Article

Perspectives on Amplifying Participation in Digital Culture through Global Digital Citizenship

Ann Borda [1,*] and Jonathan P. Bowen [2,*]

[1] The University of Melbourne, Australia; aborda@unimelb.edu.au

[2] London South Bank University, UK; jonathan.bowen@lsbu.ac.uk

[*] Correspondence: aborda@unimelb.edu.au (A.B.); jonathan.bowen@lsbu.ac.uk (J.B.)

Abstract: In the paper, we explore the notion of global digital citizenship, particularly with respect to museums and cultural heritage organizations. In this perspectives study, we explore current examples of how museums can adapt to the tenets of global digital citizenship necessary to navigate and participate in increasingly interconnected digital worlds and culture, and to collectively address global challenges.

Keywords: digital citizenship; digital culture; digital literacy; digital museums; global citizenship; participatory design

1. Introduction

Our expanding interconnected digital world has the potential for equal and equitable and free access to information; to enable new pathways for knowledge sharing and production; and to connect with people, places, and cultures. Critical capacities required to fulfil this potential, however, rely on competencies and mindful approaches of what can be termed "digital citizenship" [1,2].

"Digital citizenship" and related terms, such as "digital citizen" [2,3,4], have only come into use in recent years. "Digital citizenship" is broadly defined as the ability to participate in society online [5], such as engaging with other users and with digital content in a critical and ethical manner, as well as navigating the online environment safely and responsibly, whilst being aware of one's rights and those of others [6].

Concepts of digital citizenship have been around since the 1990s, although these have been applied initially to only a small proportion of the population. This coincides early in the development of the Internet. for instance, as email and spam increased, the concept of "netiquette" appeared in the public consciousness (see [7], pp.191–193).

Digital literacy is a major cornerstone of digital citizenship. Paul Gilster first popularized the term digital literacy in his book of the same name, published in 1997. He conceived of digital literacy as, simply, "literacy for a digital age" [8] at a time when the World Wide Web was developing [9]. Following Gilster's coining of the phrase, there have been several updated definitions in line with the shifting advancements of all things digital, but a common understanding is that digital literacy is clearly evolving into the "capability to use digital technology and knowing when and how to use it." [10].

Digital literacy entails appropriate uses of digital tools, digital communication, digital identities, digital rights, and considerations of digital safety and security. Digitally literate citizens are more often able to engage on the Internet as part of one or more online communities, seeking and sharing information, self-publishing, and related activities through collective and individual efforts [1,11]. A critical aspect of such digital citizenship practice is the continuous development of norms of responsible and empowered technology use. These norms are encapsulated by Mark Ribble in nine elements [10,12], namely: Digital Access, Digital Commerce, Digital Communication and Collaboration, Digital Etiquette, Digital Fluency, Digital Health and Welfare, Digital Law, Digital Rights and Responsibility, and Digital Security and Privacy.

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The issues concerning digital citizenship have been especially studied with respect to education [13,14] but critically also in the context of social inclusion and the digital divide and responsible action [15]. Being a digital citizen further involves different information literacy skills than traditional media [16] and developing these skills is a lifelong [17] process, particularly as digital technology evolves so rapidly.

The digital transformation of society is impacting our lives in unprecedented ways and have concurrently brought immense changes to the museum sector. Museums and digitization efforts have been facilitating the preservation, dissemination, and production of cultural and educational resources, such as documentation, 3D digitization, digital data processing and storage, and digital reproduction of objects [18].

Museum professionals themselves need appropriate digital skills [19]. 'One by One' is a national research project which aimed to help UK museums better define, improve, measure, and embed the digital skills and literacy of their staff and volunteers. Specifically, phase two of the One by One project [20] found that the museum sector's approaches to understanding and building digital skills and literacies need to be:

- Person-centered, led by individuals' needs rather than technologies or other external drivers;
- Purposeful and values-led, clearly related to organizational missions; and
- Nuanced and contextualized – helping people understand and relate skills to their own practice and setting.

These capacities are essential to navigating the complex online environment; however, more than ever they need to be complemented by the socially responsible attitudes in our interactions with global digital communities and to engage in actions that contribute to overcoming global challenges [21].

Being able to facilitate interconnections between people, cultures and communities is becoming essential worldwide [22]. UNESCO defines this as a new pathway for education, namely "global citizenship" referring to "an education that aims to empower learners of all ages to assume active roles, both locally and globally, in building more peaceful, tolerant, inclusive and secure societies" and entails three functions: cognitive, socio-emotional, and behavioral [23].

Watanabe-Crockett [24] describes a global digital citizen as a responsible, ethical citizen, leveraging technology to foster community on a global scale, participating and contributing in the blended physical and digital worlds, and how we can grow citizens in this new reality. According to Watanabe-Crockett, global digital citizenship embodies five tenets: personal responsibility, global citizenship, digital citizenship, altruistic service, and environmental stewardship.

Such tenets of global digital citizenship are gaining traction in the cultural sector in the last couple of years and can manifest themselves in a number of contexts supported through digital transformation, for example, citizen journalism [25], "citizen science" [1,26], climate action [27], as well as "the balance of "digitality" and reality which citizens in a technology-driven society must increasingly negotiate [28,29]. However, these tenets, taken together and applied to digital culture [30,31], are not yet well described, and not least the emerging trends shaping the notion of both global digital citizenship and digital culture require further consideration. The aim of this perspectives paper is to highlight practices and possibilities for museums and cultural heritage organizations to better support and engage their audiences across thematic tenets of global digital citizenship.

2. Research Method

This qualitative research study adopts a perspectives approach [32] in describing the intersectional landscape of global digital citizenship and digital culture, using a thematic framing based on key defining elements of digital citizenship [2,3,12] and global digital citizenship [23,24].

A clustering of thematic elements was used to bring together examples of historical research, current practice, and emerging trends, broadly defined as follows: open foundations connecting local to global communities, knowledge production and global awareness, and equitable and amplified participation in digital culture through the lens of global digital citizenship. Integral to the

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methodological approach, the authors particularly focused on situating global digital citizenship in digital culture research (both historical and recent) where relevant [33]. This is with the intention to highlight evidence and examples of intersectionality and practice [15.34].

3. Open Foundations

Open foundations supporting global digital citizenship were altruistically led by Tim Berners-Lee ([9], p. 59) in the establishment of the Virtual Library in the early 1990s with his colleague Arthur Secret. The Virtual Library was intended to help with the navigation of the web before search engines became well-established on the Internet. This included early information on and links to online museum resources in the Virtual Library museums pages (VLmp), an international; collaborative volunteer effort [35,36,37].

The online encyclopedia Wikipedia (https://www.wikipedia.org) is another notable example of the altruism of a global digital citizen, Jimmy Wales [38], formerly a financial trader. Wikipedia is now an authoritative place for global digital citizens to create and edit information on museums online [39], replacing the likes of VLmp and the Virtual Library, as a global-scale multi-language collaboration. Individual museums have attempted to create their own wikis, allowing the public to add information themselves (for example, about objects), but it is difficult for a single organization to create a sustained critical mass of online contributors [40,42]. This contrasts with the situation in the case of Wikipedia, which has many editors with varied interests. Even though Wikipedia is not universally accessible in all countries, it can form the basis for cross-border collaboration by digital citizens, with the simple altruistic aim of making information more widely available. See for example, a collaboration to provide information on the arts in Chengdu, especially its biennale [41].

Good global digital citizenship is essential in building virtual communities, both in general [43], and in the context of museums and their audiences [44]. It can enable people with different skill sets to come together with a common goal, often on a volunteer basis. A common purpose is important, and this can be studied in the social science Community of Practice (CoP) framework [45,46], which is useful in modeling how communities in a specific area become established, develop, and eventually transmogrify or cease depending on their success.

Digital literacy underpins the skills which support both establishing online communities and navigating community platforms and their resources. The Community Virtual Library represents a proactive community example which established a Digital Citizenship Museum [47] with the expressed mission to ensure citizens are digitally literate through education, raising global awareness, and building a community around the challenges and solutions of digital literacy (see Figure 1).

Figure 1. Community Virtual Library Digital Citizenship Museum, CC License, 2018, https://communityvirtuallibrary.org/digital-citizenship-museum/.

Closely tied to these developments is the open access movement – starting with open source software developments of the 1990s to the present day – now having a profound impact on how we can create opportunities for participation, share knowledge, and create new tools and knowledge [48,49,50].

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This first wave of museums with online resources in the 1990s, such as the Science Museum in London [51,52], was intrinsically associated with advances in web technologies, open source and open access, focusing on information systems (e.g., published databases) and hyperlinking content, comparable to the exploration of machine learning by museums of the present day [53]. A seminal book of the period in the 1990s, *The Wired Museum* [54], was already prescient in how technology might enable museums to accomplish interactions with content and audience engagement. But it also highlighted potential issues relevant today, such as content overload and lack of quality control.

OpenGlam (https://openglam.org) is a key example of an initiative supporting the concepts and values of the open movement to the GLAM sector (Galleries, Libraries, Archives, and Museums). OpenGlam established in 2010 and supported by Creative Commons provides open access to digital heritage and cultural collections, resources, and tools. Informing the OpenGlam project is the Europeana platform (https://www.europeana.eu) launched in 2008 providing digital access to millions of cultural heritage items from several thousand institutions across Europe. At the core of the platform are open standards and a data model enabling open access, tools, and services.

4. Knowledge Production and Global Awareness

The rise of global digital citizenship has timely significance for museums and their positioning as participatory knowledge organizations. Leading cultural organizations, such as the American Alliance of Museums and the UK Museums Association, engage in high-profile advocacy and campaign programs, encompassing larger social issues impacting digital citizenry across racism, homelessness, and migration, among other challenges:

"Museums help us negotiate the complex world around us; they are safe and trusted spaces for exploring challenging and difficult ideas" ([55], p. 4).

This repositioning of museums in embracing new types of participation increases the opportunities for their communities to share, be challenged, and evolve with them. In tandem with grass-roots media, open data and ubiquitous technologies, citizen-led participation has also signaled a significant shift in the way that collecting, disseminating, and sharing of information is undertaken by digital citizens.

Museums and cultural organizations have, in the last decade or more, invited audiences to help annotate collections and contribute to collections knowledge through citizen science – an approach by which the volunteer public and researchers can collaborate on scientific studies [1,56]. Engaging a distributed public using digital platforms and data tools is often undertaken through crowdsourcing – a form of digitally enabled citizen science [57,58]. Several platforms have been established within the last twenty years supporting online citizen science projects, such as the Zooniverse (http://www.zooniverse.org). Crowdsourced heritage and citizen science approaches have flourished in these environments for several decades in varying forms [1,11,56,59].

Like Europeana, the Smithsonian Open Access portal (Smithsonian n.d.) is an example of an initiative that provides a trusted and freely accessible resource supporting digital citizen enquiry and self-directed learning. Thus far, it offers more than 3 million images from the Smithsonian collections across the Smithsonian's 19 museums, nine research centers, libraries, archives, and the National Zoo.

Digital technology is helping to contribute to a rise in more open, participatory, and alternative forms of democracy [15]. Civic platforms of digital tools supporting online consultations or by improving and simplifying the way citizens experience government services online, such as vTaiwan (https://info.vtaiwan.tw) – a public online-offline consultation process platform in Taiwan and Decide Madrid (https://decide.madrid.es) – the city of Madrid's public engagement platform [60]. Similarly, smart digital culture is strongly associated with the identity of place and communities through enabling technologies, knowledge, and participation. Context-aware services and applications based on forms of museum digital data and user-defined interactions are indicative of the potential integration of cultural heritage with smart cities [61,62].

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Citizen journalism can be considered as part of this participatory evolution and as a digital form of news gathering and reporting by the public outside traditional structures. The efforts of Ingrid Beazley at Dulwich Picture Gallery in south London [63] were central to the establishment of a local online magazine blog, *Dulwich OnView* (https://dulwichonview.org.uk), which has continued to include regular articles of local interest.

Through citizen journalism, the global digital citizen can also gain an empowered position during an event, media, or history [64]. The Autry Museum of the American West, based in Los Angeles, California, created the Autry Citizen Journalism Project zine to enable this empowerment by recognizing the role of citizen journalism in local community storytelling and issue resolution [65]. This approach further provided a means to attract a greater diversity of communities.

Digital citizenship can involve campaigning, for those that are experts in the use of social media. One example involves Bletchley Park, formerly the center for World War II codebreaking operations by Alan Turing et al. [66], and now a heritage site and museum. Social media, especially Twitter was used to help raise awareness of the site and the difficulties in fundraising [67].

Social media has increasingly provided new routes for scaling social movements in which global digital citizens are participating and leading. Movements such as Black Lives Matter [68] and *#FridaysforFuture* of the youth climate movement [69] are examples of public movements of protest and activism reaching global audiences and cultural organizations through social media platforms. The *#MeToo* movement has similarly affected museums [70,71], requiring awareness of political and social sensitivity if controversy is to be avoided. While this was initially a Western movement, it has subsequently become increasingly international, including in China for example [72].

Further to this, there is a view that museums need to move from being suppliers of information to facilitators, providing tools for visitors not only to explore their own ideas and reach their own conclusions but to be a mediator of information and knowledge for a range of users, facilitating the membership and trusted participation of individuals within society [73,74,75,76].

Market research suggests that there are elevated trust perceptions by the public in museums and cultural organizations [77,78]. One study shows that the rate at which museums and exhibit-based cultural organizations are seen as credible sources of information increased by 9.5% as of the end of 2022 when compared to before the COVID-19 pandemic [78].

This intertwined relationship has been particularly highlighted in the context of "fake news" which came into prominence following the 2016 US election. The viral propagation of misinformation online and in social media (e.g., Twitter and Facebook) resulted in museums, galleries, and libraries in the US, UK, and worldwide responding by holding a series of *#DayofFacts* campaigns [79] on 17 February 2017, targeting a range of myths about science, history, and climate change [80,81]. See the Facts Matter initiative at Chicago's Field Museum in Figure 2.

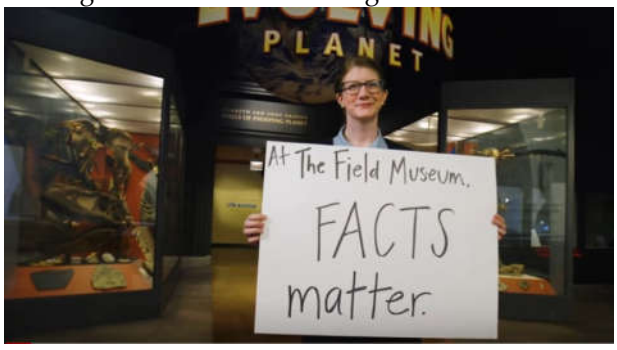

Figure 2. Facts Matter at the Field Museum. YouTube, April 2017. https://www.youtube.com/watch?v=jdMfPn6bpi0.

The international social media campaign reinforced the positioning of cultural organizations as trusted public sources of information and knowledge [77]. Government agencies in the US similarly responded through their own media channels to promote evidence-based news. The staff of the scientific agency National Oceanic and Atmospheric Administration (NOAA) in the US, for example,

created an alternative Twitter account [82] – the "unofficial persistence team of the NOAA" to publish climate change and weather data and related news at no taxpayers' expense.

There are continuing efforts in the cultural and government sectors to combat misinformed 'facts' and stories through exhibitions and policy-facing strategies [83], such as museums and climate justice programs [27,80]. There are also specific precedents, for example, regarding climate activations. The first museum in the USA dedicated to climate change was established in 2015 – the Climate Museum in New York (https://climatemuseum.org), and the activist museum organization Climate Museum UK (https://climatemuseumuk.org) which has no venue but works across distributed teams, collections, and sites through activations and events. With global convergences, such as youth climate change activist Greta Thunberg amplifying the global scale of the threat of climate change, there is a critical need for digital inclusion within the cultural sector and acknowledgement of the different generations coming together to tackle these global challenges [69].

5. Equity in Participation

Notwithstanding such differences in capacity, museums and cultural organizations share common capabilities in enabling participation at different audience levels. The Participatory Museum [76] outlines approaches designed to aid museums in becoming more open to participation, involving users to inform, co-design programs and exhibitions, and innovate projects, as well as providing platforms for users to construct their own meanings [84,85]. In the concept of the social museum, Visser recognizes new models of digital socialization between the museum and the public [86], with ways to learn with respect to broadening digital citizen engagement.

Crucially, global digital citizenship encourages what has elsewhere been called social inclusion [87]. A key challenge in participatory practice in museums is the audiences who participate may be a similar demographic or even less diverse than those who visit [88]. Social movements can be gauges of audience concern and activism, representing diverse social justice forms of participation [68,69,70]. Evaluation and other measures also need to be considered to understand the reach of museums and in engaging a wider range of digital citizens, including culturally and age-diverse audiences [6].

Janes [89] argues in *The Mindful Museum* that the convergence of global issues ranging from climate change to the erosion of cultural diversity has created a watershed moment for museums to go beyond contemporary museum business models based on consumption, entertainment, and ancillary education. Museums need to enhance greater organizational awareness of societal issues and who participates.

The changing digital landscape for creative and cultural expressions is proliferating new opportunities for the production and sharing of content [50,90]. At the same time, however, it is arguably widening the gap of cultural and creative participation along the same lines as the digital divide. This is due to issues such as lack of access to digital platforms, lack of online neutrality and inequalities of discoverability, e.g., in terms of how content from various places is made visible across digital platforms [91].

The COVID-19 pandemic has particularly highlighted a digital divide and the critical need for digital inclusion within the cultural sector. According to UNESCO, institutions that had 'invested heavily' in digital activities prior to the pandemic, providing a vital resource to those who could access these [92,93]. In a related Australian study of 73 cultural institutions during COVID-19, it was found that cultural sector experiences of digital exclusion are different in terms of capacity in which national and state institutions had far greater capacity than smaller public, university, and artist-run institutions to deliver digital activities [94].

For millions of citizens globally, especially in developing countries, access to culture through digital capabilities remains out of reach. Almost half of the world's population does not have access to the Internet and there is a persistent gender gap in terms of access to digital technologies with 327 million fewer women than men able to access the mobile Internet [95]. The prospect for a wider public to participate as global digital citizens can also amplify the challenges of digital access and the issues of equitable distribution of technology and resources. The OECD (Organisation for Economic Co-

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operation and Development) in 2018 [95] has highlighted the importance of ICTs for the continued functioning of societies but has strongly brought to the fore the startling digital inequalities between and within countries, especially for Indigenous communities. Advancing the decolonization of digital spaces will require a thoughtful and significant shift in how we approach efforts to democratize and decolonize digital spaces [96,97].

Indigenous digital equity is recognized as integral to the tenets of global digital citizenship. The First Nations Technology Council in Canada defines digital equity in this context as "a state in which every Indigenous person, community and Nation is fully equipped to access and effectively use technology to contribute, thrive, and succeed in today's digital society while preserving self-determination" (https://technologycouncil.ca/digital-equity). In Australia, the Commonwealth Government has drafted an *Indigenous Digital Inclusion Plan – discussion paper* [99], with a focus on three key elements of digital inclusion: access, affordability, and digital ability. Dirksen [96] highlights that global citizenship in a digital context, like all forms of citizenship, is only as strong as the rights, protections, and agency contained within it that are accessible to all its people.

Museums are taking on this critical gap to try to make their museums reflect the diversity and the voices of the people within their collections and around them. The America Alliance of Museums in the USA drafted a report in 2022 [98] setting the groundwork for museum practice across Diversity, Equity, Accessibility, Inclusion (DEAI) in recognition that there is a need for better organizational integration of these principles, such as adopting equity in a museum's mission.

6. Amplifying the Tenets of Global Digital Citizenship through Digital Culture

To understand digital human cultures among the plethora of digital information and platforms, there is a growing spotlight on "thick data"; that is the human insights missing from big data [100]. This data is implicit, often invisible, and gathered through human observations and narratives. Museums and cultural organizations are well-positioned to lead in expressing digital culture through data, digital innovation, and participation [73,76,101].

An extension to digital literacy is the ability of the global digital citizen to navigate the field of emerging technologies such as AI and machine learning, and to comprehend their social implications, for instance [102]. Museums have been piloting AI and natural language processing-based demonstrators for over a decade, for example, exploring the use of chatbots and recommender systems [53,61,103] (see Figure 3). OpenAI's ChatGPT, the latest chatbot AI program as of 2023, interacts with users via text, answering questions and responding to prompts drawing on published Internet data which includes museum data generated by museum professionals, researchers, and members of the public [104].

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Figure 3. Screenshot from the House Museum (Case Museo) chatbot game [53].

The implications for museums in this space is yet to be understood. For instance, the Misalignment Museum in San Francisco, USA (https://www.misalignmentmuseum.com) is a temporary exhibition and memorial to an imagined future in which artificial general intelligence has eradicated most of humanity. On the other end of the spectrum, AI4LAM (https://sites.google.com/view/ai4lam) is an example of an international, participatory community focused on advancing the use of AI in, for and by libraries, archives and museums (LAM) and providing public resources, such as an AI registry.

As digital worlds continue to evolve and transform society, as well as the museum sector, it is imperative that ethical considerations are at the forefront of their construction. This is exemplified by the worldwide adoption of the *UNESCO Recommendation on the Ethics of Artificial Intelligence* [105], which raises critical questions about the impact of this rapidly advancing technology on individuals and societies.

The "metaverse", a network-based immersive virtual world involving VR, AR, etc., involves a developing set of technologies [106]. It has been predicted that 700 million people will inhabit the metaverse by 2030 [107]. These digital worlds offer infinite possibilities for human interactions and social transformations. Metaverse worlds are already being adopted by First Nations (indigenous peoples) – incorporating First Nations' narratives, particularly Kinship, as a means by which to welcome and support many traditionally underrepresented groups in society into and in the metaverse [108]. One example is the work of the indigenous artist and performer, Lawrence Paul Yuxweluptun, who collaborated on a metaverse project with Paisley Smith, a filmmaker and (VR) director who, like Yuxweluptun, comes from the unceded territories of the Musqueam, Squamish, and Tsleil-Waututh First Nations in British Columbia, Canada. Together in 2019, they created Unceded Territories, an immersive and provocative VR experience engaging online viewers in an interactive landscape grappling with colonialism, climate change and indigenous civil rights (https://www.paisleysmith.com/unceded-territories-vr).

In this way, digital worlds can express both inherent threats, as well as embody them. Without a deep understanding of the cultures and dynamics at play, there are potential ethical risks [109]. A similar scale and sense of urgency relate to ethical action around the physical planetary world,

namely tackling climate change as a critical global challenge. Museums and cultural organizations are recognizing that they have a crucial role to play in shaping and supporting society's response to the crisis [110]. In the prelude to COP26, museums and cultural organizations increasingly became involved in climate action through supported activism and audience participation through events and exhibitions and digital culture [27].

Museums and cultural organizations are at a particularly significant juncture to re-imagine themselves to fill in these gaps as potential stewards of both the future and the past in which global digital citizens can participate and equally help fill those gaps [27,101]. In the words of Janes [111], "Stewardship of the highest order will also be required, demanding active engagement and shared authority with those individuals and communities that museums purport to serve".

7. Conclusion

Museums and cultural organizations, as trusted independent institutions, have the potential to be relevant, socially engaged spaces for global digital citizens, learning from their audiences as part of the process [1,112]. However, they also need to be transparent in the process to support an environment of mutual trust, enabling perspectives and learnings to be shared and translatable.

What is crucial is the opportunity for museums and cultural heritage organizations now to offer new ways of understanding oneself in terms of global awareness and our place in the world; to offer new means of expressing individual and collective identities, along with their global projections; and to ensure new modes of equitable participation. This process might entail both a greater breadth of participation and richer opportunities for global digital citizenry to take place.

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