

Virtual museums and Google arts & culture: Alternatives to the face-to-face visit to experience art

Ana Verde ^{1,3}, Jose Manuel Valero²

¹ International University of la Rioja, Facultad de Educación, Av. de la Paz, 137, 26006 Logroño, La Rioja. [0000-0003-0339-0510] ana.verde@unir.net

² Camilo José Cela University, Educación Faculty, Urb. Villafranca del Castillo, Calle Castillo de Alarcón, 49, 28692 Villanueva de la Cañada, Madrid. [0000-0001-8670-8154]

³ King Rey Juan Carlos University, Department of Education Sciences, Language, Culture and the Arts. Calle Tulipán, s/n, 28933 Móstoles, Madrid, Spain.

Abstract. The didactic of art has always been closely linked to experimentation and a visual approach to works of art. So much so that one of the most outstanding resources in the teaching and learning of art is visits to Museums. From the point of view of artistic teaching, one of the most scheduled complimentary activities throughout the course by Educational Centres is precisely the use of museum resources that provide an enriching and unique opportunities for students. Museums provide an outstanding value in teaching that we can establish in three specific objectives: learn from guided discovery, directly observe the work of art, and sensitize students in the Museum. These reasons motivate teachers to include going to a Museum in their programming. However, because of the situation caused by the state of alarm caused by covid-19, Museums have been forced to adapt to the new capacity requirements and in many cases cease their usual activity. The International Council of Museums developed new approaches to offer its services and activities to visitors. This article studies the written literature on the subject and presents alternatives to the face-to-face visit with examples of good practices through the visit to Virtual Museums both nationally and internationally for different educational stages: primary, secondary, high school, and university.

Keywords: Education in Art Museums, Covid19, migrations, ICT, Gamification, digital art.

1 Introduction and justification

For the teaching of art to be truly meaningful and to capture the attention of the students, it is necessary to implement strategies based on experimentation and a visual approach to works of art in the teaching methodology. For this reason, the museum is one of the essential resources and a must-see: students can directly appreciate the works of art and directly enjoy an enriching opportunity for both the student and the teacher. From the point of view of History, we also need museums, it is imperative to be aware that the world changes very quickly, even generating certain instability and vertigo. Museums are support points where we can understand who we are, where we come from, what our culture is, in short, our history. Our age is characterized by extreme mass communication, and although interconnection could be positive, as Turkle indicates, this fact makes it difficult to find a space and time that allow reflection without noise or distractions. (Turkle, 2011; Perry et.al, 2017, Sylaiou et.al 2017). We recognize the importance of the museum and not simply as a place for the exhibition or display of objects, works of art, research, and conservation.

According to EGMUS data, in Europe, there are around more than 20,000 medium and large-scale museums of very diverse themes: museums of art, history, archeology, science, technology,

¹ All authors have used the western naming convention, with given names preceding surnames.

etc. (Pescarin, 2014; Barbieri et.al, 2017). The museum scene is changing rapidly, this change has been accelerated by the pandemic. As a result of the situation caused by the state of alarm caused by COVID-19, the Museums were forced to adapt to the new capacity requirements and in many cases cease their usual activity. The International Council of Museums developed new protocols in order not to harm the museum sector and to be able to offer its services and activities to visitors. Museums are adapting, but in what way? Let us bear in mind that the tourism crisis has also affected exhibitions and museums.

1.1 Research objectives

To carry out the research, the following are proposed:

- Review the literature on the use of virtual platforms applied to the teaching of art for students between the ages of 4 and 24.
- Investigate and analyze which platforms or museums offer an interactive experience with “virtual” visitors through their web pages in 2020.
- Select and those virtual platforms and museums that stand out for their accessibility, availability, social media impact, online educational activities, quality of materials, and resources.
- Give guidelines for the correct selection of these resources in the educational field.

2 Virtual platforms, galleries, and museums

Our society, increasingly digitized, has shown from the crisis caused by covid-19 that we must train in new technologies. Without a doubt, in the educational field, digital literacy is necessary and the fight to bridge the digital divide. Museums are aware of this process and therefore must take care not only of their physical but also virtual spaces (Katz & Harpen, 2015; Sundars et al., 2015). Both curators and developers of the website of Museum must be aware of the limitation that a screen can pose. In the access device, we do not have the context that face-to-face museums can offer, therefore, virtual spaces must-have resources that provide answers to these common questions that a visitor to the virtual era might ask when viewing a work of art:

- What is it?
- What does it represent?
- What is its origin?
- What is your time?
- Did it have a specific function?
- What is your material?
- How was it used?

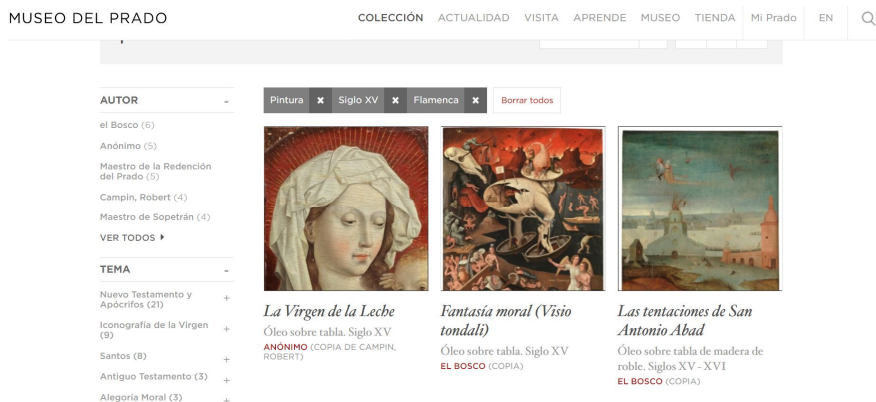
Next, we present the platforms, museums, and art galleries that, according to the parameters of accessibility, impact, quality of materials, and resources have been the most outstanding. All of them present a variety of graphic resources, videos, texts, etc. Some stand out for their interactivity with the assistant.

2.1 Virtual museums and national and international galleries

Prado Museum

The Prado Museum is one of the most important art galleries in the world, in 2019 it celebrated its second centenary. It has a collection of more than 16,000 works. Access is very simple through its website, entering the "Collection" drop-down, thus being able to access the selected work and obtain very complete and careful information on the piece, period, technique, etc. (Buendía, 1994) Although the quality of the images in its virtual catalogue is excellent, the resource is not dynamic or interactive: it does not allow a real tour of the rooms. You can access the artistic work and its complete information as indicated and use a powerful zoom that makes you feel millimetres away from the piece. For all the educational offers it offers, as well as specialized and educational videos of all times, it is positioned as one of the most important Museums to use in our classes from nursery to primary.

Fig. 1. Prado Museum

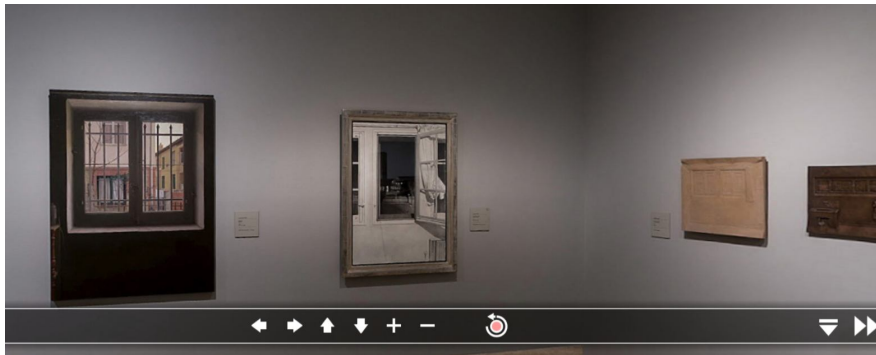


Source: Prado Museum, Madrid, Spain. <https://www.museodelprado.es/coleccion/obras-de-arte>

Thyssen-Bornemisza Museum, Madrid

The museum offers a very dynamic virtual tour with detail. It stands out for its rich didactic materials for all ages. Besides, the guarantor of the latest technologies, the physical space offers the visitor a virtual reality tour using a mobile phone and Virtual Reality (VR) glasses. (LeLoup & Ponterio, 2004; Orea-Giner & Vacas-Guerrero, 2020).

Fig. 2. Thyssen-Bornemisza Museum, Madrid.



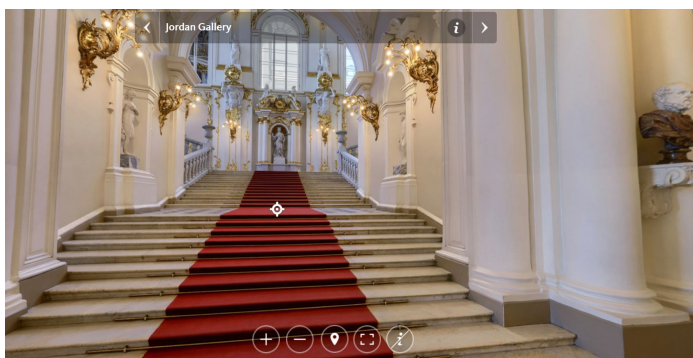
Source: Thyssen-Bornemisza Museum, Madrid. <https://www.museothyssen.org/>

Hermitage Museum

The Hermitage Museum has several more than three million works, being the most relevant Russian museum and at the top of the international ranking for its large collection of Greek and Roman pieces

The main collection of the museum is housed in the so-called Main Complex, consisting of five interconnected buildings: The Winter Palace, the Little Hermitage, the New Hermitage, the Great Hermitage, and the Hermitage Theatre. Access is very simple through its website; we can make a complete and immersive visit thanks to its 360° camera that allows you to walk through all the rooms of its six buildings. In addition to Russian art, The Hermitage also houses a magnificent collection of Spanish art, with works by Velázquez, Murillo, Goya, and El Greco. There is also a spectacular collection of Flemish and Dutch art with works by Van Dyck. (Eisler & Èrmitazh, 1990).

Fig. 3. Hermitage Museum



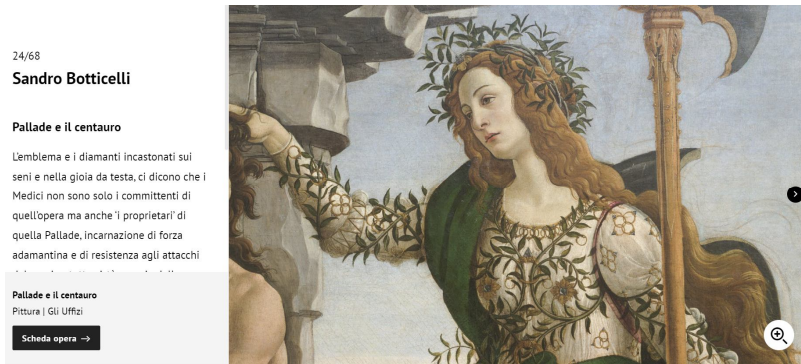
Source: Hermitage Museum.

https://www.hermitagemuseum.org/wps/portal/hermitage/panorama/virtual_visit/panoramas-m-1/?lng=

The Gallery degli Uffizi

The museum's website is just great and as good as the museum itself. The Uffizi Gallery, located in Florence, houses the great collection of works of art acquired by the Medici family until the 18th century.

Fig. 4. *The Gallery degli Uffizi, in Florence*



Source: The Gallery degli Uffizi, in Florence. <https://www.uffizi.it/mostre-virtuali>

Some of the most relevant works are *The Birth of Venus* by Sandro Botticelli, *The Annunciation* by Leonardo da Vinci, and *The Venus of Urbino* by Titian. The museum's website offers the possibility of visiting the Gallery from home and calmly admiring each of the rooms and the works of art located in them through the virtual visit (Fossi, 2001; Parigi, 2013).

The Louvre Museum

The Louvre Museum in Paris is known for having many works of art that represent different eras of art. There are in it a large number of works belonging to the historical period of impressionism, decorative art, archaeology, etc. but, probably without a doubt, the *Mona Lisa* or *Gioconda* by Leonardo da Vinci is the culmination of this museum. The unique smile of this painting has been able to captivate all the visitors and spectators of the painting who have come from all over the world to admire it since its existence. To continue enjoying the museum, 3 virtual tours are available through the museum: *Egyptian Antiquities*, *Remains of the Louvre moat*, and *the Apollo Gallery*. Through these 3 tours, you can visit the museum and walk quietly among works of art from our homes without being disturbed. To enjoy this museum, it is necessary to have Flash installed on the device. (Evrard et al. 2018).

Fig. 5. *The Louvre Museum*



Source: The Louvre *Museum in Paris*. <https://www.louvre.fr/visites-en-ligne>

Vatican Museums

The Vatican Museums have a large collection of church works on display. The collection is made up of a set of buildings that correspond to all types of buildings such as museums of different themes, museums, exhibition galleries, large gardens as well as the buildings of the pontificate that are added to the Vatican Library. Claridge et. al (2010). They collect part of the best works ever created in the Renaissance and the contribution of this virtual tour is sure to be a beautiful experience for students. The 360° visit is highly recommended.

Fig. 6. *Vatican Museums, Vatican*



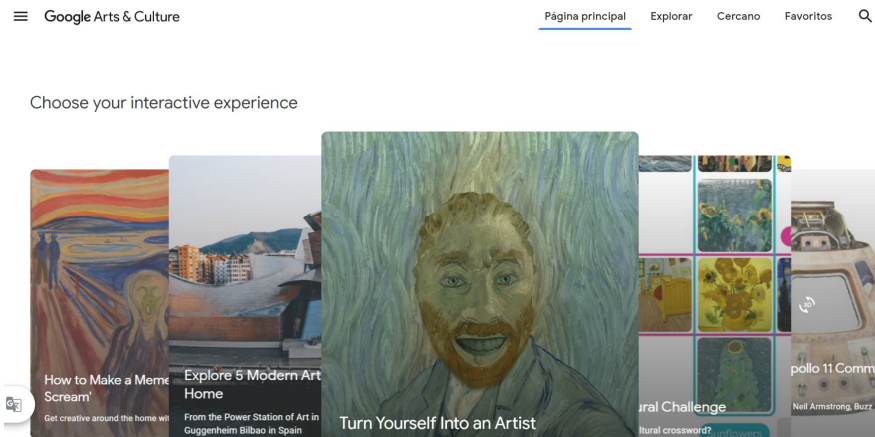
Source: Vatican Museums. http://www.vatican.va/various/cappelle/index_sistina_it.htm

2.2 Virtual platforms

Google Arts & Culture

Google Arts & Culture is a non-profit initiative that began in February 2011. It has the contribution of foundations, organizations, cultural associations, and artists from all over the world. The main objective of Google Arts & Culture is to bring art and culture to any part of the world so that it is achievable for all people. (Pesce et al., 2019)

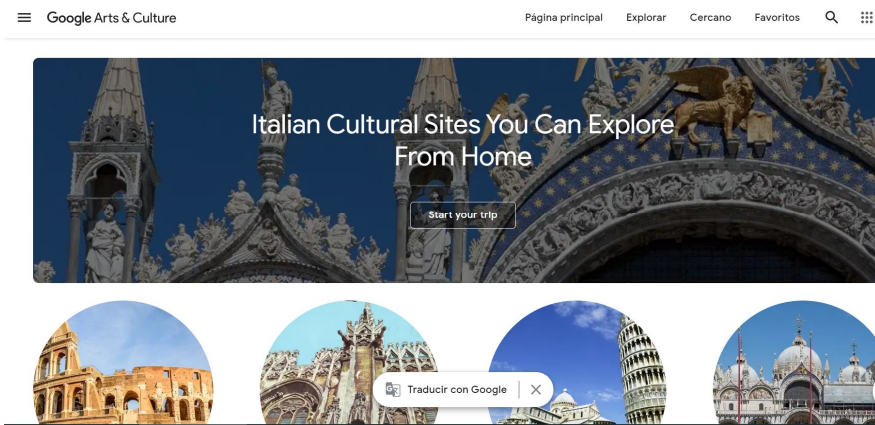
Fig. 7. Google Arts & Culture Home Page



Source: Google Arts & Culture. <https://artsandculture.google.com/>

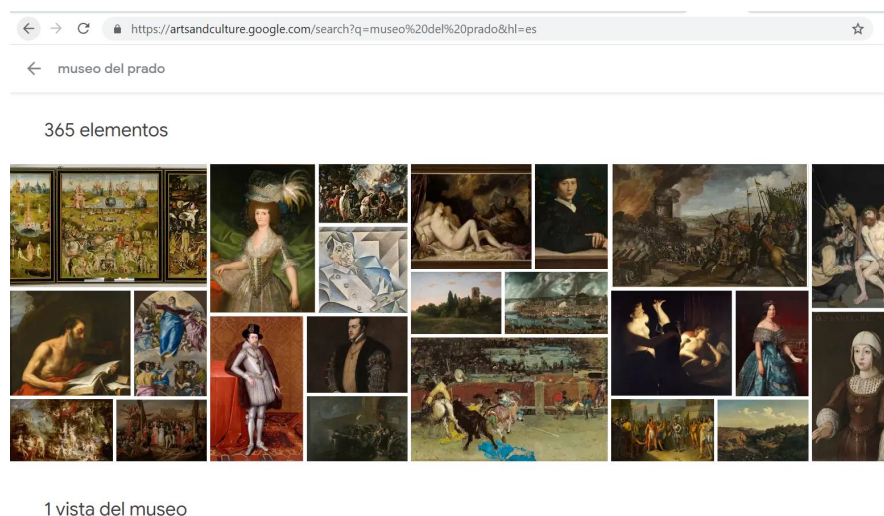
It presents images in high resolution, allowing you to take a virtual tour of galleries and museums, the space uses the same code as Google Street View.

Fig. 8. Thematic tour



Source: Google Arts & Culture. <https://artsandculture.google.com/>

The virtual space allows you to search on any part of the world and its culture. Without a doubt, it is an essential resource to stimulate the student's curiosity and bring any corner of the planet to the classroom. Another interesting feature is the "Art Camera" function with which you can access the finest details.

Fig. 9. Main museums

Source: Google Arts & Culture. <https://artsandculture.google.com/>

Google Arts & Culture also has the collaboration of the main art galleries and museums in the world, specifically more than 1,200 museums and art galleries from more than 70 countries.

3 Conclusion

Times are changing and this is how Museums and Art Galleries are continually renewing themselves. This research opens a world of possibilities for the teaching of art in the classroom. From the declaration of a state of alarm and the obligation to stay at home due to the risk of contagion of covid-19, we have been able to be aware of how useful online artistic resources can be for teaching.

Once we overcome the pandemic, these tools that have been so valuable during confinement will continue to be at our disposal, allowing us to access Museums or artistic works from any part of the world that would otherwise be impossible in a classroom. The open access to culture that these museums and galleries offer us does not detract from the number of visitors they may receive, on the contrary, it is direct advertising and an incentive for visitors to want to enjoy and experience the Museum live. After studying and analyzing the virtual platforms, museums, and galleries available to date, we have made a meticulous selection of those that stand out for their accessibility, impact, quality of materials, and resources.

This analysis allows us to give some keys that allow the teacher a correct selection of the resource. Let us remember that it will always be necessary to attend to its adequacy for educational purposes, that is, it is essential to adapt the information to the educational level. It will be different to schedule a session for students between 3 years to 20.

The most complete virtual museums and platforms comply with the following elements:

- Provides complimentary visual information to the artistic work, offering visitors details about the objects exhibited in the museum, concerning their context and relationships. Additional information is available to visitors, for example: how was it done? when? Where?
- They include additional resources such as visual constructions, images of their original location, etc.
- It has a narrative but a visual character with details, using interaction to allow choosing and focusing on a detail or a reconstruction of physical objects.

The use of virtual environments in the classroom allows innovative didactics of art since it facilitates new possibilities for teaching, as well as for learning. Although it indeed supposes a loss of the sensory experience, these allow overcoming the geographical barriers due to its accessibility through the network without economic or time expense that implies the movement to the location of the same. Since the pandemic, we have valued more if this possibility fits.

The Museum of the 21st century represents a paradigm shift: The Museum is no longer only space for observation and contemplation, but they are living spaces that offer valuable educational resources, increasing motivation, enriching the curricular proposal, and optimizing work as teachers.

References

- ACASO, M., Y MEGÍAS, C. (2017). *Art Thinking. Cómo el arte puede transformar la educación*. Barcelona: Paidós Educación.
- BARBIERI, L., BRUNO, F., & MUZZUPAPPA, M. (2017). Virtual museum system evaluation through user studies. *Journal of Cultural Heritage*, 26, 101-108.
- BARCELÓ, J., FORTE, M., SANDERS, D. (2000). *Virtual Reality in Archaeology*. Oxford: British Archaeological reports.
- BUENDÍA, J. R. Museo Nacional de Pintura y Escultura (Madrid). (1994). *Paintings of the Prado*. A Bulfinch Press Book, Little Brown.
- CANDEL-HERNÁNDEZ, M. (2015). El museo virtual como recurso didáctico para fomentar la creatividad en Educación Plástica y Visual de 1º de Educación Secundaria Obligatoria (Master's thesis).
- CANO, F. J. C. (2012). Espacios expositivos virtuales: Proyecto UMUSEO, una nueva opción para la difusión artística. *Virtual Archaeology Review*, 3(7), 44-49.
- CARROZZINO, M., BERGAMASCO, M. (2010) Beyond virtual museums: experiencing immersive virtual reality in real museums, *J. Cult. Herit.* 11 (4) 452-458.[8] <https://doi.org/10.1016/j.culher.2017.02.005>.
- CLARIDGE, A., TOMS, J., & CUBBERLEY, T. (2010). *Rome: an Oxford archaeological guide*. Oxford University Press.
- COMBARIZA, M., LÓPEZ, W., & CASTELL, E. (2014). Museos y museologías en Colombia. Retos y perspectivas. *Cuadernos de Museología*.
- DEL RÍO CASTRO, J. N. (2012). Museos de arte en la red. *Revista Telos. Cuadernos de Comunicación e Innovación*, (90), 61-70.
- DELGADO ANÉS, L., & ROMERO PELLITERO, P. (2017). La arqueología virtual, generadora de recursos para la comunicación y participación.
- DELGADO PACHECO, S. (2020). Los retos en investigación, comunicación y educación de los museos de Lima en el marco de la COVID-19. Una discusión sobre los desafíos del futuro a partir de su situación actual y de las experiencias del MALI y el MUCEN. *Desde el Sur*, 12(1), 285-306.
- DESVALLÉES, A., MAIRESSE, F. (2010). *Key Concepts of Museology*. Paris: Armand Colin.
- DOMÍNGUEZ, P. Á. (2013). Educar en emociones y transmitir valores éticos: un desafío para los Museos de Pedagogía, Enseñanza y Educación. *Educació i Història: revista d'història de l'educació*, (22), 93-116.
- EISLER, C. T., & ÈRMITAZH, G. (1990). *Paintings in the Hermitage*. Stewart, Tabori & Chang.
- ELISONDO, R., & MELGAR, M. F. (2015). Museos y la Internet: contextos para la innovación. *Innovación educativa* (México, DF), 15(68), 17-32.
- EVARD, Y., & KREBS, A. (2018). The authenticity of the museum experience in the digital age: the case of the Louvre. *Journal of Cultural Economics*, 42(3), 353-363.
- FERRERAS LISTÁN, M. (2014). La Educación Patrimonial en los museos. *Análisis de materiales didácticos*. CLIO. History and History teaching, 40.
- FOSSI, G. (2001). *Galleria degli Uffizi: arte, storia, collezioni*. Giunti.
- FORTE, M., SILIOTTI, A. (1997). *Virtual Archaeology: great discoveries brought to life through virtual reality*. London: Thames & Hudson.
- HERNÁNDEZ, F. (2003). *Educación y cultura visual*. Barcelona: Octaedro.
- HUERTA, R., & DOMÍNGUEZ RUIZ, R. (2019). La educación artística de la era digital: investigar en escenarios tecnológicos. *EARI*.

- IBAÑEZ ETXEBERRÍA, A., RIVERO GRACIA, M. P., & FONTAL MERILLAS, O. (2018). Educación Patrimonial y TIC en España: Marco normativo, variables estructurantes y programas referentes (No. ART-2018-94227).
- KATZ, J. E., & HALPERN, D. (2015). Can virtual museums motivate students? Toward a constructivist learning approach. *Journal of Science Education and Technology*, 24(6), 776-788.
- KERR-LAWSON, E. (Ed.). (1896). *A catalogue of the paintings in the Museo del Prado at Madrid*. W. Heinemann.
- LELOUP, J. W., & PONTERIO, R. (2004). Virtual Museums on the Web: El Museo Thyssen-Bornemisza. *Language Learning & Technology*, 8(3), 3-8.
- LÓPEZ, J. M. T. (2018). La relación artes-educación: educamos con las artes y hay educación artística común, específica y especializada. *Boletín Redipe*, 7(12), 36-92.
- MASACHS, R. C., & BERCIANO, S. G. (2017). El Museo Thyssen-Bornemisza: evaluando sus programas educativos para enseñar arte. *Arte, Individuo y Sociedad*, 29(1), 39-56.
- MONT, C. G. (2013). Los museos virtuales como espacios para el aprendizaje. *Virtualis*, 4(8), 35-43.
- OBSERVATORIO DE MUSEOS DE ESPAÑA. (2021). Recuperado 12 de diciembre de 2020, de <http://www.culturaydeporte.gob.es/observatorio-museos-espana/el-observatorio-de-museos-de-espana.html>
- OREA-GINER, A., & VACAS-GUERRERO, T. (2020). Text analysis como método para identificar los atributos de museos percibidos por turistas: un análisis exploratorio del Museo Nacional Thyssen-Bornemisza (España). *ESIC Market. Economic & Business Journal*, 51(3).
- PAZ ZEA, H., & ALCARAZ IBAÑEZ, L. A. (2013). Fundamentos teóricos y prácticos de los museos virtuales (Doctoral dissertation, Universidad Autónoma de la Ciudad de México: Colegio de Humanidades y Ciencias Sociales: Licenciatura en Arte y Patrimonio Cultural).
- PARIGI, C. (2013). Dalla Galleria degli Uffizi all'Accademia: vicende collezionistiche di una statuetta di Venere. Dalla Galleria degli Uffizi all'Accademia: vicende collezionistiche di una statuetta di Venere, 161-186.
- PERELLÓ, M. C. H. El museo ¿Sin museo?: El arte digital en el museo virtual. Nuevos recursos para la Educación Artística. *EARI*, pp.55-62.
- PESCARIN, S. (2014). Museums and Virtual Museums in Europe: Reaching expectations. *SCIRIS*.
- PESCE, D., NEIROTTI, P., & PAOLUCCI, E. (2019). When culture meets digital platforms: Value creation and stakeholders' alignment in big data use. *Current Issues in Tourism*, 22(15), 1883-1903.
- PERRY, S., ROUSSOU, M., ECONOMOU, M., YOUNG, H., & PUJOL, L. (2017, October). Moving beyond the virtual museum: Engaging visitors emotionally. In 2017 23rd International Conference on Virtual System & Multimedia (VSMM) (pp. 1-8). IEEE.
- PINILLA, C. T., & DE ALGECIRAS, E. D. A. (2012). Investigación didáctica: la cibermuseografía didáctica como contexto educativo para la enseñanza y el aprendizaje del patrimonio. Estudio de páginas web educativas de museos virtuales de arte. *Universidad de Sevilla*.
- RAJAL, C. (2018). Museos portátiles. Una experiencia desde la Educación Artística no formal para deconstruir la Historia del Arte y repensar el museo. *PULSO. Revista de Educación*, (41), 49-67.
- READ, J.C. (2008). Validating the Fun Toolkit: an instrument for measuring children's opinions of technology. *Cogn.Technol.* 10 (2) pp. 119-128.
- REILLY, P. (1991). *Towards a Virtual Archaeology*. Oxford: British Archaeological reports.
- RUIZ, F. L. (2012). *Museos y educación*. Universidad Iberoamericana, Ciudad de México.
- RUIZ, R. D. (2013). Patrimonios migrantes y educación artística. Los nuevos retos de la educación en patrimonio. *Educación artística: revista de investigación (EARI)*, (4), 9-17.

- SALIDO-LÓPEZ, P. V. (2017). La Educación Artística en el contexto de las competencias clave: del diseño a la evaluación de talleres didácticos en la formación de formadores. *Arte, Individuo y Sociedad*, 29(2), 349-368.
- SUNDAR, S. S., GO, E., KIM, H. S., & ZHANG, B. (2015). Communicating art, virtually! Psychological effects of technological affordances in a virtual museum. *International Journal of Human-Computer Interaction*, 31(6), 385-401.
- SYLAIYOU, S., MANIA, K., PALIOKAS, I., PUJOL-TOST, L., KILLINTZIS, V., & LIAROKAPIS, F. (2017). Exploring the educational impact of diverse technologies in online virtual museums. *International Journal of Arts and Technology*, 10(1), 58-84.
- ZAFRA, R. (2015). Educación y cultura-red: potencias y contradicciones para una transformación necesaria. Profesorado. *Revista de Currículum y Formación de Profesorado*, 19(2), 11-2.