



## Using 3D Hologram Technology (3DHT) in the Distance Learning Program to Enhance the Professional Skills of Tour Guidance Undergraduate Students

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### Abstract

Vocational training is the cornerstone of many industries especially those that depend mainly on the human element like tourism. The tour guide is considered one of the most vital employees in tourism. Depending on his performance and interaction with the tourists, the destination image is positively or negatively formed. Accordingly, it is necessary to pay great attention to tour guides' education and training through formal specialized institutes to enhance the professional skills of tour guides. The training of the tour guidance undergraduate students is usually carried out through field trips in the monumental sites and museums in order to gain professional experience. However, because of the recent COVID19 Pandemic that resulted in full-scale quarantine, it became necessary to search for another technological approach through distance learning educational platform to achieve the educational objectives of the training courses. The recent study's aim is to detect the possibility of using 3DHT in distance learning programs to reinforce the professional skills of students and achieve the maximum benefits for them beside considering this innovative method as an alternative approach of education that can be adopted in similar circumstances.

### Introduction

Egypt is a famous tourist destination that has many qualifications either natural or cultural. Hence tourism constitutes a crucial industry that continually contributes to its economy and provides many employment opportunities. As a service sector, tourism depends on the human element in the first place, specially tour guides whose performance is a principal factor influencing the customers' impression and satisfaction of the tourist destination and subsequently their decision about coming back. Furthermore, present research proposes that tour guides contribute to destination image, marketing and branding (Chan & Baum, 2004). According to Ap and Wong, tour guides

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are the front-line employees who are in charge of all the pleasure that the tour services provide (Ap & Wong, 2001).

Schmidt mentions that “tour guide’s communication skills may make or break a tour” (Schmidt, 1979), and Pond confirms that the tour guide is the cultural ambassador for his country who interacts directly with the tourist of cultural, ethnic, social and religious backgrounds as he plays a crucial role in constructing impressive experiences for tourists, due to his direct connection with these tourists (Pond, 1993).

Therefore, professional tour guides need to possess some skills and qualifications that enable them to achieve their mission properly. This can be done through the high-quality academic education on tourism as well as field trip training which comprises the most significant part in the process of forming professional tour guides’ skills and character.

Tourism faculties and institutions in Egypt have academic departments of tour guiding in both undergraduate and postgraduate levels. The subjects and training courses are designed to form the knowledge of tour guides, providing them with important skills and developing their qualifications for future career.

The tour guidance education is of special nature that depends on the interaction between the lecturer and the student in a way that can’t be achieved through textbooks or one-side online courses. The credit hours of the students who study tour guidance include field trips throughout the four years of study to different archeological sites and museums all over Egypt under the supervision of lecturers and accompanied by assistant instructors. Unfortunately, with the recent COVID19 Pandemic that resulted in full-scale quarantine, it was impossible for students to attend these field trips. They now have to use the distance learning platform to communicate with lecturers. That is why it was urgent to find another way through modern technology to conduct the field trip training.

This study focuses on using 3D hologram technology in distance learning and training of tour guidance students to enhance their professional skills as if they were attending the field trips in order to achieve the educational objectives of the courses, considering this innovative way an alternative approach of the traditional way of training (Pengshun, 2014).

## **1. Tour Guiding Profession**

### **1.1. History of Tour Guiding**

The Tour Guide can be defined as “ A person, usually a professional, who guides groups (and sometimes individuals) around venues or places of interest such as natural areas, historic buildings and sites, and landscapes, interpreting the cultural and natural heritage in an inspiring and entertaining manner” (adapted from European Federation of Tour Guides Associations, 1998) (Weiler & Black, 2015).

However, The World Federation of Tourist Guide Associations (WFTGA,2003) defines the tourist guide as “a person who guides visitors in the language of their choice and interprets the cultural and natural heritage of an area which person normally possesses

an area-specific qualification usually issued and/or recognized by the appropriate authority” (“<http://www.wftga.org/tourist-guiding/what-tourist-guide>”, 2003)

Guiding is one of the world’s oldest jobs, the early historical accounts referred to pathfinders and cicerones, who were antecedents of the contemporary guide (Pond, 1993). In the 5th century BC, Herodotus, an extensive traveler and writer, depended not only on guides but also more specifically on guides who spoke his language (De Sélincourt & Marincola, 1996), Casson mentioned that “at a site such as Olympia, where there was a ... forest of statues ... the accumulation of hundreds of dedications ... a tourist was helpless without a guide” (Casson, 1994).

In line with Cohen, the origins of the modern tour guide were in the 17th and 18th centuries with the advent of the ‘Grand Tour’. This new form of tourism emerged as a direct outcome of the seek for learning that followed on from the Renaissance period; British male aristocrats were encouraged to travel to the major cultural centers as part of their education, accompanied by a tutor or guide (Cohen, 1985). These tours are considered to be the predecessor of the modern study tours that are most often organized by educational institutions and led by expert guides (Morse, 1997).

The nineteenth century initiative of Thomas Cook, whose concept of group travel, together with improved transportation and other social and technological developments, led to the need for service personnel in all aspects of the tourism industry, including tour guides, (Hall 1995), thus was the birth of the modern tour guide and as such Cook is sometimes referred to as the ‘patron saint of modern tour guides’ (Pond, 1993).

Recently, the tour guide became responsible of presenting complex, context-specific and flexible products, and offering benefits beyond only safety and convenience (Weiler & Black, 2015). The good tour guide should not be only knowledgeable in his area of interpretation, but also able to research information and interpret it in an ethical, interesting and sensitive manner. Accordingly, the need for adequate guide training and education to improve tour guide performance, raise guiding standards, and support career development became a challenge (M. F. Christie & Mason, 2003; Weiler, 2016).

## **1.2. Skills of the Tour Guide**

Tourists are now well informed, more concerned and have high expectations of their tour guides; therefore tour guides are required to have not only the interpretation and communication skills, but also to perform a number of diverse roles (Weiler, 2016; Weiler & Black, 2015).

Cohen identifies the importance of communication between tourists and tour guides, and argued that tour guides’ communication competency affects the whole perceived success or failure of tourists’ experiences (Cohen, 1985).

As the main role of the guide is to provide information, the communicative element plays an important role in shaping the relationship between tourist and guide. Pond indicated that the role of the guide involves being:

- “A leader capable of assuming responsibility”

- “An educator who helps the guests understand the places they visit”
- “An ambassador who extends hospitality and presents the destination in a way that makes visitors want to return”
- “A host who can create a comfortable environment for guests”
- “A facilitator who knows how and when to fulfill the previous four roles” (Pond, 1993).

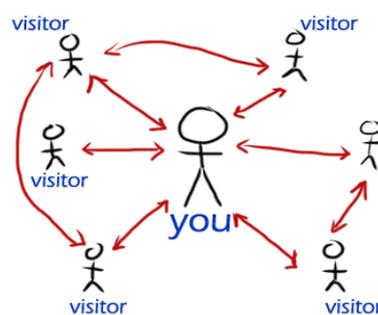
In their study about issues related to tour guiding professionalism, Ap and Wong suggested that the three most common qualities and standards that a tour guide must have are:

1. “Good product knowledge”
2. “Good communication skills, including proficiency in languages”
3. “Good attitude with respect to service, willingness to help, respect and empathy” (Ap & Wong, 2001).

Jonasson and Scherle also explored the performative aspects of guiding, adopting a cross-disciplinary approach to understanding guided tours. Like other researchers, they highlighted the guide’s role as intercultural mediator, but saw this as a performative as well as a communicative function. Guides deliver different views to tourists, not only through verbal and non-verbal communication but also through performances, stories, interpretation and other forms of mediation (Jonasson & Scherle, 2012).

### 1.2.1. Communication Skills

Steiner and Reisinger defined the communication as “a process of conveying information from one person to another ... illustrated as a one-way, two-way or circular process involving a sender, receiver, medium and message” (Steiner & Reisinger, 2004). (Fig.1)



**Fig.1.** The Communication Process

Mark Knapp mentioned that the verbal communication is done through communicating with language orally or in writing (Knapp, Hall, & Horgan, 2013), while Barrett said that “communication is the transmission of meaning from one person to another or to many people, whether verbally or nonverbally” (Barrett, 2006). Communication from one person to another is commonly represented as a simple triangle consisting of the context, the sender, the message, and the receiver (SUARDHANA, Nitiasih, & Jaya, 2013).

Verbal communication consists of accuracy, fluency and comprehensibility: (1) Accuracy consists of pronunciation, grammatical, lexical, phonological; (2) Fluency means speaking with a fairly wide range of expression; and (3) Comprehensibility means that it is easy for the listener to understand the speaker's intention (Heaton, 1975). However, non-verbal communication is done through body languages like gestures, eye contact, and facial expressions. Effective communication ability in tour guides can lead to higher levels of tourist satisfaction, destination loyalty, and more positive word-of-mouth mentions, besides enhancing tour guides' overall self-esteem, self-efficacy and motivation (Al Jahwari, Sirakaya-Turk, & Altintas, 2016; Chang, 2006 ).

### 1.2.2. Interpretation Skill

According to the Encyclopedia of Tourism the "*interpretation*" is "any activity which seeks to explain to people the significance of an object, a culture or a place" (Xiao, 2002) while American National Association for Interpretation (NAI) mentions that "Interpretation is a mission-based communication process that forges emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource"

([https://www.interpnet.com/nai/interp/About/What\\_is\\_Interpretation\\_/nai/\\_About/what\\_is\\_interp.aspx?](https://www.interpnet.com/nai/interp/About/What_is_Interpretation_/nai/_About/what_is_interp.aspx?))

In his book, *Interpreting Our Heritage*, Tilden determined the seven principles of interpretation

(i) interpretation via a diversity of enjoyable communication approaches, activities and experiences; (ii) interpretation designed to promote the use of two or more senses; (iii) interpretation designed to facilitate individual and group involvement, contact or participation; (iv) communicating the relevance of an object, artefact, landscape or site to visitors; (v) communicating by way of theme development/thematic interpretation; (vi) communicating accurate fact-based information that facilitates understanding and provokes thinking and meaning-making; and (vii) interpretation that makes people feel empathy or emotion (Tilden, 1977).

Interpretative commentaries presents more than mere facts employed in order to explain the importance of attractions or facilities, thus providing listeners with true understanding, raising their interest and observation ability, also helping them in developing personal skills of experiencing history and artistic feeling (McGrath, 2003).

In that respect, the descriptive statements of constructions, statues and ceremonies etc., usually stated by tourist guides, can be more effective if they become a part of an exciting story:

"Tourists are not pretty much impressed by remnants at an archeological site or the façade of an old building unless they hear a story, the characters and events related to the site become vivid in front of the visitors' very eyes (Rabotic, 2010).

## 2. The Traditional Education and Training of Tour Guidance Students

The tour guide knowledge structure is formed through a process of learning and training, which is not restricted to textbooks of history, archaeology, mythology and arts, but there are other specific and generic skills that should be taught or engendered depending on particular situations and contexts (Kalansooriya, Marasinghe, & Bandara, 2015).

The communication skills of the students, for example, can be improved inside the classroom by adopting interactive lectures, students' group working, seminars and workshops in and across subjects, videotaping them during verbal presentations both as individuals and in groups, this cooperative learning is a keystone in teaching the tour guiding course, as the lecturer and the students can exchange their skills and knowledge (M. Christie & Mason, 2008).

Stakeholders indicated that effective training needed to be adequate, appropriate, consistent, and should be a collaborative effort between industry and educational institutions which can present the academic vocational training (de Kadt, 1979; Gurung *et al.*, 1996).

On the contrary, lack of academic training can result in unethical guiding practices, poor guide performance, negative publicity towards the guiding profession and damage to the destination's image (Ap & Wong, 2001; Mak *et al.*, 2011). A study about the Egyptian tour guides clarified that despite being licensed, they lack the appropriate education and knowledge to perform effectively, depend on their own research for their tours or learn from other experienced guides, hence the author confirmed their need to formal training and suggested that tour guiding courses should be delivered consistently through educational institutions (El-Sharkawy, 2007).

Therefore, the tourism institutions in Egypt realized the importance of guiding training to improve the guide's performance and knowledge and raise guiding standards. The training of undergraduate tour guidance students in the faculty of Tourism in Alexandria University, for example, is usually conducted in the archaeological sites and museums, through an interactive method between the lecturer and the students.

These field trips are excellent and vital opportunities for students to view and explore historical places, develop a range of communication skills, and provide knowledge through self-experiences and observations that cannot be achieved in the classroom (M. Christie & Mason, 2008; Shakil & Hafeez, 2011).

The field trips are, at the same time, supportive for the instructors to explain, create, co-relate and coordinate correct concepts and interpretations and allow them to make learning more tangible, effective, fascinating, inspirational, meaningful and rich. Thus, it can be said that educational field trips are helpful in completing the triangular process of learning that is *motivation, clarification, and stimulation* (Vásquez Salazar, 2014).

Moreover, through these field trips, the instructors can evaluate the student's performance, determine the strength and weakness points and subsequently follow many strategies for better results.

### **3. The Role of Modern Technology in Distance Learning**

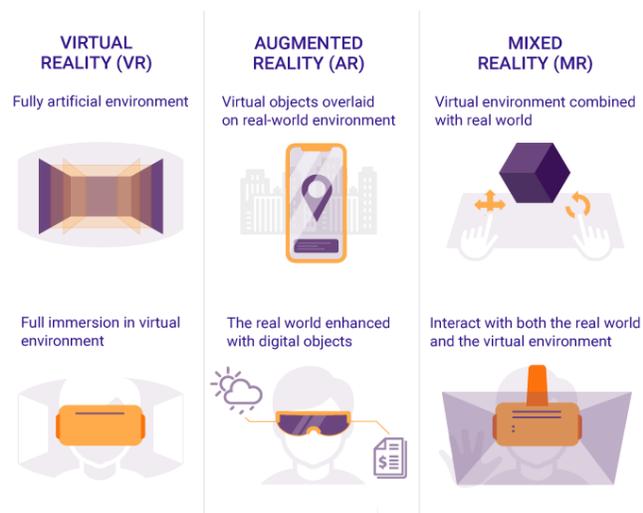
Recently, the rapid progresses in Information Communication Technology (ICT) have created massive changes in many aspects of life, especially educational process. Therefore, educational institutes have been quick to take advantage of technological amenities via integrating ICT into education, which in turn has formed new models of education such as e-learning, distance learning, and blended learning.

These models have changed the face of learning as well as playing a crucial role in the increase of students' numbers and also providing a good chance to learn at any time and/or place (Ghuloum, 2010).

Distance Learning is a field of education that focuses on technological teaching approaches with the aim of providing teaching, often on an individual basis, to students who are not physically present in a traditional educational setting such as a classroom (Subrahmanyam & Ravichandran, 2013). Basics of distance education are that lecturers and students are in different places for all or most of the time of the learning process. Accordingly, it involves some form of communication technology to connect the lecturer with the student.

The history of distance learning dates back to the early nineteenth century; in 1833 the old Swedish university city of Lund presented opportunities to study through the medium of a post. Another early attempt to provide distance education was made in England by Isaac Pitman who taught shorthand on postcards (Holmberg, Bernath, & Busch, 2005).

However, difficulty of interacting between lecturer and student was obvious in almost different stages of distance learning compared to the regular classroom interaction with teacher and student. Therefore, many aspects of innovative communication technology were invented to eliminate complications of interacting between teacher and student like Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR) (Kalansooriya et al., 2015). **(Fig.2)**



**Fig.2.** The Different Aspects of Information Communication Technology

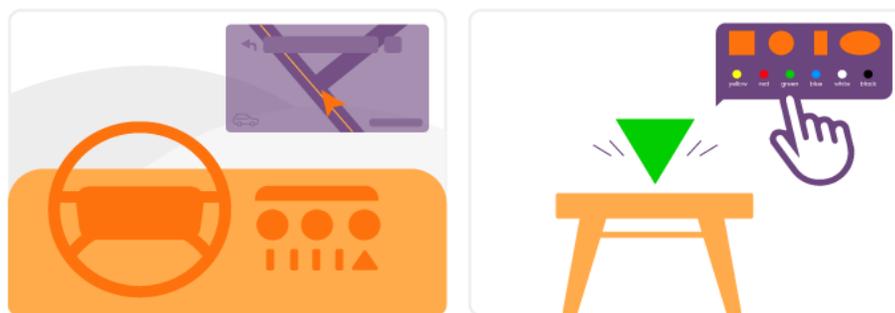
Source: <https://www.forbes.com/sites/quora/>

**Virtual Reality (VR)** is an artificial digital environment that completely replaces the real world, the users experience artificial sounds and sights and feel as if they are in a digital world. They have to use special VR headsets to immerse in virtual reality (Gleb, 2017). The virtual reality applications are used in gaming industry and education through VR learning content and interactive tools that help student to stay in the real environment and interact with the virtual environment objects (Peña-Rios, Callaghan, & Gardner, 2018; Wang, Callaghan, Bernhardt, White, & Peña-Rios, 2018).

**Augmented Reality (AR)** is the overlay or adding of digital content on the real-world environment. The virtual objects can be in various forms: images, videos, or interactive data. It is the most accessible reality technology that the user can experience through portable devices like smartphones or tablets, and it has many applications in medicine and education (Gleb, 2017).

**Mixed Reality (MR)** combines elements of both AR and VR, real-world and digital objects interact. In other words, the virtual content is not only overlaid on the real environment (as in AR) but is anchored to and interacts with that real world. Mixed reality is a more immersive and interactive type of augmented reality (Gleb, 2017). It is a complex panorama at the center of the so called “Virtuality Continuum” (Milgram & Kishino, 1994). Unlike VR, MR allows students to see both the real world and the virtual world. Virtual objects are inserted in the real context in an immersive and interactive way and, unlike VR, the user still has real-world perception; real and virtual contents can interact with each other in real time, hence providing an immersive learning experience for better understanding of what they are studying (Venditti & Mele, 2020). **(Fig.3)**

### Augmented Reality VS Mixed Reality



**Fig.3.** The Difference between AR and MR

**Source:** <https://rubygarage.org/blog/difference-between-ar-vr-mr>

3D holographic technology is the most useful form of Mixed Reality that can be applied successfully in the distance learning program to have the best experience. In fact nearly all training in Virtual Reality Simulation, like online webinars, will be Holographic 3D (Alhayki & Shah, 2016).

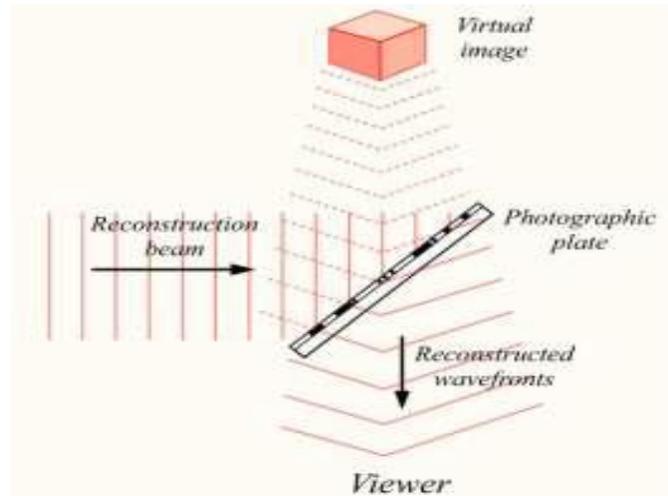
## 4. Using Hologram Technology in Distance Learning Program

### 4.1. What is the Hologram?

Some technologies are currently being employed to conceptualize, design and support distance learning like teleconferences, electronic field trips, podcasts, webinars, video conferencing and online courses and recently 3D Hologram Technology (3DHT) (Kalansooriya et al., 2015).

Holography is a three-dimensional record of the positive interference of laser light waves by the using of a laser interference, and deflection, light intensity recording and suitable illumination of the recording, so one can see live life-size 3D telepresence that can interact with remote audiences (BÜYÜKŞALVARCI, ALTINIŞIK, & TEKİN, 2017).

The way 3DHT operates is by creating the illusion of three-dimensional imagery; a light source is projected onto the surface of an object and scattered; a second light illuminates the object to create interference between both sources. Essentially, the two light sources interact with each other and cause diffraction, which appears as a 3D image (Ghuloum, 2010). (Fig.4)



**Fig.4.** Shows the Method of Forming Hologram

**Source:** Ramachandiran, C. R., Chong, M. M., & Subramanian, P. (2019)

The word, hologram is composed of the two Greek terms, "*holos*" for "whole view"; and gram meaning "written" (Ghuloum, 2010). This illusion technique was invented a long time ago by Dennis Gabor, a Hungarian physicist and electrical engineer, who is considered as the father of Holography. In 1947 he discovered the basic technology of holography while he was working on improving the electron microscopes. However, the 3D Holographic Technology (3DHT) was not fully exploited until 1962 when it was created by scientists of both the United States and the Soviet Union. Then 3DHT has advanced notably since the 1980s owing to low-cost solid-state lasers that became easily accessible for consumers in devices such as DVD players (Ghuloum, 2010; Saadé, Nebebe, & Kira).

Today, holograms are expanding their boundaries as one of the most world's attractive communication methods and became a common currency between many countries around the world (Saadé et al.). Live and life-size 3D TelePresence holograms can now interact with their remote spectators whether they are a band or artist acting on stage, a politician delivering a speech, presenters broadcasting a live program concurrently from different locations or a CEO (Chief Executive Officer) holding an interactive meeting with colleagues around the world (Kalansooriya et al., 2015).

#### **4.2. The Importance of 3DHT in Tour Guidance Training**

In this area, we can benefit from 3DHT in different ways (Saadé et al.). The tour guidance training is composed of three main elements: the lecturer, the educational setting and the student, all of these elements can benefit from 3DHT. Not only can an educator share information, but we can also use the technology to allow professionals and students from other regions of the world to "visit" our classrooms in 3-D form (Eschenbrenner, Nah, & Siau, 2008). Recent research has also shown that this new form

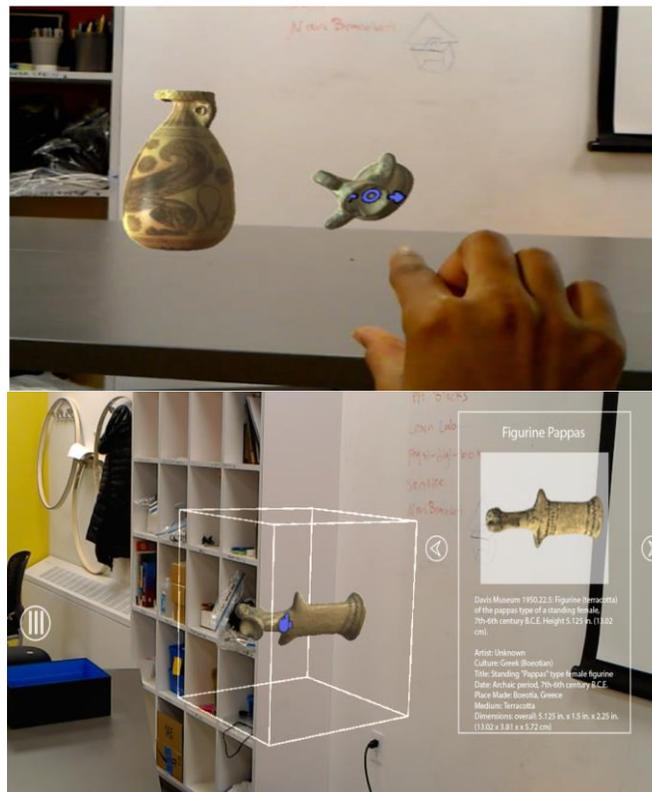
of interactive learning results in better retention and improves students' outcomes (Carter, 2015; Ramachandiran, Chong, & Subramanian, 2019).

The process goes a step beyond video conferencing, in that the hologram lecturer appears to be in the classroom, and can see and speak to the students as if they were all in the same room. (Ghuloum, 2010).

In tour guidance training, students should be divided to small groups to facilitate their orientation inside the archaeological site or museum. Here appears the role of the holographic assistant instructors who help the students with their needs and make sure that they achieve up to their maximum abilities.

This technique will be also very effective in the evaluation process of the student's performance as it enables the instructor to interact with students during their presentation to check the developing of their professional skills.

Hologram also allows the instructor to view the original museum collection artifacts within the context of the exhibition in the classroom, enables the students also to pick up, rotate, scale (Ghuloum, 2010), and select their own exhibition or customize an existing one by choosing objects from a virtual gallery and placing them within the physical world, and they can also request more information about any artifact in the collection (Pietroni, Ferdani, Forlani, Pagano, & Rufa, 2019; Pollalis, Fahnbulleh, Tynes, & Shaer, 2017). (Fig.5)



**Fig.5.** Holographic Museum Collection; to the Left the Student can Rotate any Artifact, to the right Display Additional Information about the Selected Artifact.

**Source:** Pollalis, Fahnbulleh, Tynes, & Shaer, 2017.

The lecturer can also bring famous characters from the past to life again to speak about themselves and/or explain something as an assistant teacher, in tour guidance training (Cairns & Cox, 2008). We can, for example bring the famous Howard Carter who discovered the magnificent tomb of Tutankhamun to tell the students about this great excavation and its stages, it is even possible to bring king Tutankhamun himself as a hologram guide to accompany students in a tour in the museum. This idea was presented by Ramy Hammady, a researcher in the university of Huddersfield, who developed a system called Museum Eye that has been successfully trialed at Cairo's Egyptian Museum (Hammady, Ma, & Powell, 2018). **(Fig.6)**



**Fig.6.** King Tutankhamun as a Hologram Guide

**Source:**<https://www.hud.ac.uk/news/2018/april/researchercreatestutankhamunhologramguideforcairomuseum/>

Designing holographic models of all important monuments and bringing them to the classroom will enable tour guidance students to walk through the archaeological sites to see its architecture, parts, and decorations. Some other sites can't be visited by the students because of its fragility, remoteness, difficulty of access, and risks associated with natural phenomena as being situated on high cliffs, in deep caves or underwater (Ahmed Mohamed Safy El Deen, 2019; Cassidy, Sim, Robinson, & Gandy, 2019). **(Fig.7)**



**Fig.7.** Holographic Model of Luxor Temple

**Source:** Ahmed Mohamed Safy El Deen, F. A. M. H. (2019)

It is amazing also that the 3DHT can be used to restore the parts of monuments that have been destroyed or stolen to see the building in its original status. (**Fig.8**)



**Fig.8.** To the left a Holographic Destroyed Monument, To the Right the Holographic Restored Model

**Source:** [https://www.academia.edu/30328321/Reality\\_-\\_Holograms\\_and\\_Cultural\\_Heritage](https://www.academia.edu/30328321/Reality_-_Holograms_and_Cultural_Heritage)

3D hologram technology application in the cultural heritage world, and especially in archaeology (Venditti & Mele, 2020), is very recent. In the near future it will be very effective in tour guiding practical training by offering convincing and realistic view to the user throughout attractive and efficient communication platform. The instructor and students can communicate and interact even though they are very far from each other (Kalansooriya et al., 2015).

## 5. Discussion and Conclusion

The usage of 3D reality technologies in education is in fact widespread and common for more than twenty years, but the evolution of the holographic telepresence technology has opened the doors to new possibilities of unimagined level of engagement and excitement to the learning process that attracts and encourages students (Venditti & Mele, 2020).

In the tour guidance training, we are dealing with human skills and competencies. There are three main elements that must be involved effectively to guarantee the better outcome. These are the lecturer, the student, and the suitable educational setting. By using 3DHT, it becomes possible to achieve the same goals of the training in real sites.

### **All the obstacles of place and time vanished through the: -**

**3D Holographic Lecturer** who interacts with students while they are at home; they can communicate together through presentations, questions, and dialogues.

**Active Student** who, by using 3D holographic technologies, can actually attend a live innovative field trip in a remote geographic location like a temple, a tomb, or even a submerged monument. He can, for example, dive and walk through the streets and corridors of the submerged monuments of Alexandria city, which is actually inaccessible in real life.

**Whole new 3D holographic educational setting** customized by lecturers according to his needs and expected goals. They will have the ability to literally bring all parts of their lectures to life including persons and places to enhance the whole educational process. Students can visit the sites, talk to people, hear sounds and even smell the fragrances of the past; in short, students can go back in time in 3D, recreating old situations and events. The mummification in ancient Egypt is an amazing application of this technology, as students can touch the 3D mummies, which are not allowed to be touched in real life (Cassidy et al., 2019), examine the bandages, and smell the substances that are supposed to be used in this sacred rite.

However, like any technology, 3DHT, has some disadvantages. First, there is the problem of price. To use this technology perfectly, we will need a screening room with compatible lighting and video technology which costs around 150,000 US dollars (Bobolicu, 2009; (Saadé et al.).

Secondly, 3DHT needs to be connected to a fast internet, next-generation broadband Internet network with a minimum guaranteed constant speed of 20 megabits per second (Ghuloum, 2010).

Nevertheless, Ian O'Connell, director of Musion, a company that is a pioneer in the use of live hologram technology, believes that in the near future, 3DHT will be the

backbone in many sectors, perhaps even within the next five years. He stated that “*It’s going to necessitate a change in architectural design for residential homes for it to be embraced fully,*” he added “*It’s going to need a room that can accommodate the screening and delivery technology, but I think we’re five years away from holograms being a ubiquitous, affordable tool*” (Ghuloum, 2010). According to Pew Research Center report (2019), there are almost five billion people who have mobile devices and more than half of them are smartphones. This broad using of mobile devices like smartphones specially among younger people could be the next step of combining holograms with mobile devices to provide access to this online education technology (Venditti & Mele, 2020).

In conclusion, despite of its high cost, lack of infrastructure and technical support in our educational institutes, 3DHT becomes an essential part of the educational process all over the world especially for the courses that depend on practical training and during exceptional circumstances like wars and epidemics, which obstruct the achievement of educational goals. Consequently, the integration of 3DHT in the distance learning official platform of tour guidance departments became a necessity; otherwise, we will face the bigger problem of the inadequate performance of unqualified tour guides who will negatively influence the tourism sector in Egypt.

## References

- Ahmed Mohamed Safy El Deen, F. A. M. H. (2019). Using Hologram Technology in Constructing Virtual Scenes in Archaeological Sites to Support Tourism in Egypt. *Journal of Architecture, Arts and Humanities*, 5(20). doi:0.12816/mjaf.2019.12483.1249
- Al Jahwari, D. S., Sirakaya-Turk, E., & Altintas, V. (2016). Evaluating communication competency of tour guides using a modified importance-performance analysis (MIPA). *International Journal of Contemporary Hospitality Management*.
- Alhayki, Z., & Shah, Z. (2016). Use of Tangible Holograms in Education & Communication. *International Journal of Research and Analytical Reviews*, 3(1), 24-27.
- Ap, J., & Wong, K. K. (2001). Case study on tour guiding: Professionalism, issues and problems. *Tourism management*, 22(5), 551-563.
- Barrett, D. J. (2006). Strong communication skills a must for today’s leaders. *Handbook of business strategy*.
- BÜYÜKŞALVARCI, A., ALTINIŞIK, İ., & TEKİN, A. G. Ö. (2017). USAGE OF INTERACTIVE TECHNOLOGIES IN TOURISM GUIDANCE EDUCATION A RESEARCH ON EDUCATIONAL INSTITUTIONS AT THE LEVEL OF BACHELOR DEGREE. *Selçuk Üniversitesi Sosyal ve Teknik Araştırmalar Dergisi*(13), 1-14.
- Cairns, P. E., & Cox, A. L. (2008). *Research methods for human-computer interaction*: Cambridge University Press.

- Carter, E. (2015). USING HOLOGRAMS AND MOBILE TECHNOLOGY TO INCREASE EDUCATIONAL ACCESS. *Curriculum Design for the Future*, 4(43), 129.
- Cassidy, B., Sim, G., Robinson, D. W., & Gandy, D. (2019). A virtual reality platform for analyzing remote archaeological sites. *Interacting with Computers*, 31(2), 167-176.
- Casson, L. (1994). *Travel in the ancient world*: JHU Press.
- Chan, A., & Baum, T. (2004). The impact of tour guide performance on tourist satisfaction: A study of outbound tours in Hong Kong.
- Chang, J. (2006 ). Customer satisfaction with tour leaders' performance: A study of Taiwan's package tours. *Asia Pacific Journal of Tourism Research*, 11(1), 97-117.
- Christie, M., & Mason, P. (2008). The good guide: identifying and engendering generic skills in the training of tourist guides *Tourism development revisited: Concepts, issues and paradigms* (pp. 341-350): Sage Publications Ltd.
- Christie, M. F., & Mason, P. A. (2003). Transformative tour guiding: Training tour guides to be critically reflective practitioners. *Journal of Ecotourism*, 2(1), 1-16.
- Cohen, E. (1985). The tourist guide: The origins, structure and dynamics of a role. *Annals of tourism Research*, 12(1), 5-29.
- De Sélincourt, A., & Marincola, J. (1996). *The histories*: Penguin Classics.
- El-Sharkawy, O. K. (2007). Exploring knowledge and skills for tourist guides: evidence from Egypt.
- Eschenbrenner, B., Nah, F. F.-H., & Siau, K. (2008). 3-D virtual worlds in education: Applications, benefits, issues, and opportunities. *Journal of Database Management (JDM)*, 19(4), 91-110.
- Ghuloum, H. (2010). *3D hologram technology in learning environment*. Paper presented at the Informing Science & IT Education Conference.
- Gleb, B. (2017). VR vs AR vs MR: Differences and real-life applications: Hämtat från <https://rubygarage.org/blog/difference-between-ar-vr-mr>.
- Hammady, R., Ma, M., & Powell, A. (2018). *User Experience of Markerless Augmented Reality Applications in Cultural Heritage Museums: 'MuseumEye' as a Case Study*. Paper presented at the International Conference on Augmented Reality, Virtual Reality and Computer Graphics.
- Heaton, J. (1975). *Writing English language tests: A practical guide for teachers of English as a second or foreign language*: Longman
- Holmberg, B., Bernath, H., & Busch, F. W. (2005). *The evolution, principles and practices of distance education* (Vol. 11): Bis.
- <http://www.wftga.org/tourist-guiding/what-tourist-guide>
- (2003).

- <https://www.interpnet.com/nai/interp/About/What is Interpretation /nai/ About/what is interp.aspx>? What is Interpretation?
- Jonasson, M., & Scherle, N. (2012). Performing co-produced guided tours. *Scandinavian Journal of Hospitality and Tourism*, 12(1), 55-73.
- Kalansooriya, P., Marasinghe, A., & Bandara, K. (2015). Assessing the Applicability of 3D Holographic Technology as an Enhanced Technology for Distance Learning. *IAFOR Journal of Education*.
- Knapp, M. L., Hall, J. A., & Horgan, T. G. (2013). *Nonverbal communication in human interaction*: Cengage Learning.
- McGrath, G. (2003). *Myth, magic, meaning and memory. Mentor tour guides as central*
- *to developing integrated heritage tourism at archaeological sites in Cusco, Peru*. Paper presented at the the Proceedings of the 12th International Tourism and Leisure
- Symposium,, Barcelona.
- Milgram, P., & Kishino, F. (1994). A taxonomy of mixed reality visual displays. *IEICE TRANSACTIONS on Information and Systems*, 77(12), 1321-1329.
- Morse, M. A. (1997). All the world's a field: a history of the scientific study tour. *Progress in Tourism and Hospitality Research*, 3(3), 257-269.
- Peña-Rios, A., Callaghan, V., & Gardner, M. (2018). Multi-User Mixed Reality Environments for Distance Learning *Integrating Multi-User Virtual Environments in Modern Classrooms* (pp. 208-239): IGI Global.
- Pengshun, Z. (2014). Design of Virtual Reality Guide Training Room Based on the Modern Education Technology *Frontier and Future Development of Information Technology in Medicine and Education* (pp. 1221-1227): Springer.
- Pietroni, E., Ferdani, D., Forlani, M., Pagano, A., & Rufa, C. (2019). *Bringing the Illusion of Reality Inside Museums—A Methodological Proposal for an Advanced Museology Using Holographic Showcases*. Paper presented at the Informatics.
- Pollalis, C., Fahnbulleh, W., Tynes, J., & Shaer, O. (2017). *HoloMuse: Enhancing engagement with archaeological artifacts through gesture-based interaction with holograms*. Paper presented at the Proceedings of the Eleventh International Conference on Tangible, Embedded, and Embodied Interaction.
- Pond, K. L. (1993). *The professional guide: Dynamics of tour guiding*: Van Nostrand Reinhold Company.
- Rabotic, B. (2010). *Professional tourist guiding: The importance of interpretation for tourist experiences*. Paper presented at the 20th Biennial International Congress: New Trends in Tourism and Hotel Management.
- Ramachandiran, C. R., Chong, M. M., & Subramanian, P. (2019). 3D hologram in futuristic classroom: a review. *Periodicals of Engineering and Natural Sciences*, 7(2), 580-586.

- Saadé, R. G., Nebebe, F., & Kira, D. *eLearningCampus: A Decade of Lessons Learned*. Paper presented at the I n SITE 2014: Informing Science+ IT Education Conference.
- Schmidt, C. J. (1979). The guided tour: Insulated adventure. *Urban life*, 7(4), 441-467.
- Shakil, A. F., & Hafeez, S. (2011). The need and importance of field trips at higher level in Karachi, Pakistan. *International Journal of Academic Research in business and social sciences*, 2(1), 1.
- Steiner, C. J., & Reisinger, Y. (2004). Enriching the tourist and host intercultural experience by reconceptualising communication. *Journal of Tourism and Cultural Change*, 2(2), 118-137.
- SUARDHANA, I. N., Nitiasih, M. P. P. K., & Jaya, M. P. I. N. A. (2013). The Communication Skills of Tour Guides in Handling Customers. *Jurnal Ilmiah Pendidikan dan Pembelajaran Ganesha*, 2, 207034.
- Subrahmanyam, C., & Ravichandran, K. (2013). Technology & online distance mode of learning. *International Journal of Humanities and Social Science Invention*, 2(1), 5-13.
- Tilden, F. (1977). *Interpreting our Heritage* (E. B. Craig Ed. 3rd ed.): The University of North Carolina Press.
- Vásquez Salazar, É. (2014). A way to change learning: Field trips as a university pedagogical resource. *Revista Electrónica Educare*, 18(1), 57-76.
- Venditti, C. P., & Mele, P. (2020). How to Combine Virtual and Reality in Archaeology Communication: A Brief Overview of Mixed Reality and “Its Surroundings” *Developing Effective Communication Skills in Archaeology* (pp. 245-258): IGI Global.
- Wang, M., Callaghan, V., Bernhardt, J., White, K., & Peña-Rios, A. (2018). Augmented reality in education and training: pedagogical approaches and illustrative case studies. *Journal of ambient intelligence and humanized computing*, 9(5), 1391-1402.
- Weiler, B. (2016). The contribution of Australia-based researchers to tour guiding. *Journal of Hospitality and Tourism Management*, 26, 100-109.
- Weiler, B., & Black, R. (2015). *Tour guiding research: Insights, issues and implications* (Vol. 62): Channel View Publications.
- Xiao, J. J. H. (2002). In J. J. H. Xiao (Ed.), *Encyclopedia of tourism*
- Springer Reference.

## استخدام تقنية الهولوجرام ثلاثية الأبعاد في برنامج التعلم عن بعد لتعزيز المهارات المهنية لطلاب الإرشاد السياحي

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### المفص

التدريب المهني هو حجر الزاوية في العديد من الصناعات وخاصة تلك التي تعتمد بشكل رئيسي على العنصر البشري مثل السياحة. يعتبر المرشد السياحي من أهم العاملين في مجال السياحة، ووفقاً لأدائه وتفاعله مع السياح تتكون صورة الوجهة بشكل إيجابي أو سلبي. وبناء على ذلك، كان من الضروري إعطاء اهتمام كبير لتعليم المرشد السياحي وتدريبه من خلال معاهد متخصصة رسمية لتعزيز المهارات المهنية للمرشدين السياحيين. وعادة ما يتم تدريب طلاب الإرشاد السياحي بمرحلة البكالوريوس من خلال الرحلات الميدانية في المواقع الأثرية والمتاحف كفرصة لاكتساب الخبرة المهنية، إلا أنه في الظروف الحالية من الحجر الصحي الكامل نتيجة جائحة الكورونا، أصبح من الضروري البحث عن نهج تكنولوجي آخر من خلال منصة التعليم عن بعد لتحقيق الأهداف التعليمية للمحاضرات التدريبية. وتهدف هذه الدراسة إلى تحديد مدى إمكانية استخدام تكنولوجيا الهولوجرام ثلاثية الأبعاد لتعزيز المهارات المهنية لطلاب الإرشاد السياحي، واعتبار هذه الطريقة المبتكرة كمنهج بديل للتعليم والذي يمكن استخدامه في الظروف المماثلة.

### معلومات المقالة

#### الكلمات المفتاحية

تكنولوجيا الهولوجرام؛  
الدراسة عن بعد؛ مهارات؛  
الإرشاد السياحي؛ طلاب  
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