emphasis on the edutainment mission of museums, as well as strategies for the creation of engaging visitor-centric museum experiences.

Figure 2.1: Conceptual Model for this study



3. Methodology

This chapter discusses the chosen methodology for this research, and explains the suitability of the research design in investigating the main research question and sub-questions of this study. In the following sections, the research design is first introduced and the justification for the selected method, in this case a qualitative case study analysis, will be presented. Next, the sampling method for the data collection will be discussed, including a detailing of the case selection for this research. Finally, the operationalization and data analysis process, including the use of thematic analysis as the chosen qualitative content analysis method and a description of the case study template for exploring the key concepts, will be further explained.

3.1. Research design

This thesis will use a qualitative approach to answer the research question. Qualitative data analysis is considered as the correct methodology for research that seeks to analyze, extract and interpret concepts and meanings from the dataset (Boeije, 2010). This method allows researchers to extract valuable interpretations through the observational study of the data (Sofaer, 2000). The exploratory nature of qualitative analysis is used to make and uncover meaningful patterns which provide explanations for practices within their real-life setting (Brennen, 2017).

Based on the nature of this research, which seeks to understand the strategies and perspectives related to the digital endeavors of museums to fulfill their societal role, qualitative research was deemed as the correct methodology to adopt.

For this research, the chosen qualitative methodology consists of case studies. According to Yin (2014), case studies are used to explore a “contemporary phenomenon (the “case”) in its real-world context” (p.32), and in this framework, provide an opportunity for the study of contemporary museum practices, which is fitting to the purpose of this research. Case studies also allow for in-depth exploration of “how” and “why” questions, and are appropriate for projects in which researchers have no input or control over behavioral events (Yin, 2014).

For the purposes of this research, a multiple-case study design is selected, as it results in more insightful and robust findings (Yin, 2014). As such, several case studies will observe the digital strategies adopted by museums from different parts of the world, specifically focusing on the strategies adopted by these institutions to fulfill their mandate in a digital-only format. The delimited timeline established for these case studies will focus on the

context of the COVID-19 pandemic, as it provides an opportunity for the study of the digital museum experience in the absence of the offline physical experience (Radermecker, 2021). Furthermore, qualitative studies call for researchers to examine the data and to frame resulting interpretations within their cultural, political or social context (Brennen, 2017). Thus, the delimited timeline for all data starts from March 11th, 2020 to the present-day of the conduction of this research (World Health Organization, 2020).

Triangulation is an integral part of a case study design (Yin, 2014). In this study, triangulation will be used as a strategy to mediate the limitations of the research method and for the improvement of the validity and reliability of the results (Yin, 2014; Flick, 2018). This triangulation addresses the different variables of interest of a case study, and serves to provide a more holistic understanding of the subject and to generate more knowledge and insights from the dataset (Yin, 2014). In the context of the case study, data triangulation is applied through the combination of three data sources: the museum's website, social media, and documentation; and method triangulation is applied through the combination of two data analysis techniques: thematic analysis and pattern matching.

3.2. Case selection

Selecting the case or unit to analyze is a crucial part of the research design (Yin, 2014). Case studies need to provide sufficient data for investigating the research topic, as one limitation is a too small number of case studies that does not provide adequate representation for the topic. Selecting a larger number of case studies thus improves the reliability of results.

In this framework, this project constructs a case study for 10 museums from different locations around the world in order to increase the variance and reliability of findings. These museums were selected as they have established strategies for online museum practices both on websites and social media, thus providing sufficient evidence that responds to the topic and the theoretical background for this research. The museums include long-standing institutions, museums which are amongst the most visited in the world according to the AECOM Museum Index (2019), as well as smaller and more recently established museums in order to provide more diverse insights. The study also includes the world's first fully digital museum, which is independent of any physical location.

The following table offers an overview of the 10 museums selected for this study:

Table 3.1: Selected case studies

Museums	Location	Year established
Louvre Paris	Paris, France	1793
Mauritshuis	The Hague, Netherlands	1822
Van Gogh Museum	Amsterdam, the Netherlands	1973
Getty Museum	Los Angeles, United States	1974
Art Gallery Ontario	Toronto, Canada	1900
Mori Museum	Tokyo, Japan	2003
National Museum of Modern and Contemporary Art (MMCA) Korea	Seoul, South Korea	1969
Zeitz Museum of Contemporary Art Africa (MOCAA)	Cape Town, South Africa	2017
Louvre Abu Dhabi (AD)	Abu Dhabi, United Arab Emirates	2017
VOMA	Online (no specified country of origin)	2020

3.3. Data Collection

Data collection for this analysis followed the case study procedures outlined by Yin (2014). This procedure implies following two main goals: The data collected needs to originate from more than one source, and the data needs to be selected for the purpose of investigating patterns confirming or rejecting theoretical insights (Yin, 2014). As such, these guidelines were followed in the process of collecting data for the case studies. This research uses the museums' websites and Instagram accounts, as well as additional documentation, which effectively achieves the triangulation of sources that is essential to case study analyses. Furthermore, the data collected for this research is selected through purposive sampling, which involves the deliberate identification and selection of specific sources based on certain key characteristics needed for the purposes of the qualitative research (Emmel, 2013). This technique served to ensure that the data collected for this research is published within the delimited timeline and fit towards the investigation of the research topic and the background literature. Ethical concerns are minimized as all data collected for this research is publicly available online, and no personal information is discussed throughout the study.

In the context of case studies, establishing reliability and validity in the data collection process is limited by the subjective interpretations of the researcher (Yin, 2014). Following guidelines by Yin (2014), this particular challenge is addressed by data triangulation through the use of multiple sources, as this multiplicity allows for a high number of measures; and the creation and organization of a case study database.

3.3.1. Data sample

In the context of the triangulation of data, the dataset mainly consists of pages and posts from the museums' respective websites and Instagram accounts which relate to digital strategies adopted by these museums. For the purposes of this study, the museums' websites and Instagram accounts were selected based on insights from the literature as appropriate for the analysis of social media strategies. Additionally, Instagram was specifically chosen amongst the museum's social media platforms as it surpassed Twitter in 2020 to become the most popular social media platform for museums, according to the Art Newspapers' Visitor Figures survey (Dawson, 2021).

In the context of the aforementioned data collection procedures, the researchers' analysis skills and interpretations are needed in the selection process (Yin, 2014). Following this, and after initial observations of each case study's digital platforms during the data collection process, a total of 10 Instagram posts and 10 websites pages were selected for the complete analysis. This data was purposely selected according to the insights in the literature and the final conceptual framework, and it includes different digital contents shared on the institutions' platforms, including textual posts, images, videos, etc., which allow for a thorough exploration of the various digital-only initiatives that are adopted by the museums when it comes to the two dimensions analyzed in this research. Additionally, documentation in the form of articles or interviews, which include insights shared by experts from the selected museums, were selected as additional data to be analyzed in order to support and gain more perspective on observations from the main data, namely the museum's websites and Instagram platforms. As this documentation is supportive to the primary data, a total of 10 documents were selected each pertaining to one of the 10 cases in this study. These documents were purposely chosen for their inclusion of direct accounts from spokespersons and experts from the museums, and according to the insights provided which touch upon many elements of the conceptual model for this study.

Tables A.1 and A.2, which can be found in Appendix A, provide an overview of the main data collection (websites pages + Instagram posts) and the documentation used for the observations.

3.4. Operationalization

The conceptual framework of this study functions as a basis for the operationalization and the extraction of meanings and concepts in the analysis. The topics emerging from the theoretical framework thus serve as the primary guide for the case studies. As developed in the conceptual model (Figure 1), the New museology framework for the Post-Digital museum is based on two main dimensions. The first topic involves the edutainment mission of the museum and seeks to analyze the educational offers of the museum and their entertainment value. This is done through an analysis of the first topic which relates to the diversity and accessibility of educational content, and how edutainment is achieved through the consideration of interactivity and storytelling; and the second topic which covers the digital museum visitor experience, and aims at analyzing the potential for engaging experiences based on personalized factors, how museums create socialization in the digital space, and how the museum can use the digital environment to recreate or replace the conditions of physical settings.

The case study template, which presents an overview of the operationalization process used for each of the case studies, can be found in Appendix B.

3.5. Data Analysis

Case study analysis requires a formal process of coding, categorizing, concept mapping, and generating themes from the data in order to explain and produce insights from the content (Simons, 2009). For this purpose, this study uses a thematic analysis and pattern matching approach for the analysis of the data.

Thematic analysis is a technique used to engage with, reorganize and reassemble the content in order to identify the key concepts, patterns and theoretical understandings from the data (Boeije, 2010; Braun & Clarke, 2013). In addition, thematic analysis is flexible and provides leeway for the researchers' interpretations of the data within its context, thus making it appropriate in the framework of a case study research (Braun & Clarke, 2013). Thematic analysis can also follow a deductive principle, in which the data analysis is guided by the theoretical framework in the process of determining the emerging themes in the data (Braun & Clarke, 2012). Open coding is the first step in thematic analysis (Boeije, 2010). In

this process, the collected data is broken up, observed, compared and conceptualized through the assignment of “codes”, which are textual descriptions of the data fragment based on the theoretical concepts (p.96). Following the open coding process, connections are made between the emerging codes in what is described as the axial coding stage (Boeije, 2010). These connections are guided by the conceptual framework of this research in matching main themes with the concepts from the literature. The last step of the thematic analysis is selective coding, which allows for the main findings emerging from the data to be conceptualized and for conclusions to be drawn from these findings in order to answer the research question (Boeije, 2010).

Closely resembling thematic analysis, pattern matching is a similar theme-focused analysis technique that is deemed most desirable in the context of case studies, and which is recommended as a technique to improve the validity of the case study method (Yin, 2014). This technique allows for patterns found in the data to be compared and contrasted with theoretical findings (Sofaer, 2000). The latter serve as predictors to possible patterns to be found in the analysis (Yin, 2014). While this comparison of theory and results depends on strong existing theoretical measures, the technique allows for interpretation on the part of the researcher when it comes to the analysis and description of matches or mismatches.

After the initial data collection, thematic analysis was first used to extract the main themes from the selected 10 website pages and 10 Instagram posts, followed by the supportive documentation, for each case study. The codes were guided by the theoretical background for this study. After this process, extracted observations from the case studies were regrouped under the main themes, which are modeled after the conceptual framework, in order to reveal the main patterns. After this analysis, the themes were compared with the literature in order to reveal the existence or absence of matching patterns. An overview of the main codes for this analysis can be found in Appendix C.

In this study, a method triangulation strengthening the validity of results and mediating the limitations of the methodology is thus achieved through the use of pattern matching alongside thematic analysis for the observation and analysis of the data.

The results of this analysis are presented in the following chapter.

4. Results

The following chapter presents the results of the analysis of the 10 case studies used to observe and understand the digital strategies used by museums to create online experiences. This analysis aims at observing and identifying patterns which corroborate the theoretical background for this research, which is based on the conceptualized model of new museology for the digital museum.

The chapter presents the findings in the following: First, the focus is on the museums' strategies around the social mission of museums, followed by the visitor experience. These two sections are linked to form a framework for how museums can apply the ideas of digital new museology to increase their social value and provide engaging and enriching online experiences for visitors.

In each of these sections, a detailing of findings and an overview of how they relate to the theoretical background of the study is presented.

4.1. The social mission of the museum: Edutainment value

New museology insights stress the importance of education as an integral social value of the museum. Furthermore, research has uncovered the considerable advantage of focusing on the entertainment component of the museum experience, especially when integrated with the educational service of the museum (Komarac et al., 2020; Rubio-Campillo, 2020). Thus, it is critical for museums to offer experiences which combine both an educational value and an entertainment factor for visitors, in the form of contemporary edutainment. In the context of the edutainment experience, factors taken into account when it comes to knowledge-sharing strategies involve the diversity of available learning materials and the accessibility to users of different profiles (Villeneuve & Love, 2017; Guboglo, 2020). For the entertainment factor, the interactivity of content as well as the creativity and storytelling are measured (Falk & Dierking, 2016; Foglia, 2017). In this section, results pertaining to the digital strategies for the furthering of their edutainment mission in the digital space are presented.

4.1.1. Educational value

Providing educational tools and resources is a core mission of the museum (Bertacchini & Morando, 2013). As such, all museums in this sample provide educational content on their online platforms. Seven out of the museums have a dedicated section on their website for online educational content which can be accessed directly from the homepage menu (See Figure 4.1.). The remaining museums, namely the Mauritshuis, the VOMA and

the Van Gogh museum include educational content within other sub-sections on their website. All of the museums also offer short informational content on their Instagram platforms in the form of visual posts and stories (See Figure 4.2).

However, the extent to which these educational offers respond to the theoretical insights varies depending on the means and strategies of the museum.

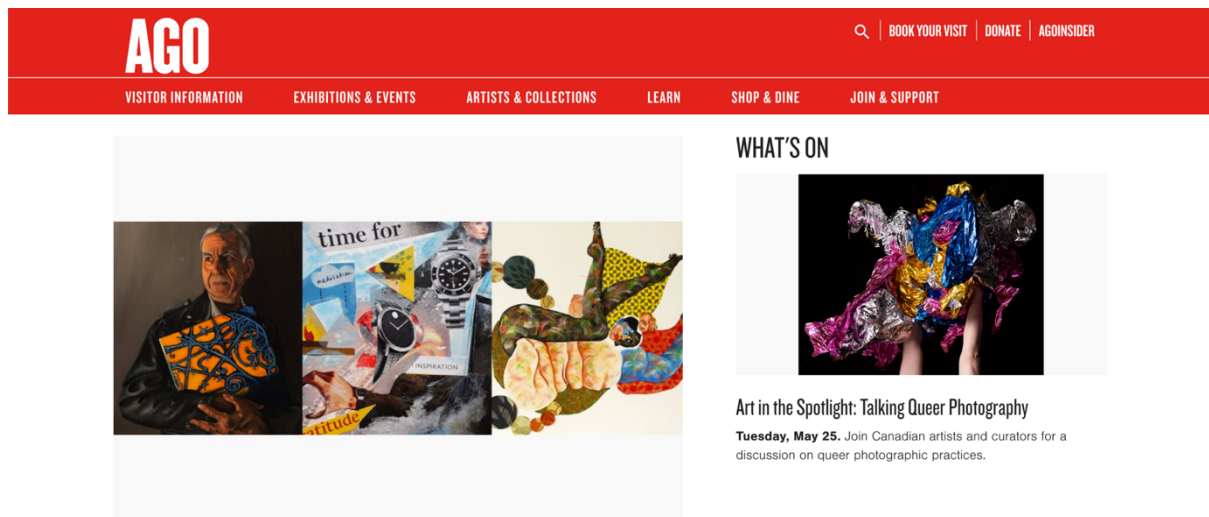


Figure 4.1.: A dedicated educational section titled “Learn” on the homepage of Art Gallery Ontario’s website

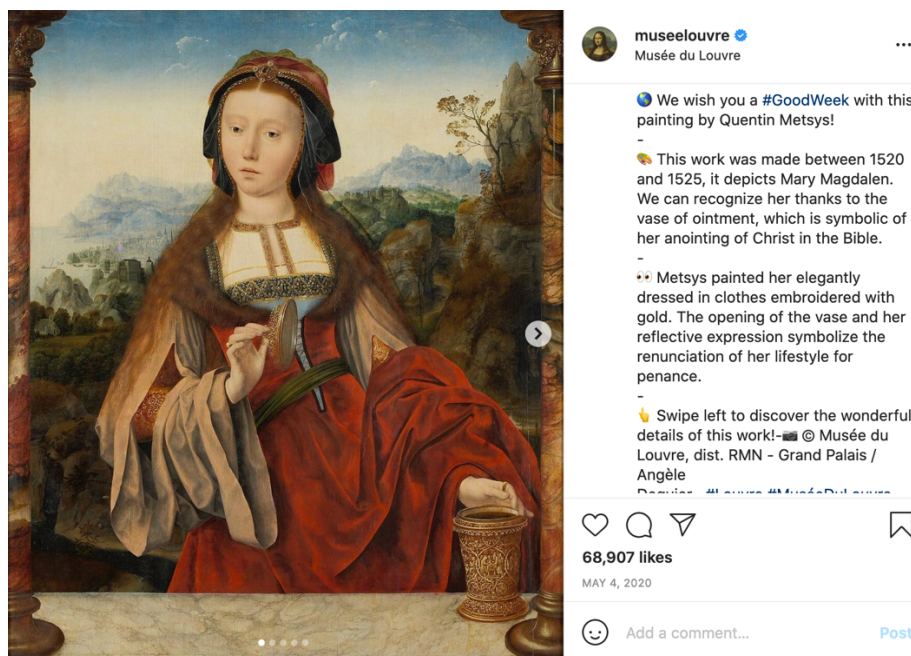


Figure 4.2.: An Instagram post from the Louvre Paris’ official account displays a piece of their collection along short informational details.

4.1.1.1. Diversified learning

According to the theoretical framework of this research, museum educational offers need to provide learning materials which take into consideration their visitors' different social and educational backgrounds (Rose, 2006). Guidelines for the educational offer of the museum include the provision of diversified learnings which present different points of views and cater to varied informational needs (Villeneuve & Love, 2017). This diversity also includes the personalization of the educational offer for visitors through catering to their varied interests and learning styles (Devine, 2015; Foglia, 2017; Peleg & Baram-Tsabari, 2017). Following these parameters, the analysis of the data aims at observing whether the selected museums offer diversified knowledge on their online platforms for different types of visitors.

The analysis of the data showed that eight out of the 10 case studies indicated offering the entirety of their collections on their website. For example, the following text can be found on the Louvre Paris' website:

“The museum's entire collection on one platform

The Collections database consists of entries for more than 480,000 works in the Musée du Louvre and Musée National Eugène-Delacroix. Updated on a daily basis, it is the result of the continuous research and documentation efforts carried out by teams of experts from both museums.” (“Explore: Collections”, n.d.).

The remaining two museums (Louvre Abu Dhabi and Art Gallery Ontario) display selected highlights from their collections on their websites. It is noted that VOMA's collection is evidently fully digitized in light of its nature as a fully-digital museum. When it comes to Instagram, all museums share images of artworks from their collections, which can either be randomly selected, or related to a specific theme or a current circumstance at the time of posting, the context of which can be deduced from the accompanying captions. These findings correspond with literature insights from Foglia (2007), which highlight the use of the digitalization of collections as one of the primary strategies adopted by museums for the digital application of their educational mission.

From an observation of all the museums, the main educational offers on their online platforms are targeted towards a general public. In addition, all museums with the exception of the newly-established VOMA also offered educational content targeted towards specific types of visitors. Out of these museums, five museums (Louvre Paris, Louvre Abu Dhabi, Van Gogh Museum, Mauritshuis, Getty Museum) offered online educational content targeted

specifically towards children, while the remaining four (MMCA Korea, Zeitz MOCAA, Mori Museum, Art Gallery Ontario) included online content targeted at children as well as other specific demographics including parents, adolescents, etc. When it comes to websites, the Mori museum notably offers online visitors several categories to choose from when it comes to personalized educational content, including curated content for different levels of study, as well as seniors and people with disabilities, as shown on Figure 4.3. These findings are in accordance with recommendations in the literature from Papadimitriou et al. (2016) and Flouty (2019), as these patterns achieve a democratization of knowledge acquisition. It is noted, however, that this specific targeting is mainly contained to the museum’s websites, while Instagram posts remain oriented towards the general public.

Overall, all museums provided educational content geared towards different interests on their websites, which relates to insights from Ruso & Topdal (2013) on the diversification of interests within museum education. This is demonstrated through key terms in the data including terms related to different themes and industries such as “fashion”, “history”, “music”, etc. as seen on Figure 4.4, or different mediums including “painting”, “sculpture”, “photography” etc. While not categorized, similar patterns of catering to different interests can be found on the museums’ Instagram platforms.

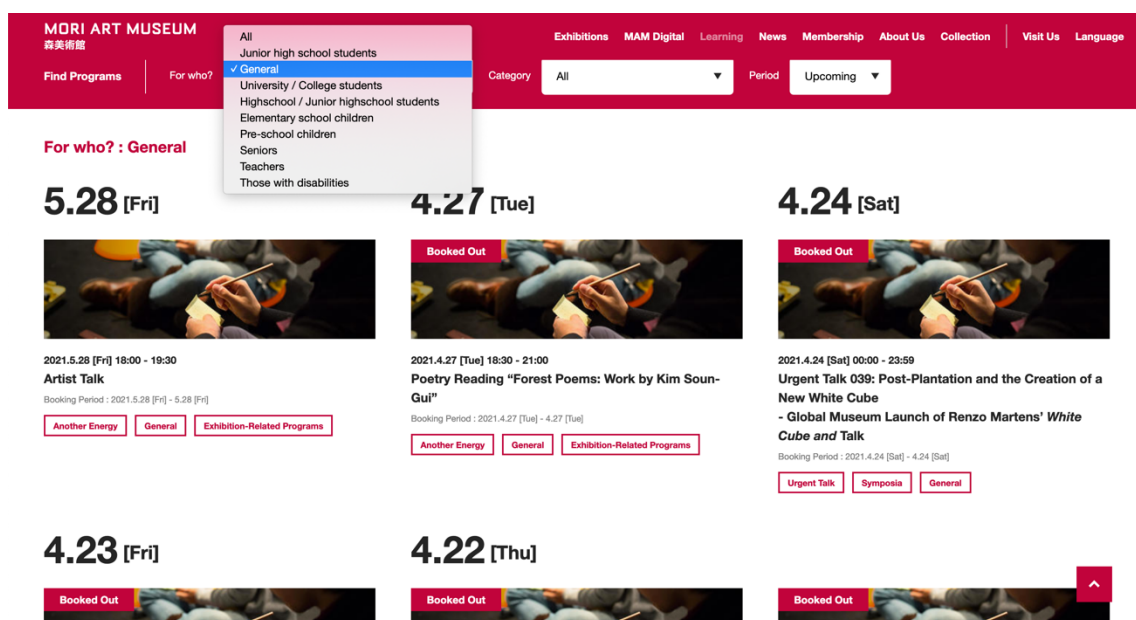


Figure 4.3: The “Leaning” section on Mori Museum’s website which provides the ability to choose content targeted towards specific publics.

Who is wearing what?

Travel around the world and back through time to learn how clothes, headwear and accessories can give clues about the people who wore them.

From Ancient Rome to the Edo period in Japan and the Kingdom of Benin, discover how artists throughout history have used clothes to reveal facts about culture, climate, fashion and function. Find out why it was so important for artists to dress their characters and models carefully using costumes, jewellery and footwear.

DISCOVER

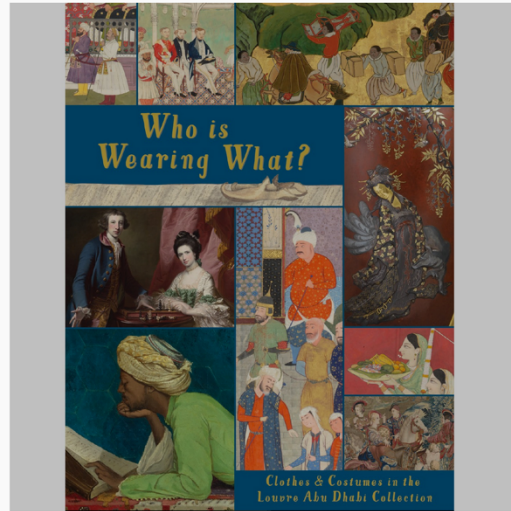


Figure 4.4: The Louvre Abu Dhabi links fashion and history in this educational e-book found on their website.

4.1.1.2. Accessibility

Accessibility is a primordial function which relates to the ability of learning materials to be used by a wide range of users (Rose, 2006). While provision of online educational offers implies a broadened accessibility, particularly related to the optional need for physical travel to the museum's building space, other barriers such as financial means, language or disabilities can hinder this advantage. Thus, accessibility concerns the overall convenience of online educational offers and the different features and options offered by the museums to accommodate the widest range of the public. These features include audio, text transcriptions, and other tools which can help overcome the practical challenges of the traditional museum experience, as well as the provision of learning materials which relate to social inclusion (Chan & Cope, 2015; Papadimitriou et al., 2016; Renel, 2019).

As it was previously noted, the 10 museums' offer of online educational content already allows for improved accessibility for larger audiences. With the provision of educational content on websites as well as social media platforms, this allows for the possibility of options such as text enlargement, which are integrated features of web browsers in computers, smartphones and other digital devices.

Financial means can be a barrier when it comes to accessibility for visitors. In the analysis, it is found that all 10 museums offer free online educational content, and for eight out of these 10 museums, all online content is free. These findings relate to Jensen (2013)'s

notion of a museum which is considerate of lower social classes and the barriers of entry fees. However, when it comes to the Art Gallery Ontario and the Mori Museum, a lot of the content is behind a paywall and requires a fee or an existing subscription, thus limiting accessibility for visitors with lower financial means (See figure 4.5). Mori Museum’s director, Mami Kataoka, shares the following in regards to reasons behind their paid content:

“During the lockdown, many art museums offered free digital content to those staying at home. But in reality, quite a lot of funds are needed for content development. In order to maintain quality, I think paid content may become unavoidable.” (Kurosawa, 2020, para. 8).

NEW! VIRTUAL ART TALKS AND TOURS

Do you want a more in depth experience of the AGO? We offer engaging private virtual art talks led by professional art educators to help you explore our collection through conversation and group members exchanging their ideas and observations on the selected artworks.

- Maximum 15 people per reservation.
- Available Tuesday through Sunday, 1:00 pm & 6:30 pm Wednesday and Friday nights. (Required to book two weeks in advance)
- \$250 flat fee per group.

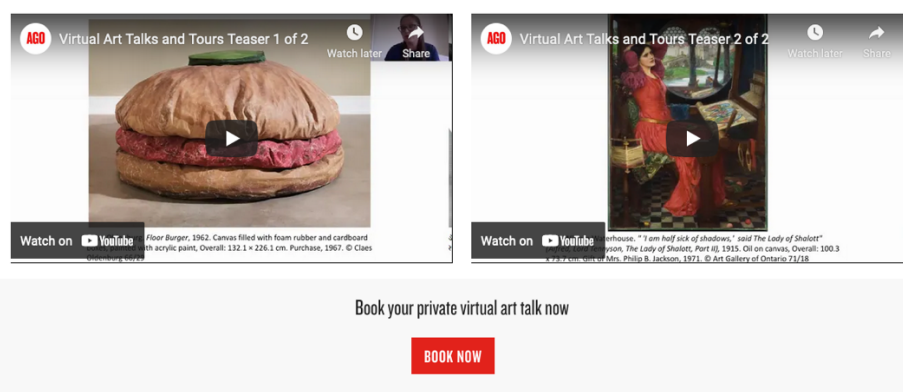


Figure 4.5: Art Gallery Ontario proposes paid private virtual tours and talks with museum professionals.

All 10 museums offer online content in English on their websites, and most of the museums also include more than one language option. For museums located in English-speaking countries (Getty Museum, Art Gallery Ontario, and Zeitz MOCAA), they did not offer online educational content in other languages. When it comes to other languages, MMCA Korea offers content in Korean; Mauritshuis and Van Gogh museum in Dutch; the Louvre Paris in French, Spanish and Chinese; the Mori Art Museum in Japanese; VOMA in French, Spanish, Chinese and Italian; and the Louvre AD in Arabic and French. As it appears, none but three of the museums provided a language option other than English and their country’s official language. In the case of VOMA, however, the multi-language option

is reserved to digital catalogs of its collection. When it comes to the Louvre Paris, the museum offers a part of its website educational content in Chinese and Spanish, similarly to the Louvre Abu Dhabi which also offers part of its website content in French. In addition, the Louvre AD offers content in additional languages (Mandarin, Russian, German and Hindi) through applications designed for at-home museum experiences (See figure 4.6).

When it comes to Instagram, most content is offered in English, with the exception of the MMCA Korea which shares most of its content in Korean. VOMA offers content in English only. For museums located in English-speaking countries, English is also the sole language used. For the other museums located in non-English speaking countries (Mori Museum, Louvre Paris, Louvre AD), English as well as the country's official language is used. In the case of the Mauritshuis and the Van Gogh museum, content on Instagram is shared primarily in English despite their location in a Dutch-speaking country.

As it can be seen, English remains the lingua franca when it comes to most online educational content and for museums' digital practices in general, regardless of location. Many of the museums in this case study are found to make increasing efforts in integrating languages within their platforms, and thus making educational content available to diverse audiences, which is in accordance with findings from Papadimitriou et al. (2016). However, language diversity when it comes to online contents, excluding the use of English, remains limited and thus inaccessible for many potential visitors on the museums' websites and Instagram platforms.

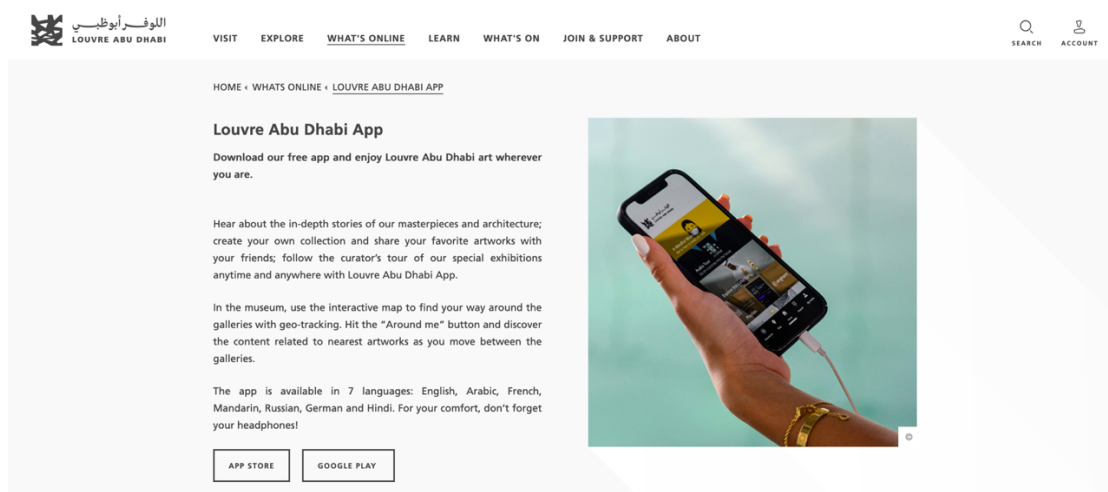


Figure 4.6: The Louvre Abu Dhabi's website presents the museum's mobile application, which is available in seven languages including Arabic, English, French, Mandarin, Russian, German and Hindi.

Looking at whether the museums cater to visually impaired and deaf or hard-of-hearing visitors, it is found that most of the museums do not provide fully adequate options, despite various integrated elements. When it comes to audio content, the Louvre Paris, the Louvre Abu Dhabi, Mauritshuis, MMCA Korea, Art Gallery Ontario, Van Gogh Museum, Getty Museum, Mori Museum and Zeitz MOCAA all provide options such as sound recordings, videos, and podcasts on their websites, as well as videos on their Instagram platforms, which corresponds to suggested features from the literature by Papadimitriou et al. (2016). In this case, VOMA was an exception as it does not provide any audio content. Zeitz MOCAA in particular places a high focus on audio tours for many of their collections and exhibitions.

While all but one museum did provide audio content, other accessibility aspects are more limited. The Louvre Paris was found to be the only museum which offers the option of video transcription, as well as consistent use of closed captions or subtitles. The Van Gogh Museum also offers a number of educational programs for children in Dutch Sign Language. However, these options were not available across all of their content. While most of the 10 museums use subtitles for video content, these are generally available for a portion of the content and offered in English only. In some cases, the use of subtitles is inconsistent across languages. For example, in the case of the Mori museum, English video content is sometimes accompanied by Japanese subtitles, while most Japanese video content has no subtitles whether on their website or on their Instagram. Following insights from Renel (2019), it can be seen that much of the audiovisual content of the museums examined in this study remains inaccessible for deaf and hard of hearing visitors.

Overall, findings show that despite evident efforts, none of the museums currently succeed in making all of their online educational content fully accessible for people of various backgrounds or disabilities.

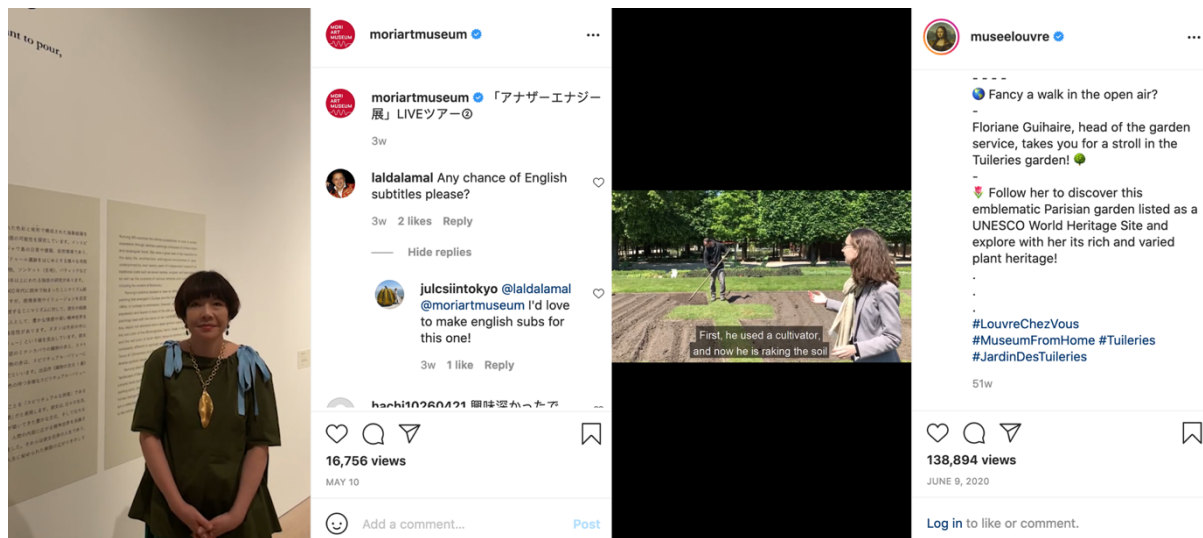


Figure 4.7: Virtual tours on Instagram. Screenshot 1: The Mori Museum's tour is in Japanese with no subtitles – one comment in the posts asks for English subtitles; Screenshot 2: The Louvre Paris's video tour is in French with English subtitles

Another important aspect of accessibility relates to social inclusion (Papadimitriou et al., 2016). Within the new museology framework, museums work towards educating communities on social justice issues, and making the museum space accessible for marginalized audiences through giving them a voice and making them feel more included (Jensen, 2013; Dewhurst et al., 2014; Papadimitriou et al., 2016).

From the analysis of the data, it was found that all but one out of the 10 case study museums showed clear instances of social inclusion efforts within their educational offerings on their online platforms. The exception to this dimension of social inclusion, from the observations, is the Louvre Paris.

When it comes to their websites, museums' social inclusion efforts are concentrated in series of talks and workshops. These talks can be either context-specific events related to a specific date, or other organized projects meant for making educational content more socially inclusive regardless of contexts. From the observation of the case studies, this is the case for all but one of the museums which were found to consider social inclusion in their educational offers, meaning Art Gallery Ontario, the Mauritshuis, the Getty Museum, the Mori museum, MMCA Korea, Zeitz MOCAA, the Louvre Abu Dhabi and VOMA, with the exception of the Van Gogh Museum. It is noted however, that in many cases social inclusion can also be hindered by the previous aspect of accessibility relating to catering to disabled visitors. For example, Mori Museum does not provide captions, subtitles or transcriptions of its social-justice-related talks.

The case study museums' use of Instagram for social inclusion varies. In general, it is found that Instagram is used to promote the aforementioned talks organized by the museum round social justice and inclusivity topics, in which context visitors are then redirected towards their website. This is found to be the case for all the museums which organize social-justice-related talks that can be found on their websites, with the exception of the Louvre AD.

From this analysis, it is seen that Instagram is also used to share short informational content with the purpose of remembrance of events or to reiterate the museum's commitment to championing social justice causes. For example, the Mauritshuis and the Getty Museum are found to use Instagram to share posts related to relevant social movement events, for example by publishing artistic content and performances in the context of Pride Month or celebrations and commemorations (See figure 4.8). In the case of the Getty Museum, it is noted that the museum also shares messages of support in the face of tragedy. Some other instances show some of the museums in this case study using the live function of Instagram to organize these social-justice-focused talks.



Figure 4.8: Posts from the Getty Museum's official Instagram. (Screenshot 1: the museum shares artwork related to inclusion within the context of Pride month; Screenshot 2: the museum posts in honor of Armenian Genocide Remembrance Day)

The case of the Van Gogh Museum is of note when it comes to consideration towards social inclusion. While instances related to online educational talks and workshops were not noted, the museum has shown commitment to social inclusion through the setting up of a new "Van Gogh Connects" program. In this case, visitors are informed of this program through a dedicated page on their website, where the following is stated:

“How can the Van Gogh Museum gain more relevance for young people in Amsterdam with a bicultural background? This will be the museum’s primary focus during *Van Gogh Connects*, a new four-year research programme.

Our society is changing; there are now new groups of visitors, those that are less likely to visit the museum as a matter of course and that the museum is less familiar with. Over a period of four years, the museum will collaborate with the target group to develop 40 activities aimed at exploring how the museum can gain relevance for young Amsterdam residents aged between 18 and 30 years old with a bicultural background.” (“Van Gogh Connects”, n.d., para.1-2).

While practical applications have not been clearly demonstrated in the Van Gogh Museum’s online programming, as of the time of the conduction of this study, the museum’s intentions and active considerations towards social inclusion in all of their future endeavors can be seen. From the observations, it can be seen that almost all of the museums in this case study put a heavy emphasis on tackling issues of social justice and dealing with relevant issues within society, which corresponds to findings from the literature and more particularly with the educational needs outlined in the research from Giannini & Bowen (2019b).

All in all, it can be noted that all 10 museums publicly emphasize the importance of accessibility in their digital missions, either by statements on their website, or public declarations in the press. For example, Art Gallery Ontario’s website presents programs that are dedicated to making their services more accessible, as it is seen in Figure 4.9. Another example is the following statement from MMCA Korea’s director:

“Even after the pandemic situation is resolved, the museum will continue to reinforce its online contents and will include an online production budget for each exhibition to reach a wider range of people from home and abroad, Youn said.” (Park, 2020, para.5).

The emphasis on accessibility and many of the related strategies found in this study correspond with theoretical findings including Foglia (2017), Jensen (2013), Dewhurst et al. (2014) and Giannini & Bowen (2019b). However, the analysis of the data reveals that while museums’ digital presence has a positive impact on accessibility, an observation which is supported by the evidence of museum’s efforts to become more inclusive, most of the museums only provide a limited range of accessible features and content, and thus fail to truly cater to all types of visitors. Thus, further improvements are needed especially when it comes to providing for people with disabilities.

ACCESS TO ART

The Art Gallery of Ontario (AGO) recognizes and celebrates our visitors' diverse abilities and needs. To ensure art is accessible to all, we offer a variety of programs and services that support visits to the Gallery and participation in its activities. Access is about care; we hope to raise awareness about accessibility and we encourage all people to incorporate access in their everyday practice and lives.

The AGO offers this platform for online programs and resources to all visitors and guests of the Gallery, creating an Access to Art Resource Hub for all our diverse communities:

UPCOMING EVENTS

Participate in our upcoming programs.



Figure 4.9: Art Gallery Ontario's dedicated "Access to art" page, in which the museum reiterates its commitment to accessibility and diversity and gives an overview of its online programs and resources.

4.1.2. Entertainment value

4.1.2.1. Interactivity

The value of interactivity in educational offerings is widely emphasized in the literature, and is an undeniable value which allows for the edutainment mission of the museum to be sustained (Mayer, 2005; Lee, 2020; Rubio-Campillo, 2020).

In this study, it is found that all museums have put some emphasis on interactive educational experiences for their visitors, as they all follow interactive strategies to varying degrees. From the analysis, it is found that a main online strategy for 7 museums in this case study is to generate user interaction and engagement in the form of online challenges on their Instagram platforms which allow for visitors, participants and observers alike, to explore and learn more about the museum's collections. This strategy was used by the Getty Museum, the Louvre Paris, Mauritshuis, Louvre AD, Art Gallery Ontario, MMCA Korea, and the Van Gogh Museum. Notably, these challenges have emerged from the closing of museums in the context of the COVID-19 pandemic, as the museums in this case study describe the purpose of these challenges to their audience as a way to stay connected with the museum from their home. One recurrent challenge from the observation of the data, adopted

by many of the case study museums, consists of users recreating famous works of art and sharing them on their Instagram platforms with assigned hashtags, which the museums can then repost on their official accounts. This particular challenge mainly invited audiences to recreate art pieces using themselves or everyday objects (See figure 4.10) or to draw and edit their own renditions of famous artworks, sometimes with playful suggested modifications (See figure 4.11). The Getty Museum has notably made several headlines as one of the first museums, along the Rijksmuseum in Amsterdam, to share and popularize this challenge with their audience, leading to several other museums following in their footsteps.

The Getty Museum's director has largely credited the success of their digital endeavors to this challenge and to the considerable amount of visitor engagement and press coverage generated from this strategy. The positive response to this challenge has also led other museums to take the challenge further. For example, Art Gallery Ontario took the initiative of sharing responses to their challenge offline through posters displayed at their Toronto location, the Mauritshuis turns these challenges into competitions by offering gifts for winners, while the Getty Museum collected the renditions to create an edited online book. Overall, this particular form of audience interaction was adopted by six out of the 10 museums in this study, with the outliers being Louvre Abu Dhabi, Mori Museum, VOMA and Zeitz MOCAA.

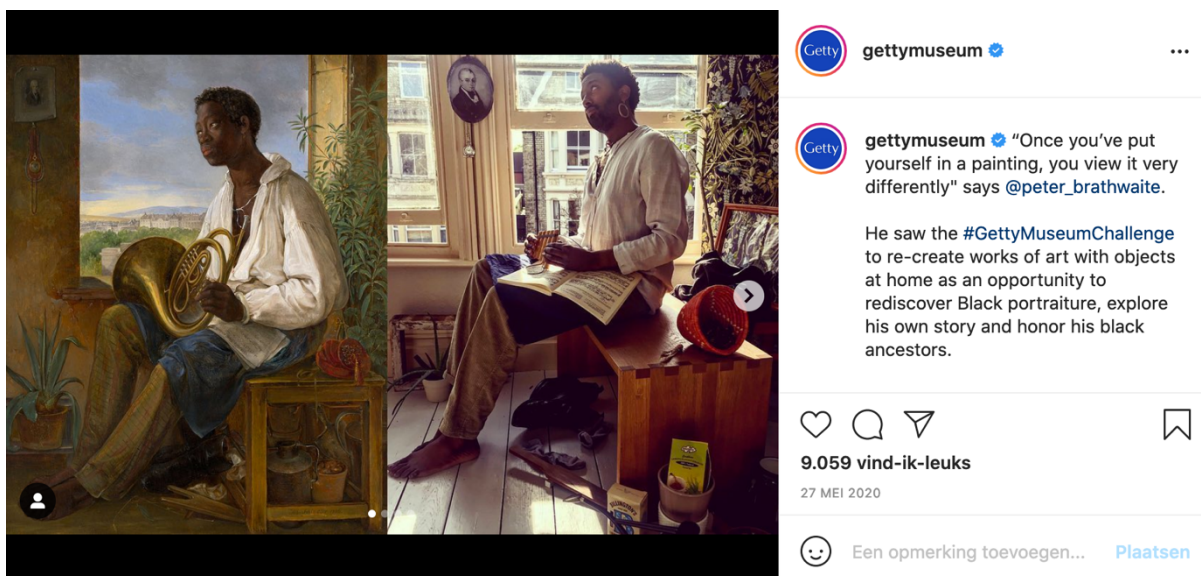


Figure 4.10: The Getty Museum's Instagram account shares a user's recreation of a painting with the #GettyMuseumChallenge hashtag.



Figure 4.11: The Mauritshuis invites its audience to recreate items from their collections to reflect the quarantine and social distancing regulations in place at the time of the post.

Another primary tool for interactive online experiences consists of creative activities, in which museums allow audiences to build or expand their artistic skills with the help of artists and experts. All the museums in this case study largely provide these learning tools in the form of workshops and video tutorials intended for both general audiences and for children. Diverse mediums are offered, including crafts or painting and drawing step-by-step video guides.

It is also found that only 5 museums in this study offer interactive activities such as games and quizzes on their online platforms. This includes the Getty Museum, the Louvre Paris, the Mauritshuis, Zeitz MOCAA and the Van Gogh Museum, which propose quizzes or game-like incentives on their Instagram platform for the general public (see figure 4.12). The Getty Museum and the Louvre Paris also offer gamification content specifically targeted towards children on their websites. However, none of these museums use this interactive strategy consistently on both Instagram and their websites and to different types of publics.

The Van Gogh museum, for example, does not offer integrated online games on its website, but instead proposes free printable games such as puzzles and board games.

In general, the bulk of interactive strategies by most museums in this study is focused on social media. These interactive strategies, in line with Komarac et al. (2020), fulfill the need for activities which call for direct participation from the audience in order to stimulate their intellectual and emotional engagement and overall enhance their learning experience. Despite this, and with the exception of workshops and tutorials, much of the educational content on the museums' website is found to be lacking entertaining interactivity components. Although several of the museum's initiatives fall under the "edutainment" umbrella, and it is found that entertainment is indeed considered when it comes to some of their content offerings, several opportunities to make knowledge-sharing and the learning process more entertaining are missed, for example through the inclusion of more interactive gamification elements as is conveyed by insights from Gaia et al. (2019) and Rubio-Campillo (2020).



Figure 4.12: Gamification elements on the Van Gogh Museum and the Getty Museum's Instagram platforms. (Screenshot 1: An Instagram post by the Van Gogh Museum challenges the public to "spot the differences" between the painter's work and the inspiration behind his piece; Screenshot 2: An Instagram post by the Getty Museum shares a question from their crossword puzzle and invites its audience to comment their answer)

4.1.2.2. Creativity and Storytelling

Engaging and creative storytelling is another important element when it comes to creating entertaining learning experiences (Giannini & Bowen, 2019b; Rubio-Campillo, 2020). In addition, the edutainment value of the museum is further developed by activities

which help bring out the creative side of the museum's audience (Ruso & Topdal, 2014). This implies that museums need to think outside the box to create compelling narratives beyond the simple dissemination of factual information to share knowledge with their audience and allow them to tap into their creativity.

This analysis finds that most of the museums in this study provide consistent instances of creative storytelling through their educational endeavors on their websites. When it comes to VOMA, compelling storytelling elements beyond textual dissemination of information are not evident.

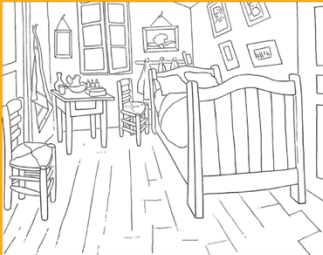
Amongst the findings from the analysis, the Van Gogh Museum uses stories as a frame for all the main educational resources on their website. The museum relates knowledge through an engaging novel-like narrative, using text, portraits, letters, or illustrations, as well as videos using animated characters intended for a younger public (See figure 4.13). The Louvre Paris is another museum among the case studies which incorporates creative storytelling in its website content. This content is mainly targeted towards children through the use of animated stories that can be found in the form of YouTube videos accessible from the museum's "Le petit Louvre" website page dedicated to children's education. The Mauritshuis also chooses to incorporate animation as a strategy to achieve creativity and storytelling into its educational features, which, following the previous museums, is mainly targeted towards younger audiences. Additionally, podcasts and audio tours present stories from the museums in narrative retelling formats, as is the case for museums in this case study such as the Louvre Paris, Art Gallery Ontario, the Getty Museum and Zeitz MOCAA. The use of these mediums corresponds to suggestions from the literature in Hoffmann et al. (2016) based on the effectiveness of these tools for the purpose of creative knowledge dissemination.

This analysis finds that storytelling narratives are consistently found in the museums' Instagram platforms, although they are more limited in terms of mediums. Furthermore, it is also found in this analysis that Instagram is also used consistently along the museums' websites when it comes to engaging the audience's creative side. In this parameter, results are found to be consistent with previous findings related to the interactive aspect of edutainment, as interactive elements were found to encourage audiences to think creatively in the context of challenges, as well as to develop their creative skills in the context of workshops and tutorials. These patterns of website and social media use for storytelling confirm insights from Hoffmann et al. (2016), Dunn et al. (2019) and Giannini and Bowen (2019a), who

highlight the emergence of these particular platforms as popular mediums for the purposes of storytelling for museum professionals.


Overall, all but one of the museums examined in this study are found to be successful in creating storytelling through the combining of different mediums, including incorporating music, audio and visual media alongside texts and images. These findings are all consistent with the literature from Jensen (2013) and Gladysheva et al. (2014), which highlights museums' storytelling practices within their educational endeavors.

For children More fun for children →



Colouring Pages →


Have fun with free printable colouring pages of famous Vincent van Gogh masterpieces.



YouTube

Story Zoo →

StoryZoo characters Bax, Toby and Pepper visit the Van Gogh Museum. Join them on their adventure



Vincent van Gogh Board Game →

Play the board game together and follow Vincent van Gogh's journey through the places he lived and worked.

Figure 4.13: The Van Gogh Museum uses visual media and narrative techniques to share knowledge; in this page, young viewers can access informative YouTube videos featuring animated “Story Zoo” characters.

4.2. The Museum Visitor Experience

The audience-focused vision of the new museology framework implies the design of the ideal museum visitor experience (Falk & Dierking, 2000; Gladysheva et al., 2014). This visitor experience is understood as an intersection of the personal context, the social context, as well as the context of the museum's building space. Translated into the digital, this implies, first, the consideration of personalization elements and features (Verboom & Arora, 2013). The next consideration relates to the creation of social environments, including the use of communication channels and incentives for sharing (Siu et al., 2013; Gladysheva et al., 2014). Finally, digital settings which invoke the immersive environment of the museum experience are also considered (Devine & Tarr, 2019).

Following this framework, the following section presents a detailing of the results pertaining to the digital strategies adopted by museums to create engaging visitor

experiences, in regards to these three dimensions of the museum visitor experience: Personalization, socialization and the digital setting.

4.2.1. Personalization

The degree of personalization of the visitor journey is an important aspect of the museum visitor experience (Falk & Dierking, 2016). This personalization implies that visitors can choose their own journey within the museum, and that the museum experience can accommodate different types of visitors depending on their circumstances and what they seek to retain from the experience.

The museums' offer of online content through websites and social media is arguably a form of personalization that allows the visitors to choose their own journey through the freedom of online browsing and scrolling experiences. In addition, the museum' websites and Instagram often link to other platforms such as mobile applications, as is the case with the Louvre AD, the Mauritshuis, etc., which effectively achieves channel personalization (Riethus, 2020). Through these platforms, visitors are also able to save their favorite part of the journey through integrated features such as bookmarks, and they can also receive post notifications. In this context, it is found that all museums in this study allow for the personalization of their audience's journeys, to an extent.

Out of the examined case studies, only 2 museums, MMCA Korea and Louvre Abu Dhabi, currently allow users to register and create a personal account on their website. However, these accounts do not offer any personalization features, and are intended for ticket buying and other general offline activities. As such, it is found through the analysis that none of the case studies make provisions on their websites for visitors to create customized profiles which allow them to save their favorite art on the museum's own platform, be able to curate which content they want to have access to based on their own choices or on algorithms, or to accurately track their progress when it comes to imbedded interactive elements, among other potential personalization features suggested in the literature from Verboom and Arora (2013) which can effectively increase their engagement.

Nevertheless, it is observed that a few museums in this study facilitate the personalization of the visitor' journeys through other parameters including visitor trails or diverse channels, and the ability to customize their journeys to focus on their own interests. For example, the Louvre Paris, as can be seen in Figure 4.14, provides various visitor trails which can appeal to different types of visitors based on their subject interests and the length of time they wish to spend at the museum. However, these trails are originally designed to be

followed during a physical visit to the museum, despite all contents of the trail being digitized; nevertheless, the visitor is able to follow the trails and learn from the shared contents. Alternatively, the museum also provides different visitor trails on their social platform through the Instagram “story” feature, as can be seen in Figure 4.15. This pattern of established visitor journeys is also found in other cases in this study, including Art Gallery Ontario, Louvre AD, and the Mauritshuis. Personalization is also offered in these museums through the choice of different virtual tour options, organized between different rooms within the museum or different themed exhibitions. It is noted that while the Mauritshuis museum offers one virtual rendition of its entire museum building and exhibited artworks, the free exploration aspect of this virtual tour allows for the personalization of the experience to be achieved. These findings correspond with Foglia (2017)’s emphasis on creating features which allow for unique visitor journeys.

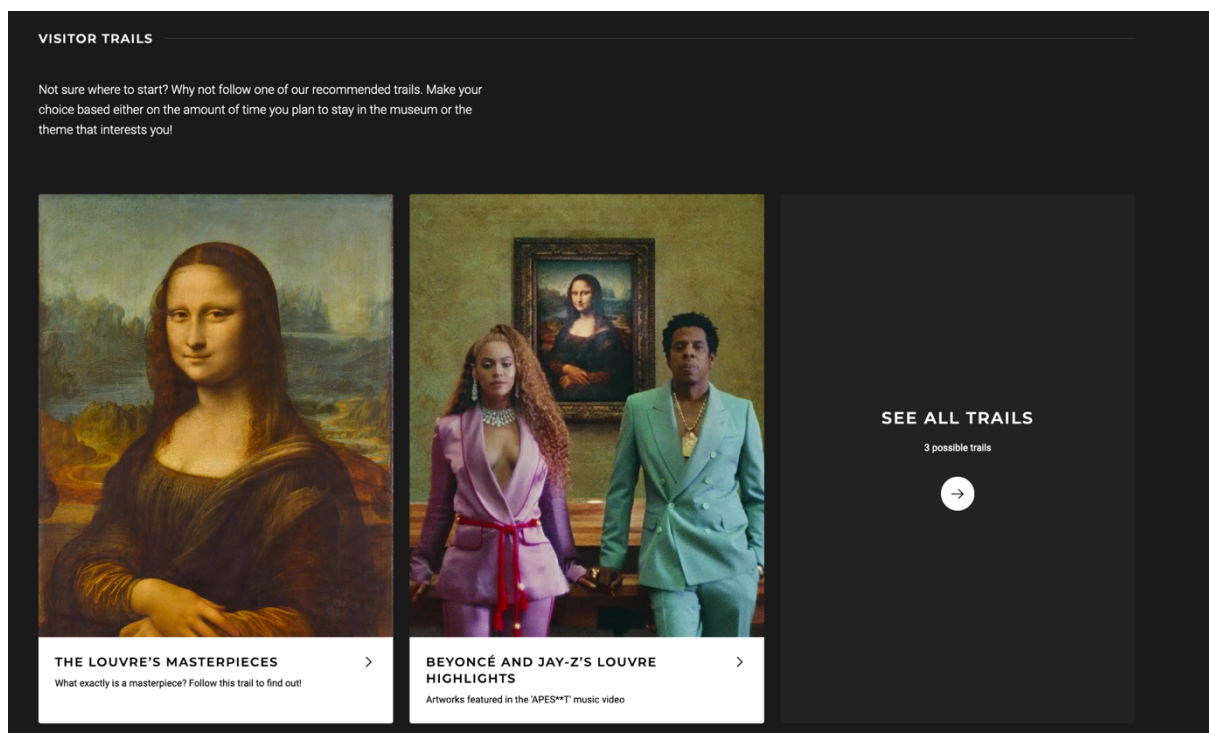


Figure 4.14: The Louvre Paris’s website offers different visitor trails which vary in themes and lengths.

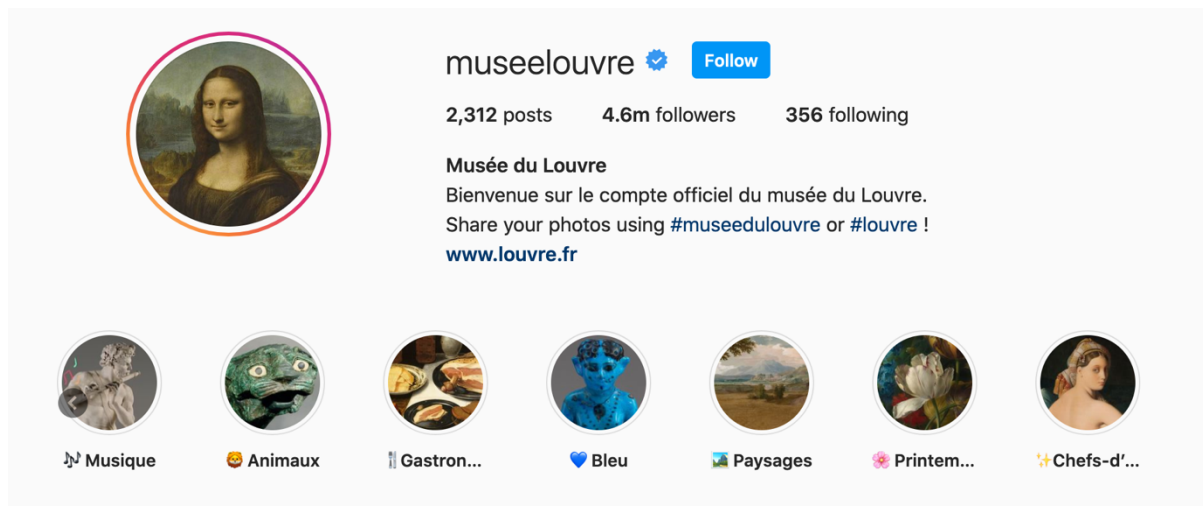


Figure 4.15: The Louvre Paris’s Instagram account offers different visitor trails through stories varying in themes. (Translation for the visible categories on the page, from left to right: Music; Animals; Gastronomy; Blue; Landscapes; Spring; Masterpieces).

When it comes to the variety of channels, as previously established, it is found through the analysis that all 10 museums achieve this through their websites and on their Instagram platform. From the examined case studies, it is observed that their Instagram posts often provide links for users which redirect them towards their website. In addition, several museums use both their website and their Instagram to link visitors to other mediums through which they can continue their online journey, such as YouTube. Museums also link to mobile applications which allow for a fully digital experience, which is the case of the Louvre Paris, Louvre AD, Mauritshuis, the Van Gogh Museum, and MMCA Korea, which is line with Riethus (2020)’s theoretical findings. In addition, some of the museums create partnerships with other platforms, for example streaming platforms, as is the case for Louvre AD’s Anghami channel or Zeitz MOCAA’ Soundcloud channel, which visitors can access from their websites.

Additionally, it is found through the observation of the case studies that the previously-described interactive edutainment strategy of Instagram challenges can effectively answer to the personalization need for participants in these challenges, as it allows them to give their own takes and interpretations on the artworks, and thus achieves an individualized, active and engaging visitor experience.

When it comes to some cases in this study, a discrepancy between website content and social media content is found to provide a certain hindrance to the full personalization potential of the visitor experience they can provide. For example, in the case of the Mori

museum and the MMCA, personalization features are a lot more apparent through their website as opposed to their social media.

Overall, it is found that these findings are line with theoretical insights from Devine and Tarr (2019) as well as Riethus (2020), as the multi-media approaches in these case studies create interconnected channels which allow visitors to personalize their journey by providing choices of how and through which channel their museum journey is experienced, as well as freedom of choosing the order of visiting and the content which they want to consume.

4.2.2. Socialization

Socialization and social interactions can have a great influence on the quality of the museum journey and the visitor's overall experience in the museum space (Falk & Storksdieck, 2005). In the context of the digital museum experience, this socialization is achieved through communication channels which allow for the visitors to connect, share their thoughts and their experiences on the museum, and to communicate with the museum's personnel (Castle, 2004; Rubio-Campillo, 2020).

Socialization is allowed in social media through the use of comments and messages. In this study, eight of the 10 examined case studies are shown to provide incentives for their audience to ask questions and share comments and suggestions on their Instagram posts or in Instagram live chats. The exceptions to this are the Louvre AD and the Mori museum. The previously observed gamification-like elements on some of the museums' Instagram platforms are also considered to be incentives which foster communication on this channel. A particular consideration towards fostering two-way communication can also be seen in the case of the Getty museum, as they share Instagram posts for the specific purpose of answering and providing more information on questions that were asked directly by their audience.

Examples of these conversational and game-like incentives from the data include the following:

“Several insects, caterpillars and snails hide in this vegetation, perhaps attracted by its scents. Can you find them?” (Musée du Louvre, 2020)

“It's a study I need, for I want to learn', wrote Vincent to his brother Theo in 1889.... What would you like to learn?” (Van Gogh Museum, 2020).

The Van Gogh museum notably considers this strategy as one of their key strengths which allows them to excel at generating engagement, which is concurrent with findings from Gladysheva et al. (2014) who prone the positive engagement resulting from social media interactions with the museum's audience.

On their Instagram platforms, the analysis showed that Art Gallery Ontario, the Getty museum, Zeitz MOCAA, and Mauritshuis organize events which allow visitors to interact with each other as well as with the museum's experts. These events include live chat sessions with artists and experts, as can be seen in figure 4.16, or events which are more social in nature such as cocktail nights or celebrations and holidays like New Year's Eve, as can be seen in figure 4.17. These events again correspond with recommendations in the literature by Gladysheva et al. (2014).

However, these strategies are not found on the museums' websites, with the exception of the Getty Museum, which organizes 'Getty Get-Togethers' in which visitors can participate in collective museum journeys that allow them to enjoy the museum's collection alongside discussions and chats with other visitors and educators from the museum.

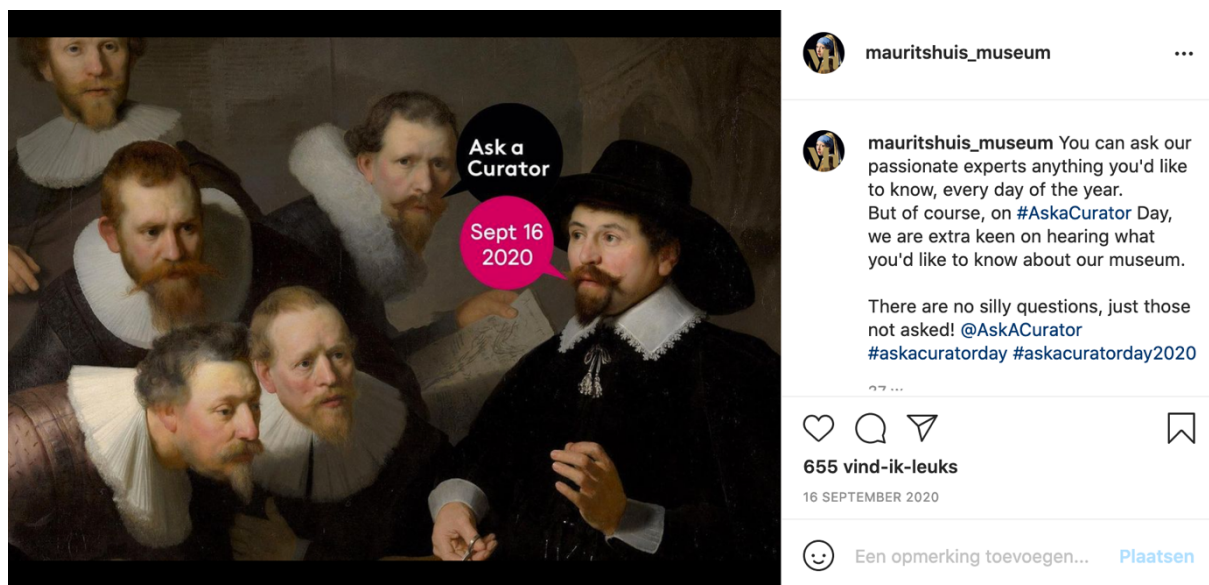


Figure 4.16: The Mauritshuis museum invites its audience to ask questions which will be answered by the museum's experts on #AskaCurator day



Figure 4.17: Zeitz MOCAA shares highlights from their first WOZA virtual party on the Instagram platform

Other interesting approaches are also taken to foster social contact between visitors and the museum. As seen in Figure 4.18, Mori Museum, for example, shares recipes from artists and provides instructions for visitors to recreate the dish. Other museums like the Van Gogh museum create series of posts in which museum experts and staff are invited to share something about themselves and their perceptions. These strategies allow for a personal rapport to be created via shared experiences and a personal glimpse into artists or museum staff's interests.



Figure 4.18: Strategies used by museums to foster personal connections with the audience through their Instagram platform. (Screenshot 1: The Van Gogh Museum shares a series of stories from the museum’s staff using the hashtag #VanGoghMuseumStaffStories; Screenshot 2: Artist Navin Rawanchaikul shares a recipe in the context of the “Artists Cookbook by MAM” series)

On all but one of the museum’s websites, however, no channel of communication is offered for the public to communicate directly with museum staff or experts during their online journey, as there is a noticeable absence of comment sections, chatbots, or other direct or live communication mediums which research by Gaia et al. (2019) finds effective in improving the social aspect of the digital visitor experience. The exception to this is VOMA, which provides an info wall for visitors to comment or ask questions which is integrated into the virtual experience, and the aforementioned collective visitor journeys by the Getty museum. Additionally, it is also found that only one of the 10 museums in this case study provided a channel where visitors could directly interact with each other on their websites, such as a participative forum or blog. In this case, the Getty museum was found to be the only one to offer a blog where readers could post comments and reply to others’ comments, a strategy which falls in line with findings from Veerboom and Aurora (2013) which emphasize its importance in strengthening visitors’ social and personal ties with the museum. The other case study museums are thus all missing a key component of the museum journey related to socialization when it comes to their website platforms.

The analysis of these case studies thus shows that socialization is a core part of museum’s strategies when it comes to social media, which is in accordance with the literature from Gladysheva et al. (2014).

4.2.3. Digital Setting

The physical building of the museum is another element which is traditionally considered to be an integral part of the visitor's journey (Falk & Dierking, 2016). In the digital space, this physical element can be, if not replicated, replaced by or translated into digital setting elements (Devine & Tarr, 2019). This digital setting implies the use of modern technologies which allow for renderings of the physical experience of the museum (Devine & Tarr, 2019; Lee et al., 2020; Quick, 2020).

The digital setting is commonly recreated through virtual tours on the museums' websites. From the observation of the case studies, it is found that six out of the 10 museums, namely the Louvre Paris, the Mauritshuis, MMCA Korea, Zeitz MOCAA, Louvre AD, and VOMA, propose virtual tours of their collections or specific exhibitions on their official websites using Virtual Reality technology (VR) (See figure 4.19). The design of the virtual tours fulfills the goal of allowing visitors to immerse themselves within the virtual rendering of the museum's walls, and for them to easily and fluidly navigate around the museum similarly to how visitors would stroll within the museum building, through the integration of touchpoints (see figure 4.20). These virtual tours also allow for a close-up exploration and observation of the details of the artworks.

In the case of the Van Gogh museum, the Mori museum, the Getty museum and Art Gallery Ontario, the analysis finds that they do not include or link to digital setting renderings through virtual reality tools on their platforms.

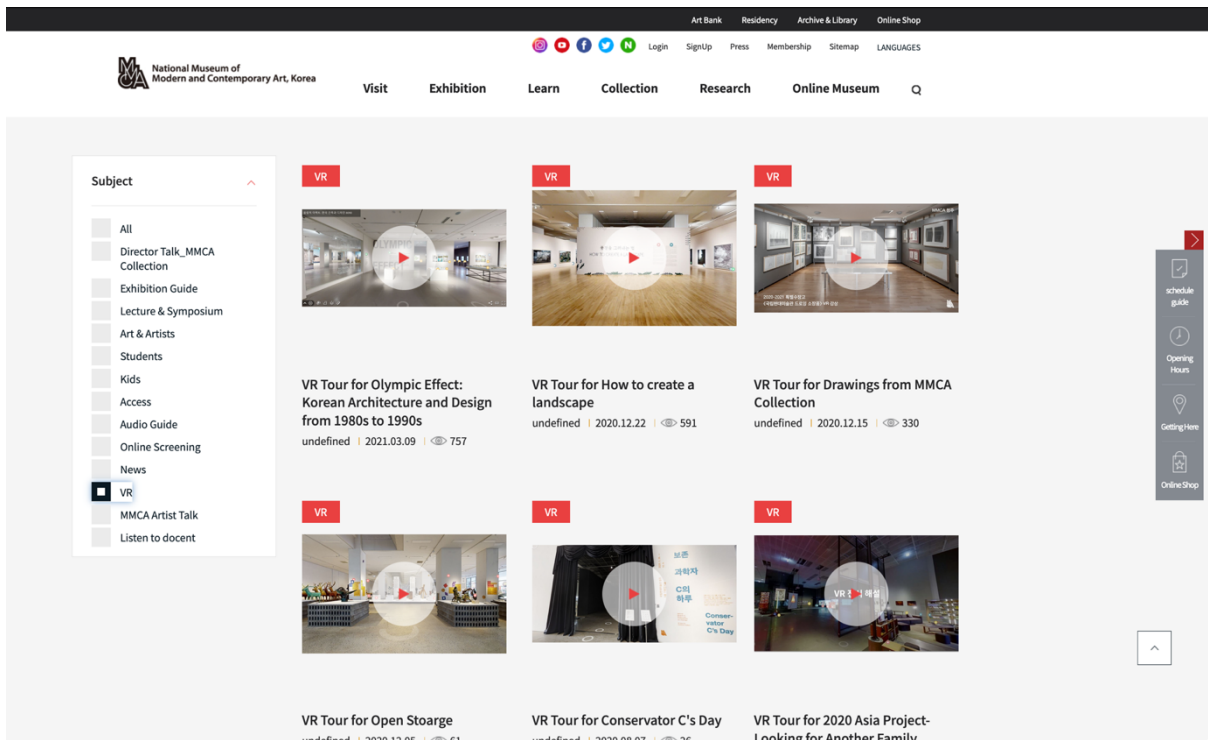


Figure 4.19: MMCA Korea's website offers VR experiences for different collections and exhibits

EXHIBITION'S VIRTUAL TOUR

"We were struck by the bankruptcy of European culture and thought it was necessary to destroy the old culture in order to build a new interpersonal language."

Marcel Janco

Everywhere, images came before letters: in Egypt, China and Mesopotamia, as in the Americas, the first forms of writing were pictograms and ideograms, or stylised drawings.

The advent of letters, of the alphabet, revolutionised writing. The shift from images to the written word inevitably involved loss, as if abandoning images gave rise to a nostalgia for meaning: letters no longer directly carried the meaning conveyed by images. The cost of this shift was a palpable draining of vigour, a dis-incarnation. From the Chinese (写 : xiě), to the Greek (γράφειν: graphein), via the Arabic (يكتب : yaktub), the respective verbs for "to write", in their etymology, relate to pictures and painting.

Western poets and writers taking the path of abstraction turned to non-European civilisations, in particular the "Orient" covering both the Arab world and the Far East. Calligraphy, in particular, provided a form of writing able to reintroduce the emotion lost through the standardisation of writing. Calligraphers also saw how a non-figurative art that was nonetheless anchored in meaning could avert the danger of the purely decorative that has always threatened abstract painting.

From Kandinsky to Pollock, and from Masson to Dotremont, the search for the "pictographic", the exploration of an artistic path between pictures (picto-) and writing (-graphic), runs like a thread through the 20th century.

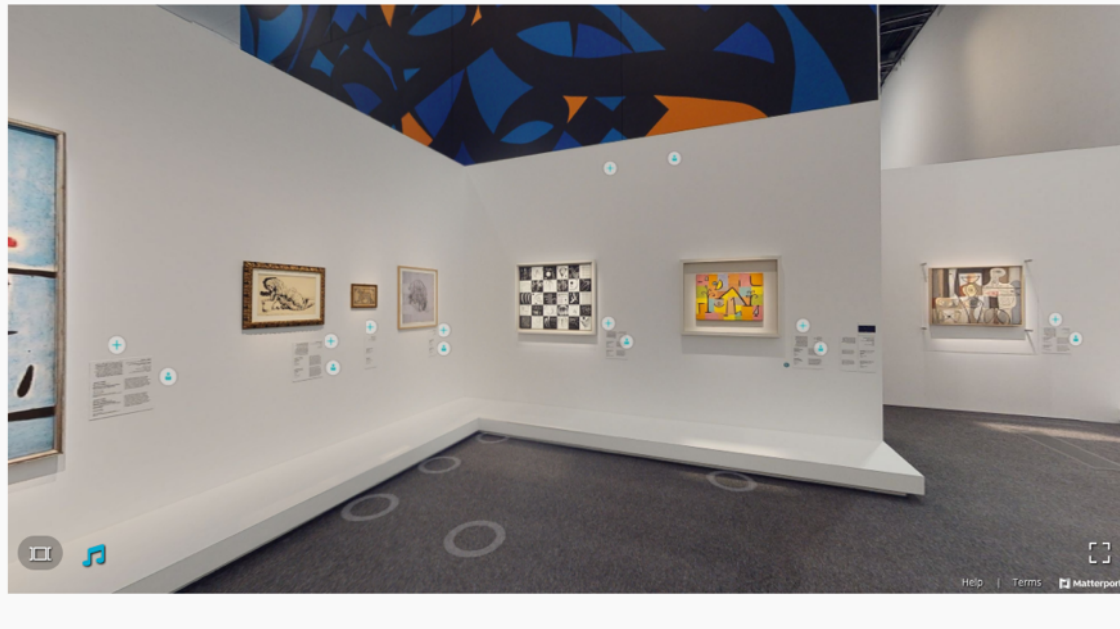


Figure 4.20: A virtual tour for the "Abstraction and Calligraphy" exhibit on the Louvre AD's website; Different touchpoints allow for easy and fluid navigation.

It is also found that for five of these six museums, the use of VR technology is restricted to these virtual tours which are meant to present specific artworks and collections from the museum's resources, meaning VR is not integrated into other services of the digital museum experience. VOMA, however, as an exclusively online museum, is the one museum in this study which fully adheres to creating a seamless virtual setting design that effectively replaces the physical environment for its audience. It provides a virtual rendition of every aspect of the museum experience, including a virtual entry from outside the museum space and the surrounding views of its virtual location, and every other aspect of the museum including visualizing the artwork, the accompanying information, the museum shop, etc.

VOMA thus allows for a complete, uninterrupted VR immersion into several aspects of the museum experience. VOMA's creator, Stuart Semple, also shares the following in regards to advantages of this museum's digital space:

“[VOMA's] zoom functionality is crazy.... Normally, you can't get your nose right up to the canvas, because there's a line of tape and a security guard watching you. We recreate each artwork so that it's 3-D. You can look around and see the sides of each work, which you can't do [in other online art galleries].” (Nalewicki, 2020, para.14).

Other museums in this case study, including Louvre AD and MMCA Korea, also choose to integrate VR through other mediums including mobile applications which they promote on their website or Instagram platforms. Finally, when it comes to Instagram, the social media setting gives limited options when it comes to recreating digital settings through virtual reality tools. As an alternative, it is found in the analysis that several of the examined museums, including MMCA Korea and Mori museum, propose digital museum tours through the Instagram live feature, as can be seen in figure 4.21, or through videos shared as posts on the social media platform or linked from their Instagram posts.



Figure 4.21: The Mori museum offers a virtual tour of the “Another Energy” exhibition through the Instagram live feature

The overall findings correspond with Quick (2020)’s notions around immersive virtual museum experiences, and with insights from Lee et al. (2020) on the effective use of VR technologies to recreate the museum’s physical environment. However, these findings are not found to be applied for all the examined case studies, and a discrepancy is found between the use of immersive virtual setting experiences between the museums’ website and Instagram platforms.

5. Conclusion

The research aim of this study was motivated by evidence from recent insights in the literature surrounding digitalization in museology. This digitalization of contents and services has been challenging for museums, as they struggle to adapt to new digital ways of functioning. More specifically, museums are faced with the challenge of how to translate the physical museum experience into an online format (Carvalho & Matos, 2018). Furthermore, the museum's social mission is hindered by various factors. Notably, the museum's educational offers are found to lack stimulating and engaging elements, leading to a decrease of interest for visitors (Rubio-Campillo, 2020). During recent times, this social mission was further undermined by the absence of physical visits to the museum space, which uncovered the overall limitations of museums' digital practices (Radermecker, 2021).

As a result, a few recommendations are found in the literature. First, the notion of the new museology framework in the digital space is regarded as an effective model for museums to generate engagement from visitors and grow their audience, all within the purpose of furthering their societal mission (Marty, 2008; Komarac et al., 2020). Within this framework, museums seek to pursue an edutainment approach to their educational purpose while effectively translating the dimensions of the museum visitor experience into the digital sphere (Lee et al., 2020). As such, this research focused on online strategies used by museums through the lens of this digital new museology framework. Therefore, the following research question was constructed: *How do museums create digital visitor-centric experiences that further their societal role?* Additionally, the following sub-questions were examined: *How can museums further their edutainment mission in a digital-only environment?* and *How can museums provide engaging visitor experiences in a digital-only environment?*

This case study analysis allowed to uncover a number of findings in terms of museums' new museology practices in the digital context. These findings provided answers to the research question for this study, as the analysis unearthed many digital strategies used by museums which correspond to new museology insights; and goes further as well as many areas where improvements are of need are discovered. The results overall confirm patterns of museums' use of audience-focused strategies in line with the digital new museology framework for the purpose of furthering their societal mission.

Previous research from Padilla-Meléndez and del Águila-Obra (2013) as well as Gladysheva et al. (2014) highlighted the use of websites and social media as platforms where museums create strategies which allow for greater audience engagement. These insights were

confirmed by the results of this study, as several instances of the museums' use of their websites and Instagram platforms for these purposes were found in all the cases in this study.

When it comes to strategies used by museums to further their edutainment mission in the digital-only context, findings were found to be mostly in line with theoretical insights. Results related to the educational value of the museums' digital strategies are mainly in line with Papadimitriou et al. (2016) and Flouty (2019) when it comes to the availability of resources, as well as Ruso and Topdal (2014)'s notions around the need for content related to diverse interests and catered to diverse audiences.

In terms of accessibility, gaps were found between theoretical suggestions and examined practices. With a few exceptions, considerations towards specific aspects were found to be largely consistent with the literature. This includes findings related to the consideration for different social classes through the offer of free online content (Jensen, 2013); and many initiatives around the inclusion of marginalized communities through socially-inclusive educational content (Giannini & Bowen, 2019b). When it comes to accessibility for disabled visitors, the literature suggests the creation of sonically and visually diverse environments with inclusive features in order to cater to deaf and hard of hearing or visually impaired visitors (Papadimitriou et al., 2016; Renel, 2019). In this case, findings for the case studies are divided, as this diversity is realized when it comes to certain features, such as audio-focused content, while others are found to be lacking. Thus, this finding suggests that many features remain to be implemented in order to improve accessibility for disabled visitors.

In terms of findings related to the entertainment value of museums' digital strategies, it is found that all the examined case studies are successful in implementing interactive strategies in many of the content, and all but one are found to be successful in the case of creativity and storytelling, which is in accordance with the literature on the importance of using entertainment means as motives for increasing visitors' active participation and interest in the learning process (Gladysheva et al., 2014; Giannini & Bowen, 2019b; Komarac et al., 2020). From these results, it is found that many of the museums fulfill parameters of edutainment which, as outlined by Rubio-Campillo (2020), allow for museums to encourage visitors' immersion and engagement in the digital-only space.

Nevertheless, several opportunities which can further improve the edutainment mission of the museum are only found in half of the cases in this study, particularly when it comes to the incorporation of gamification strategies, found by Gaia et al. (2019) to considerably improve engagement in online learning experiences. Additionally, improvements remain in terms of

applying edutainment principles towards all the informational content in these museums, towards diverse audiences and evenly across their digital platforms; as it is found that interactive elements are more focused on social media, while storytelling is more frequently incorporated within content aimed at young audiences rather than the general public. This is found to be in contrast with the theoretical background which finds interactive features to be an essential component which should thus be implemented across all content and channels (Komarac et al., 2020); and the literature which focuses on the use of digital storytelling for the general public (Hoffmann et al., 2016; Dunn et al., 2019).

Overall, findings have uncovered many current strategies related to the digital edutainment mission of the museum; while several gaps and opportunities are found in this first aspect of the digital new museology framework.

When it comes to providing engaging digital visitor experiences, many correlations and discrepancies are found. In terms of personalization, some of the findings were found to be in accordance with the literature on the use of personalization features to provide engaging and unique visitor experiences. Amongst correlations with the literature, it is found that all the examined museums achieve the parameter of offering inter-connected channels, in accordance with insights from Foglia (2017), Devine & Tarr (2019) and Riethus (2020). However, when it comes to other personalization features, it is found that strategies are more limited, particularly when it comes to features including personal profiles and other features which allow for visitors to explore the museum according to their unique interests (Verboom & Arora, 2013). While some of these features are technically allowed through the use of web browsers and the design of Instagram's platform, features specifically considered and set up by the museums are not found in the analysis.

In terms of socialization, other discrepancies are evident in the findings. Most of the museums (nine of the 10 studied cases) are shown to provide incentives for encouraging responses and comments from users on their Instagram platforms and / or to create social bonds between visitors and the museum, which is line with findings from Gladysheva et al. (2014) on the rise of social networking platforms for this purpose. However, across all platforms, only four museums were found to offer direct pathways for two-way communication between visitors and artists or experts, or between visitors themselves, which could allow them to foster the aspect of socialization that is essential within the digital visitor experience (Falk & Storksdieck, 2005). More particularly, a noticeable absence of socialization features is found when it comes to museum websites for all but one of the cases in this study.

When it comes to the digital setting, findings are in accordance with theoretical insights from Lee et al. (2020) and Quick (2020) on the use of VR technologies for the purpose of immersive recreations of the physical museum environment for six of the case studies. For other cases, opportunities to make their digital visitor experiences more immersive through inclusive digital setting renderings are not found, which differs from the previous literature. For this dimension, it is important to note the case of VOMA, which creates immersive virtual renderings of most aspects of the physical museum visit. This museum can thus be a model for other museums in terms of the use of VR technology in recreating the physical setting of the museum experience, for the purposes of creating immersive experiences and stimulating the growth of audiences, and thus the growth of the museum's social impact (Lee et al., 2020).

Overall, several strategies are uncovered when it comes to how museums currently create engaging visitor experiences in the digital space; while several gaps and opportunities are also found in this other aspect of the digital new museology framework.

In terms of differences between the examined case studies, significant variations between the degrees of concordance of these 10 cases with the digital new museology framework were found. Three out of the 10 studied museums were found to respond to a certain extent to all the elements of the digital new museology framework, namely the Mauritshuis, Zeitz MOCAA and MMCA Korea. The evidence found suggests a strong consideration of digital technologies in their mission-focused strategies, which relates to the literature from Parry (2013) and Chan and Cope (2015) on the integration of digital strategies within all aspects of the museum experience. From this, it is found that these museums all fulfill the criteria of the digital new museology framework, thus effectively translating their edutainment mission into the digital sphere, in accordance with various insights from the theoretical background including Mairesse & Desvallees (2010) and Lee et al. (2020); and effectively creating engaging visitor experiences, which relates to Falk and Dierking (2016). It is noted, however, that while evidence of the application of the edutainment and digital visitor experience parameters of the new museology framework are found in the results for these cases, this does not imply their implementation across all the content and resources of the museum. As it is established in the literature by Parry (2013), these museums are thus not fully qualified to be considered as post-digital museums within the new museology framework, but can be considered to be on the right track to fulfill this status. It is of note that despite VOMA's exclusively-digital nature, it does not fully fulfill the criteria of a post-digital museum, which is based at its core on the societal role of the museum, due to several

gaps in VOMA's strategies around edutainment and the other dimensions of the digital museum experience.

In the context of the remaining examined cases, the analysis finds that while many museums feature a number of digital elements which they develop and use consistently, other elements are neglected. As such, the overall study finds evidence of almost all aspects of the digital new museology framework in each of the case studies; however, most museums were not found to incorporate all these aspects at once in their digital offerings. For example, the Louvre Abu Dhabi was found to be one of the most effective cases in considering accessibility parameters in their educational offerings, in accordance with theoretical insights including Foglia (2017) and Papadimitriou et al. (2016), while it was also found to be lacking in integrating interactive elements which effectively achieve the edutainment goal of the museum, thus contrasting with recommended insights from the literature including Komarac et al. (2020). Another example is the case of the Louvre Paris, which was found to present strong correlations with theoretical insights regarding accessibility parameters for disabled visitors relating to Papadimitriou et al. (2016), while the social inclusion aspect of accessibility relating to Jensen (2013) and Giannini and Bowen (2019b) was noticeably absent, meaning the accessibility dimension of the educational mission of the museum is undermined in the case of this museum, following notions by Rose (2006). Similar patterns of correlations and contrasts within a single case can be found in all of the analyzed case studies. Furthermore, as only three out of the 10 cases in this study are found to respond to a certain extent to all the dimensions within the new museology framework, the challenge to adapt to fully digital practices which effectively translate their societal role into the digital sphere remains clear for many museums.

Overall, it was found that while many aspects correspond to the theoretical framework on museum's digital practices within the context of the new museology framework, several opportunities and effective strategies suggested in the literature have yet to be implemented by many museums. Following these findings, museums are encouraged to focus their resources on offering experiences which fulfill the full criteria of the digital new museology framework, which will allow them to further their societal role in this evolving digital era. Museum professionals also have the opportunity to learn from many strategies outlined in the results of this analysis. This research is thus useful in the field of museology as a guiding model for digital strategies which museums can apply within their digital platforms for the goal of fulfilling their societal role. Furthermore, the research can also be used as a reference point for areas of improvement for the purpose of furthering their societal missions in the

digital space. To conclude, this study was successful in contributing to the research around museums' digital strategies for the purpose of fulfilling their societal role through uncovering current existing patterns as well as gaps in museum practices, which museums need to consider in their future endeavors.

5.1. Limitations and Future research

Overall, the purpose of this research was to identify new museology strategies used by museums to further their edutainment mission and maintain audience engagement on their digital platforms. However, several limitations are present in the research.

First, a limitation commonly found within qualitative content analysis relates to the researcher's interpretations. In the context of this case study, this limitation was mediated by several considerations from the researcher in the analysis process. Second, other limitations were met during the research process, in terms of the availability of supportive documentation published within the delimited timeline.

To continue, the aim of this study was not to compare, but rather to explore strategies used by different museums to further their societal role in the digital space. Furthermore, this research aimed at maintaining an international perspective through the observation of museums from different locations across continents. However, this perspective limits insights on the impact of the museums' contexts, including location-specific policies and structures.

These limitations provide opportunities for future research. First, future research can focus on a more comparative perspective of museums' digital endeavors, in order to identify and explain points of differences in the way they approach the elements of the digital new museology framework, including through a more geographically-focused lens. Moreover, future study with a higher number of case studies, as well as more in-depth exploration of other mediums including other social media platforms, can also improve the validity of the findings. Alternatively, future research on this topic can use other research designs, including in-depth interviews, which could further confirm the current research findings for this study.

Finally, the context of the COVID-19 pandemic allowed this research to focus on conditions in which the physical building of the museum was often completely inaccessible, thus providing a prime opportunity for observing the museum experience in a digital-only environment. As such, future research can use insights from this study for a comparative case study research which also looks at the post-pandemic strategies of museums in the digital space.




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7. Appendix

Appendix A: Data collection

Table A.1: Websites pages and Instagram posts

Case	Platform	Data	Referral
Louvre Paris	Instagram	10 purposely-chosen posts published within the chosen timeframe	See annex, pages 7-13 for complete overview
	Website	10 purposely-chosen pages from the museum's official website	See annex, pages 2-6 for complete overview
Mauritshuis	Instagram	10 purposely-chosen posts published within the chosen timeframe	See annex, pages 14-19 for complete overview
	Website	10 purposely-chosen pages from the museum's official website	See annex, pages 20-25 for complete overview
Van Gogh Museum	Instagram	10 purposely-chosen posts published within the chosen timeframe	See annex, pages 31-35 for complete overview
	Website	10 purposely-chosen pages from the museum's official website	See annex, pages 26-30 for complete overview
Getty Museum	Instagram	10 purposely-chosen posts published within the chosen timeframe	See annex, pages 44-48 for complete overview

	Website	10 purposely-chosen pages from the museum's official website	See annex, pages 36-43 for complete overview
Art Gallery Ontario	Instagram	10 purposely-chosen posts published within the chosen timeframe	See annex, pages 55-61 for complete overview
	Website	10 purposely-chosen pages from the museum's official website	See annex, pages 49-54 for complete overview
Mori Museum	Instagram	10 purposely-chosen posts published within the chosen timeframe	See annex, pages 69-75 for complete overview
	Website	10 purposely-chosen pages from the museum's official website	See annex, pages 62-68 for complete overview
MMCA Korea	Instagram	10 purposely-chosen posts published within the chosen timeframe	See annex, pages 82- 86 for complete overview
	Website	10 purposely-chosen pages from the museum's official website	See annex, pages 76-81 for complete overview
Zeitz MOCAA	Instagram	10 purposely-chosen posts published within the chosen timeframe	See annex, pages 95-99 for complete overview
	Website	10 purposely-chosen pages from the museum's official website	See annex, pages 87-94 for complete overview

Louvre Abu Dhabi	Instagram	10 purposely-chosen posts published within the chosen timeframe	See annex, pages 106-110 for complete overview
	Website	10 purposely-chosen pages from the museum's official website	See annex, pages 100-105 for complete overview
VOMA	Instagram	10 purposely-chosen posts published within the chosen timeframe	See annex, pages 116-120 for complete overview
	Website	10 purposely chosen pages from the museum's official website – note: screenshots from areas within the virtual experience are considered as pages in this case	See annex, pages 111-115 for complete overview

Table A.2: Documents per case and themes

Case	Theme	Docu ment type	Citation
Louvre Paris	Accessibility / Diversified learnings	Article	France 24. (2021, March 26). <i>Louvre museum makes its entire collection available online</i> . France 24. https://www.france24.com/en/culture/20210326-louvre-museum-makes-its-entire-collection-available-online .
Mauritshuis	Accessibility / Interactivity / Storytelling	Article	Lalonde, V. (2021, February 9). <i>Mauritshuis wants to make the museum accessible to everyone</i> . The Drum. https://www.thedrum.com/profile/dept-agency/news/mauritshuis-wants-to-make-the-museum-accessible-to-everyone .
Van Gogh Museum	Socialization	Report	Van Gogh Museum. (2020). <i>Strategic Plan 2021 - 2024</i> . Van Gogh Museum. Retrieved from https://www.vangoghmuseum.nl/en/about/organisation/mission-and-strategy
Getty Museum	Interactivity / Digital setting	Article	Potts, T. (2020). The J. Paul Getty museum during the coronavirus crisis. <i>Museum Management and Curatorship</i> , 35(3), 217–220. https://doi.org/10.1080/09647775.2020.1762360

Art Gallery Ontario	Accessibility	Website	<i>Our Commitment to Diversity, Inclusion, Equity & Accessibility</i> . Art Gallery of Ontario. (n.d.). https://ago.ca/our-commitment-diversity-inclusion-equity-accessibility .
Mori Museum	Accessibility	Interview	Kurosawa, A. (2020, November 10). <i>INTERVIEW: Mori Art Museum Director Mami Kataoka Tells How Museums will Change Post COVID-19</i> . JAPAN Forward. https://japan-forward.com/interview-mori-art-museum-director-mami-kataoka-tells-how-museums-will-change-post-covid-19/ .
MMCA Korea	Accessibility	Article	Park, Y. (2020, July 1). <i>[The Arts and COVID-19] Turning adversity into opportunity</i> . The Korea Herald. http://www.koreaherald.com/view.php?uid=20200701000884 .
Zeitz MOCAA	Interactivity / Diversified learnings / Accessibility	Article	Deakin, T. (2021, March 14). <i>How Zeitz Museum of Contemporary Arts Africa pivoted during the global pandemic</i> . MuseumNext. https://www.museumnext.com/article/how-zeitz-museum-of-contemporary-arts-africa-pivoted-during-the-global-pandemic/ .
Louvre Abu Dhabi	Interactivity / Personalization	Article	Gale, C. (2021, February 8). <i>How the Louvre Abu Dhabi Embraced Digital During COVID-19</i> . PCMA. https://www.pcma.org/louvre-abu-dhabi-cl21/ .

VOMA	Digital setting	Article	<p>Nalewicki, J. (2020, September 17). <i>The World's First Entirely Virtual Art Museum Is Open for Visitors</i>. Smithsonian.com.</p> <p>https://www.smithsonianmag.com/travel/worlds-first-entirely-virtual-art-museum-is-open-for-visitors-180975759/</p>
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Appendix B: Case study template

Digital New Museology Framework	
	Edutainment mission
Informational value	<p style="text-align: center;">Website + Social media + documentation</p> <p><u>Diversified learnings</u>: The criteria measured include the availability of resources such as their collections on their websites. On their websites and Instagram platforms, the analysis looks at whether educational offers target diverse audiences and interests</p> <p><u>Accessibility</u>: Measures for both websites and Instagram include whether content is free, whether it is accessible for all potential visitors through the use of audio, subtitles, different languages, etc.; and whether the museums provide information or organize debates and talks about current social justice causes or issues.</p> <p>Additionally, the analysis looks at the documentation to see what museum experts say about their approach towards providing diverse content / their commitment to accessibility.</p>
Entertainment value	<p style="text-align: center;">Website + social media + documentation</p> <p><u>Interactivity</u>: The focus is on incentives for direct involvement of visitors in the consumption or production of content: games, challenges, open questions, quizzes, tutorials, etc. on both the museums' websites and their Instagram platforms.</p> <p><u>Creativity and storytelling</u>: measures include analyzing the use of storytelling narratives and the form of medium they take (illustrations and animations, videos, podcasts, etc.) on both the museums' websites and Instagram platforms.</p> <p>Additionally, the analysis looks at the documentation to examine findings related to what museum experts say about their approach towards storytelling and providing interactive experiences for visitors.</p>

	The Visitor Experience
Personalization	<p style="text-align: center;">Website + Social Media + Documentation</p> <p>Measures include possibilities for customization of profiles and whether there is a choice in navigation, such as multiple visitor trails based on different themes, on their websites and Instagram platforms. The option of diverse inter-connected channels is also observed.</p> <p>Additionally, the documentation is observed to analyze potentially related statements from museum experts on how they offer personalized experiences for their visitors in the digital space.</p>
Socialization	<p style="text-align: center;">Website + Social Media + Documentation</p> <p>The museums' websites are analyzed to examine the presence of communication channels between the visitors and museum staff (ex. live channels, forums and blogs). On Instagram, incentives by museums for creating social media interactions (questions and games) are observed. Other strategies, including live talks and other events, are analyzed for both the websites and Instagram.</p> <p>The documentation is also observed to examine potential statements from the case study museums' experts on how they foster social contact with the audience.</p>
Digital setting	<p style="text-align: center;">Website + Social Media + Documentation</p> <p>On the museums' websites, the use of Virtual Reality (VR) to recreate physical museum settings is examined, which includes virtual tours.</p> <p>On Instagram, alternative mediums to recreate physical attributes of the museum's building space are observed.</p> <p>The documentation is also observed to examine what experts from the case study museums say regarding their use of VR technology or other digital renderings.</p>

Appendix C: Overview of main codes

Theme	Code	Observation
Educational value	Entire collection	Museums' offer of their collections on their websites
	Paid content	Content requiring a fee
	Different themes	Offer of diverse educational content (different themes and different art forms)
	Different languages	Content available in different languages
	Audio content	Educational content in audio format
	Subtitles	Subtitles found in educational video content
	Transcriptions	Transcriptions of educational audio-visual content
	Social justice	Educational content focused on social justice related themes
Entertainment value	Challenges	Museum challenges calling for direct participation and interaction
	Quiz / games	Integration of gamification elements into educational content
	Workshops / Tutorials	Offer of interactive educational workshops and tutorials
	Interactivity - Other	Other interactive elements
	Narrations	Content relayed in narrative storytelling-like format
	Visual storytelling	instances of visual storytelling (animations, etc.)
Personalization	Visitor trails	Offer of different visitor trails allowing for unique journeys
	Profiles	Possibility of creating personal accounts and

	Individual interpretations	Possibility for visitors to produce their own unique interpretations of the content
	Multi-channel	Offer of inter-connected channels between different platforms
Socialization	Comments	Incentives by museums to encourage comments on their platforms
	Talks / Events	Offer of talks and events which allow for direct communication between visitors and artists / museum staff
	Personal connections	Incentives by museums to create personal social connection between visitors and museum professionals
	Forums / Blogs	Offer of forums and blogs on the museums' websites which allow for discussions between visitors and staff and amongst visitors
Digital Setting	VR tours	The use of VR technology to recreate the physical space of the museum
	VR integration – other	Instances of the use of VR technology in other aspects of the museum experiences and connected mediums
	Virtual renderings – other	Other instances of virtual renderings