

Digital Cultural Heritage as an Emerging Tool to Develop Egyptian Educational Programs: Case-study: Applying interactive technologies in tourist guiding education

Dina Ezz El-Din

Faculty of Tourism and Hotels, Alexandria University

Abstract

In all times and specifically in periods of crises and political changes and instabilities, it is crucial to raise awareness and promote the value of cultural heritage among citizens. Engaging heritage in educational programs is essential to safeguard this wealth as well as to strengthen national identity. To achieve this goal, educational programs have to engage all members of the local communities especially youth in order to create a cultural understanding of their heritage. The main aim of the research is to study the impact of introducing digital cultural heritage to the educational system in Egypt, specifically departments of tourist guiding in universities. This would consequently preserve cultural heritage and develop Egyptian educational programs. The study will analyze the current situation and investigate the problems encountered in heritage education in Egypt. It will consequently suggest the necessary solutions.

Keywords: Education, Cultural Heritage, Digitization, Tourist Guiding.

Introduction

Being part of a society implies recognizing the importance of its past and valuing its cultural heritage as one of the main foundations of national identity (Ott and Pozzi, 2011). Societies are attached to their tangible and intangible heritage. They are responsible for its preservation and also for the promotion of their cultural heritage sites (Delalande, 2017). Heritage is a collection of resources inherited from the past as an expression of society's evolving values, beliefs, knowledge and traditions (Musset, 2012). Cultural heritage is also considered as the visible part of the memory of a society; it is indeed the preservation and enhancement of commons interests that must be passed on to future generations (Mazière, 2015).

In general, heritage resources presented in the ordinary way do not appeal to young people. However, given that they are active users of modern technologies, digitization can therefore be used as a means to increase their interest in historic sites and museums (Varbova and Zhechkov, 2018). The main objective of this study is to create a digital heritage accessible to all by combining historical resources with digital tools and to allow the general public, especially younger generations to value and preserve their heritage. This will be achieved through the implementation of digital cultural heritage in educational programs. University students of tourist guiding departments are the main focus of the study.

Heritage Education

For many years the Egyptian educational system, whether in schools or universities, had been applying traditional teaching methods. The UNESCO's Framework Program for Education (2014-2021) encompasses three major strategic objectives: (1) to develop education systems that promote lifelong, quality and inclusive learning; (2) empowering learners to be creative and responsible citizens of the world; and (3) shaping the future education curriculum (Lobovikov-Katz et al., 2016). Heritage education is based on disciplines that focus on knowledge "about" heritage content; but it is also possible to discuss education "by" heritage, which is a diffusion of emotional and artistic experiences and common values (Musset, 2012).

As early as 1972, UNESCO had introduced the concept of education to that of heritage protection: "The States Parties to this Convention shall endeavor by all appropriate means, and in

particular by educational and information programs, to strengthen appreciation and respect by their peoples of the cultural and natural heritage defined in Articles 1 and 2 of the Convention" (UNESCO, 1972). Heritage education is therefore an effective strategy for combining stories and values; it conveys to students their heritage and the notion of national identity (Musset, 2012). It is therefore possible to assume that the educational system is one of the major institutions that can protect heritage from destruction. Heritage education makes it possible to transmit to young people the notion of national collective identity and consequently helps to preserve this heritage (Calindere, 2010).

Digitization

Digitization of cultural heritage creates an effective environment that enables the management of heritage collections. It consequently provides educational, scientific and cultural means of transmitting and preserving such collections (Vidal and Larochem, 2016). Over the last two decades, digital technologies have developed, paving thus the way to a new approach for the valorization of cultural heritage (Delalande, 2017). It must be remembered that digital tools are not a substitute for traditional practices that allow human interaction. On the contrary, digitization is an intermediary to complete and improve the heritage valuation of a place or a territory through new experiential, intellectual or communication approaches (Guillois, 2017).

The goal of digital education should be to enable people to use digital tools, while being aware of the opportunities and risks these tools bring (Rudloff and Camier, 2016). Examples of digital tools are: websites, mobile applications, QR codes, Augmented Reality, Virtual reality, etc. They all help to make heritage accessible and understandable for everyone (Delalande, 2017).

Methodology

The present research can be classified as a descriptive-analytical study. In order to test the hypotheses of the research, an online questionnaire was conducted to examine different trends in digital education for cultural heritage. A quantitative method of data collection was used with a sample of 535 people aged 18 to over 40 years. The investigation was divided into five parts. The first part gathered demographic data. The second part examined respondents' opinions about the use of digital cultural heritage in the Egyptian educational system. The third part examined technologies that can be used in respect of digital heritage education. Part four examined the obstacles facing the implementation of the proposed programs. The fifth part was about educational institutions that teach cultural heritage courses, to the knowledge of the respondents.

Data analysis

The first group of questions dealt with personal data. The result showed that 67.3% were women while 32.7% were men. Concerning the level of education, 29.9% had a bachelor's degree, 42.4% had university degrees, 2.3% had technical education and 25.4% had a post-graduate degree.

As for age groups, the majority varied between 18 and 23 years (40.6%). This group is followed by those over 41 (22.8%). The other two age categories are almost equal: 24-30 (18.5%) and 31-40 (18.1%). Respondents' groups varied between students (47.8%), parents (21.7%) and educators (school and university) (30.5%). The sample focused on wider groups rather than university staff members and students in tourist guiding educational institutions in order to assess the general community acceptance of the research subject.

When asked about the importance of digital cultural heritage with respect to educational programs, the majority of respondents were in favor of the questions asked as follows:

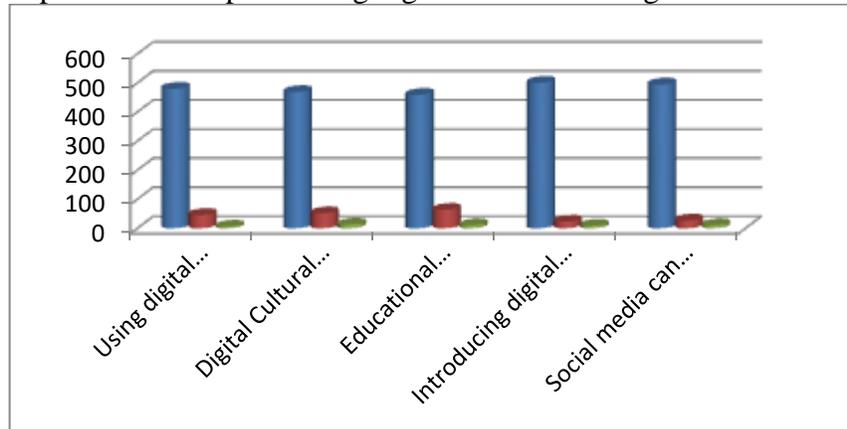
-89.7% approve using digital cultural heritage in educational programs as an important way to preserve it (480/535). -87.6% think digital cultural heritage can change the attitudes and behavior of citizens in their communities (469/535).

-85.7% accept that educational programs which implement digital cultural heritage can increase the students' sense of national identity (459/535).

-93.6% are in favor of introducing digital technology in archaeological sites and museums to achieve better benefits and a deeper understanding of these sites (501/535).

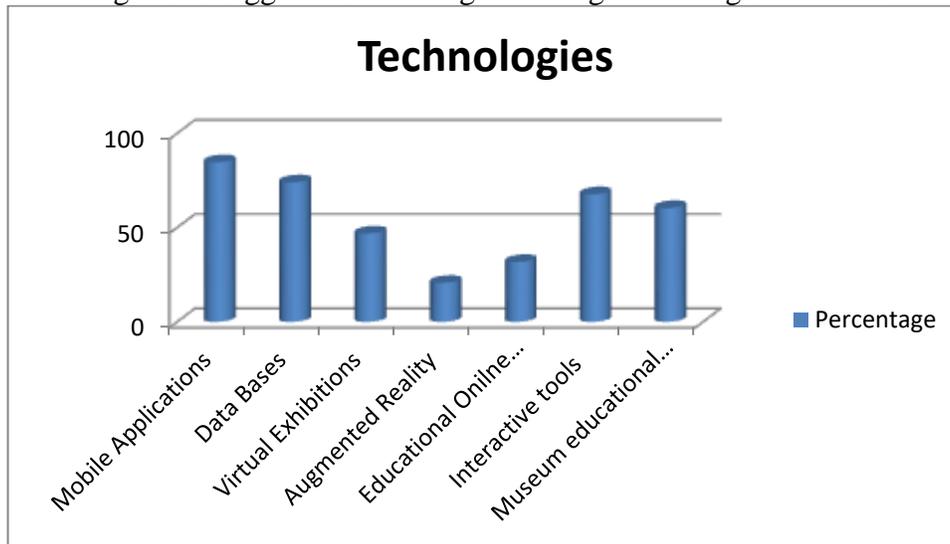
-92.5% think that social networks can play a role in linking cultural heritage to educational curriculum (495/535).

Figure 1: Importance of implementing digital cultural heritage in educational programs



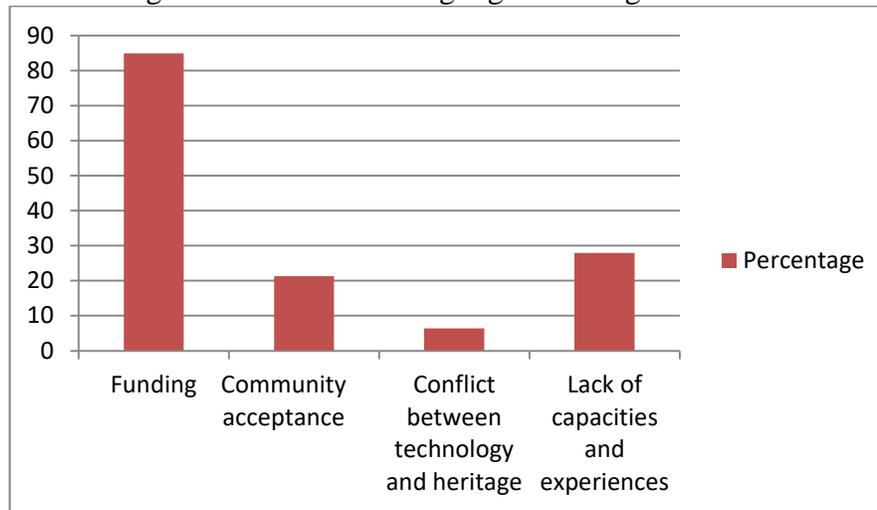
With respect to the suggested technologies for digital heritage education, the proposed processes were chosen by most participants as follows (Figure 2): Mobile applications (84.7%), online databases (74%), virtual exhibitions (46.9%), AR (Augmented Reality) (20.7%), Educational online courses (31.8%), Interactive tools (67.7%), and Museum educational programs (60.4%).

Figure 2: Suggested technologies for digital heritage education



When asked about the key issues facing digital heritage education, most respondents agreed that funding is the biggest obstacle (84.9%). The lack of capacities and experiences as well as the community acceptance come second (27.9% and 21.3% respectively). Finally, only 6.4% of participants chose the technology-heritage conflict (Figure 3).

Figure 3: Obstacles facing digital heritage education



The fifth and last question was about educational institutions that teach cultural heritage courses, to the knowledge of the respondents. 72.4% do not know any institution, while 27.6% stated some examples of faculties such as: Faculties of Tourism and Hospitality (Universities of Alexandria and Helwan), Department of Applied Languages (Alexandria University), Faculty of Arts (Alexandria University), and the French University of Egypt.

Results and discussion

If digital pedagogy is a challenge for education, the adoption of digital cultural heritage in the Egyptian education system is a more problematic issue.

With the development of the internet, information has become more accessible. This implies a parallel evolution of the roles of the teachers as well as the practices of the students (Djebara and Dubrac, 2015). The results of the questionnaire showed that most respondents place a high value on the digitization of cultural heritage as an effective means of developing education systems. Respondents are aware of the role that new technologies can play in improving the level of student knowledge.

On the other hand, it is necessary to understand that there are some constraints faced by digital heritage education strategies as follows (Ben Henda, 2016):

- Lack of motivation of educators to the training and digitization of courses.
- Inadequacy of digital educational content online.
- The lack of qualified professionals with adequate training to use new technologies.
- Weakness of scientific research.
- Precarious working conditions in public schools and universities.
- The lack of adequate budgets to implement the new systems.

Digital cultural heritage education in tourist guiding departments

Since tourist guides are the ones who inform visitors about their country's historical, cultural and natural attractions, they play a key role in the interpretation of their heritage. Accordingly, introducing innovative technologies in tourist guiding education is meaningful for enhancing the quality of service (Büyüksalvarc et al, 2017).

The relationship between tourist guiding education and interactive technologies is consequential (Büyüksalvarc et al, 2017). The introduction of digital cultural heritage into educational

programs has become a necessity. Indeed, some university departments have introduced courses that deal with cultural heritage and its digitization. The Faculty of Tourism and Hotels, Alexandria University for instance has launched a new program entitled "Tourism, Hospitality and Heritage Management". Furthermore, Alexandria University is in the process of establishing a new post-graduate program (Diploma and Master). The project is entitled [Edu-MUST] Education and Capacity Building in Museum Studies. It aims to contribute significantly to building capacity in the field of museums in Egypt by developing a higher education program.

The goal of the program is to develop a virtual reality interface using 3D models of museum collections. The project is managed by the Faculty of Arts (Department of Greco-Roman Archeology) in cooperation with the Department of Tourist Guiding in the Faculty of Tourism and Hotels at the University. It is in partnership with some Egyptian institutions: Universities of Ain Shams, Helwan, Damanhour, the French University of Egypt, Ministry of Antiquities; as well as some European partners: University of Southampton, Democritus University of Thrace, Ecole du Louvre, Centre d'Études Alexandrines and Royal Museum of Mariemont.

It is worth mentioning that in the Department of Tourist Guiding in the Faculty of Tourism and Hotels-Alexandria University, the courses of archeology, cultural heritage, sculpture and minor arts use new technologies so that the students can get better knowledge about archaeological sites and museums. Professors use online databases and websites that offer virtual tours in museums and monuments and enable to visualize objects and archaeological sites through interactive 3D models. Moreover, students conduct research projects to develop archaeological sites using new digital technologies such as QR codes and virtual itineraries.

European educational frameworks as benchmarks for Egyptian tourist guiding departments

With the continuous development of Information and Communication Technologies (ICT) and their impact on tourism, tour guides and all aspects of the tourist experience, the needs arise for tour guides to be well prepared in order to adapt to new technological and digital trends (Weiler and Black, 2013). Consequently, this requires Egyptian tour guiding educational programs to develop new courses and activities which implement digital tools sharing online resources as well as to design multimedia lessons. Two European projects, namely The Polo Museale (PMS) and EdMuse have been benchmarked in this research in order to create a framework to be adopted by tour guiding departments in Egyptian educational institutions.

The Polo Museale Project

In 2010, Sapienza University of Rome has launched the project *Polo Museale (PMS)* which adopts online databases to develop teaching and learning activities. Twenty museums of Sapienza University have participated in the project by enabling the accessibility of their online object contents (Ferrara and Campanella, 2012; Ferrara, Macchia and Sapia, 2013). The main aim of PMS is to enable the public get more access to its heritage through creating a meeting point for teachers, students and citizens. Different projects were developed, using multimedia and network technologies, to promote heritage and knowledge for a wide public.

Together with a number of primary schools, Polo Museale started in 2011 using museum objects as learning tools for school students. Museum collections have thus become teaching tools. Courses were designed to manage the accessibility of museum online catalogs by both teachers and students, and to improve relationship between educational context and the digitized material.

The created platform thus aimed at enhancing cooperation between school teachers and museum staff to combine cultural heritage information and educational materials

Through a communication strategy and a collaboration process between the museum and the teacher, a specific application was created to allow teachers access PMS catalogue and download data of museum objects to their computers in order to produce multimedia lessons. Using specific software, teachers created hypertexts with images of the museum objects from Sapienza catalogue. Classroom activities are then followed by museum visits where students see objects already studied within the hypertext. This helped to improve the cognitive capabilities of students. The project has shown significant results about the impact of using digital resources as new teaching tools that can improve the learning environment (Ferrara and Campanella, 2012; Ferrara, Macchia and Sapia, 2013).

EdMuse Project

EdMuse "Education and Museum: Cultural Heritage for learning science" is an Erasmus + Project that was launched in 2015. Participants are universities and other educational institutions from several European countries such as Greece, Italy and Portugal. Like the Polo Museale Project, EdMuse proposed a new way of cooperation between schools and museums. It aims at creating a platform which enables the use of digital learning objects of museums as teaching aids (EdMuse, 2016). It is thus suggested that a similar framework can be built in order to develop educational tools used by professors and students in Egyptian tourist guiding departments. The proposed educational model helps to promote a virtual learning environment and to enhance the relationship between educational contexts and museum collections.

Conclusion

Not only does digitalization offer wider and inclusive access and a multidisciplinary vision of heritage resources, but also it enriches education with this cultural heritage through the adoption of innovative and creative methods (Ott and Pozzi, 2011). The introduction of digital heritage into educational programs provides an added value. Educational programs that adopt digital cultural heritage make it possible to valorize and preserve heritage. On the other hand, it is necessary to highlight the importance of the digitization of heritage in relation to the tourism sector (Varbova and Zhechkov, 2018). Promoting heritage sites generates cultural tourism (Delalande, 2017). In 1999, the International Council on Monuments and Sites (ICOMOS) launched the Cultural Tourism Charter underlining the responsibility of heritage professionals in developing cultural projects that adhere to sustainable tourism characteristics (ICOMOS, 1999).

The adoption of ICT-based tools and methods in the field of cultural heritage education also helps to reduce, to some extent, other types of barriers, such as those related to people with physical disabilities or other sensory or cognitive impairments (Ott and Pozzi, 2011). For instance, using digital maps in education has proved to be significant since it allows students to rediscover archaeological sites (Apostolopoulou et al., 2014).

It is clear that digital heritage education requires a complete evolution for all those who are part of the educational system, including educators, students, researchers, heritage professionals, and administrative managers of educational institutions.

Recommendations

After presenting all the elements concerning implementing digital heritage in the educational programs, it is obvious that certain measures must be taken to develop the Egyptian education

system. In this respect, the UNESCO Charter on the Preservation of the Digital Heritage (2003) is an important support point that must be consulted and followed. Article (11) of this charter in particular focuses on "The stimulation of education and training programs, resource-sharing arrangements, and dissemination of research results and best practices will democratize access to digital preservation techniques" (UNESCO, 2003).

Article (10) of the same charter is significant. It deals with the importance of the role of universities and research organizations to ensure preservation of research data (UNESCO, 2003).

The following measures must be taken:

- It is necessary to promote partnerships between Egyptian educational institutions (schools and universities), regional authorities, and museums to strengthen collaboration among them all (Varbova and Zhechkov, 2018).
- Tourist guiding education syllabuses have to include basic courses on interactive technologies (Büyükşalvarc et al, 2017).
- Additional efforts are needed to preserve Egyptian intangible cultural heritage and to promote digital tools as methods of dissemination and safeguarding.
- It is important to encourage the private sector in Egypt to participate in the digitization of heritage, particularly with regard to funding.
- Awareness of governmental institutions to the benefits of digitization needs to increase and be developed.
- Cultural institutions should develop educational tools with innovative technologies in order to make heritage more accessible.
- Developing scientific research in the field of digital education is very influential. It is in fact multidisciplinary since it involves various sciences and disciplines. This creates a greater diffusion (Ben Henda, 2016).
- It is crucial to take administrative steps to develop new technologies and successfully computerize the Egyptian educational system.

References

- Apostolopoulou, A.P. et al. (2014). Cultural Heritage and Education. Integrating Tour Maps in a Bilateral Project. *European Journal of Geography*, vol. 5, no.4, 67-77.
- Ben Henda, M. (2016). Formation à distance et outils numériques pour l'enseignement supérieur et la recherche en Asie-Pacifique, (Cambodge, Laos, Vietnam). Partie 2, AUF.
- Büyükşalvarc, A. et al. (2017). Usage of Interactive Technologies in Tourism Guidance Education. A Research on Educational Institutions at The Level of Bachelor Degree. *Selcuk University Journal of Social and Technical Researches* Volume:13, 2017, 1-14
- Calindere, O. (2010). L'identité nationale et l'enseignement de l'histoire. Analyse comparée des contributions scolaires à la construction de l'identité nationale en France et Roumanie (1950-2005), *Science politique*. Université Montesquieu - Bordeaux IV ; Institut d'études politiques de Bordeaux.
- Delalande, C. (2017). Application of Digital Tools in Cultural Heritage Valorization: The Example of Sigiriya. *International Conference on the Humanities (ICH)*, 2017 Faculty of Humanities, University of Kelaniya, Sri Lanka, 35-47.
- Djebara, A. and Dubrac, D. (2015). (Rapporteurs au nom de la section de l'éducation, de la culture et de la communication), *La Pédagogie Numérique : Un défi Pour L'Enseignement Supérieur*. Journal Officiel de la République Française.

- EdMuse Education and Museum: Cultural Heritage for learning science. 2016. <http://edmuse.eu/> (Accessed 25/05/2019)
- Edu-MUST Program. (<http://www.edumust.edu.eg/local/pages/about.php> (accessed on April 2nd 2019).
- Ferrara, V. and Campanella, L. (2012). The Polo Museale of Sapienza University of Rome: an opportunity for culture, education and tourism. *University Museums and Collections Journal*, 163-168.
- Ferrara, V., Macchia, A. and Sapia, S. (2013). Reusing cultural heritage digital resources in teaching. *Digital Heritage International Congress*, 409-412.
- Guillois, A. (2017). *Valorisation numérique des patrimoines : Guide, Sites et Cités Remarquables de France*.
- ICOMOS, 1999. *International Cultural Tourism Charter 1999*. Mexico.
- Lobovikov-Katz A., Benito, G., Sanchez, V. M., Martins, J. and Sojref, D. (2016). Training Schools for Conservation of Cultural Heritage: Between Expertise, Management and Education. M. Ioannides et al. (Eds.): *EuroMed 2016, Part I, LNCS 10058*, pp. 880–890.
- Mazière, Ch. (2015). *La transmission du patrimoine par l'enseignement des arts*. Education. Université Pascal Paoli.
- Musset, M. (2012). *Education au patrimoine : mémoire, histoire et culture commune*, Dossier d'actualité Veille et Analyses, n°72, 1-14.
- Ott, M. and Pozzi, F. (2011). Towards a new era for Cultural Heritage Education: Discussing the role of ICT, *Computers in Human Behavior* 27, 1365–1371.
- Rudloff, P. and Camier, M. (2016). *Eduquer au Numérique*, (1ère édition - Septembre 2016) Animafac, Paris.
- Tourism, Hospitality and Heritage Management Program, Faculty of Tourism and Hotels, Alexandria University. (<https://tourism.alexu.edu.eg/index.php/ar/2016-02-21-18-08-22/2016-02-29-10-33-31/2010-2013> (accessed 15/03/ 2019).
- UNESCO, 1972, *Convention Concerning the Protection of the World Cultural and Natural Heritage* <https://whc.unesco.org/archive/convention-en.pdf> (Accessed 09/04/2019).
- UNESCO, 2003, *Charter on the Preservation of Digital Heritage*. http://portal.unesco.org/en/ev.php-URL_ID=17721andURL_DO=DO_TOPICandURL_SECTION=201.html (Accessed 15/04/ 2019).
- Varbova, V. and Zhechkov, R. (2018). *Digital solutions in the field of cultural heritage. A Policy Brief from the Policy Learning Platform on Environment and resource efficiency*. Interreg Europe Policy Learning Platform on Environment and resource efficiency. European Regional Development Fund.
- Vidal, G. and Larochem, F. (2016). *Modélisation du patrimoine : usages et enjeux des applications numériques*. 9e Journées d'études TIC.IS - TIC Information et stratégies, Bruxelles, Belgique.
- Weiler, B. and Black, R. (2015). The changing face of the tour guide: one-way communicator to choreographer to co-creator of the tourist experience, *Tourism Recreation Research*, 40:3, 364-378.