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New Technologies in Human-Driven Professions: The Impact of Digital Transformation for Tourist Guides

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Abstract—Qualified tourist guides are professionals in cultural, technical, and scientific mediation and they work mainly in public spaces, museums, and historical monuments. The digital transformation of the 2010s has revolutionised the approach to knowledge and has led to a change in the role of qualified tourist guides. By this we mean the explosion of Wikipedia and social networks, as well as the introduction of multimedia in museums. The effects of the current health crisis (Covid) have been added to all this to impose profound changes and irreversible developments. Our reflection is about, on one hand, the way in which the qualified tourist guides can rely on digital technology during a tour and, on the other hand, the new skills that student guides must acquire during their scholarship. We seek to understand where and how digital technology can be an ally of qualified tourist guides without replacing them. We will rely on the professional degree of qualified tourist guides (in French: *guides-conférenciers*), prepared in our Gustave Eiffel University, as well as on our connections with the National Federation of Qualified Tourist Guides, to analyse the digital approach of future professionals in the sector. We also propose perspectives for future works.

Keywords – *Tourist Guide; digital tools; cultural mediation; museums; situational iceberg.*

I. INTRODUCTION

Since 2010, the tourism sector has been facing a profound digital transformation and has also hit the shock of a health crisis. This is particularly true for qualified tourist guide's profession [1]. We propose to analyse the evolution of the profession of qualified tourist guide, or in French *guide-conférencier* [2], in the global context of digital transformation and Covid pandemic. The digital transformation represents both a threat and a great opportunity for the profession in the perspective of J. Ellul's "ambivalence of technology" analysis [3]. A threat because, as we shall see in Section III, it can be seen as a new competitor to the tour guides as long as the digital replaces

the human. At the same time, digital transformation becomes an opportunity to develop new skills to broaden the scope of business or to increase one's own customer base.

After an introduction (Section I), we explain our scientific positioning (Section II), our methodology (Section III) and we give an overview of human mediation (Section IV). Then, we outline the use of digital new tools in the mediation (Section V). Finally, we analyse the future of qualified tourist guides facing Information and Communication Technology (ICT) (Section VI) and we give a conclusion with perspectives for future works (Section VII). Observing our students over the last few years and following the experience of a qualified tourist guide, we realised that it became necessary to re-think the profession of tourist guide by integrating digital tools. Through their master's dissertations and their internships, our students reflect on how to integrate digital tools in their job. We intend to analyse their approach of this subject during their studies and also after, when they will start to work. We want to understand in which way digital technology can be an ally of a qualified tourist guide and will try to provide an overview of the current situation.

The decree n. 2011-930 of August 1st 2011, relating to persons qualified to conduct guided tours in museums and historical monuments [4], has modified the status of the qualified tourist guide. From now on, the law recognises only one professional figure that groups together the four professions that existed until 2011 (regional guide-interpreter, national guide-interpreter, guide-lecturer of the Cities and Countries of Art and History, national lecturer): the qualified tourist guide or in French *guide-conférencier*. Obtaining the professional license (Fig. 1), which is valid throughout France, is subject to the validation of a professional bachelor's degree or a master's degree if the following courses units have been validated: tourist guide skills, professional practice, and modern foreign language. The professional bachelor's degree is characterised by its multidisciplinary approach. The bachelor's degree proposed at the Gustave Eiffel University, for example, focuses on

three fundamental aspects: history of art, cultural heritage and general knowledge; practical aspects with guiding techniques and oral mediation of the public; professional aspects of communication, marketing and occupational integration. The aim is to provide students with tools allowing to deal with any type of situation and being able to practice their profession independently or in collaboration with tourist offices and other tourist or cultural establishments, as well as connecting and networking with professionals of the National Federation of Qualified Tourist Guides [5].

The profession of qualified tourist guide is in constant evolution. It requires constant adaptation to the various audiences and the context or subject of the visit. This is especially true with the arrival of new technologies in the 2010s, which have revolutionised the approach to knowledge and have led to a change in the role of the qualified tourist guides. Three stages in the evolution of the profession of qualified tourist guide allow us to better understand its link with the evolution of the Information and Communication Technology (ICT). The first one is about the operating mode of the mediation of the public in general and is related to the evolution of public's expectations. The second is more specific to the content of the tourist guide's presentation, which has evolved with the availability of online information. The last stage combines the two previous ones, gathered in the digital solutions developed in the field of public mediation.

In the following sections, we will detail these three stages in order to understand how the profession of qualified tourist guide must evolve and adapt to the new socio-cultural context. We will analyse the context of the professional bachelor's program of *Guide-Conférencier* at Gustave Eiffel University, and more specifically the relationship of future guides to the digital world. These analyses will be carried out using an information and communication sciences approach.

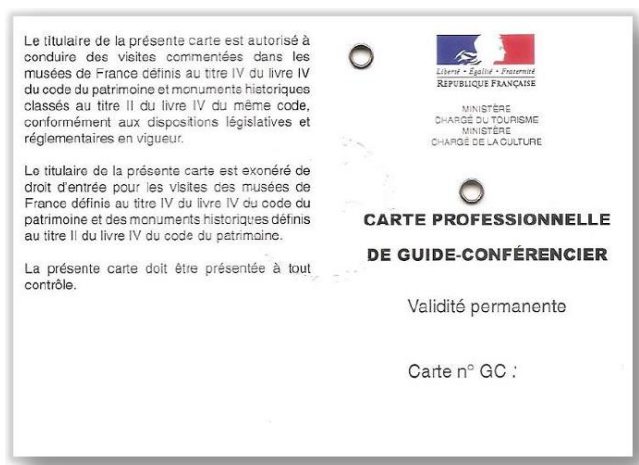


Figure 1. Example of professional license for qualified tourist guides. Credits: photo taken on the website of Ancovart <https://www.ancovart.fr/la-profession/reglementation>

II. SCIENTIFIC POSITIONING: CONVERGENCE BETWEEN LINK, MEANING ACTION AND KNOWLEDGE

This communication associates two teacher-researchers, one in information and communication sciences, the other in computer science, a research engineer working on cultural heritage and a qualified tourist guide, teacher in the same University. They constitute a large part of the supervision and teaching staff of the *Guide-Conférencier* professional bachelor's degree at Gustave Eiffel University. This work is placed in a perspective of research-action and transdisciplinarity, with the construction of knowledge for action starting from new uses of socio-technical devices.

Our scientific position is in the field of information and communication sciences (Fig. 2), within a research team: DICEN-IdF (Information and Communication Devices in the Digital Era). We therefore have an approach that integrates the dimensions of communication (exchanges, interactions), uses and production of data and the use of socio-technical devices. We position according to F. Bernard [6] insisting on the convergence of link, meaning, action and knowledge.

Our work is mainly action research, in particular to analyse activity situations, with the dimension of social constructivism: construction of social reality by the actors. We thus integrate the "situational and interactionist semiotics" approach proposed by A. Mucchielli [7], with the dimension of feelings, emotions and the body as social media, as proposed by F. Martin-Juchat [8], which is particularly important in times of health crisis.

From a methodological point of view, we are depending on the context, in situations of "participant observation", but more often in "observer participation", by being very involved in the follow-up of students in professional situations or in professional activities (all range of touristic and cultural structures).

This double positioning, which is also a positioning of theoretical reflection and strong practical involvement, allows us to be particularly proactive in a reflection on the employability of new graduates and the evolution of this profession of mediation for the development of cultural and tourist heritage in the territories. In an approach of economic and territorial intelligence (Bourret-Fabry-Da Re, 2020 [9]), we insist on the reliance (links, interactions) to participate in the resilience of territories, in the double context of digital transformation and health crisis. As in idea to search for new ways in Competitive or Economic Intelligence [10].

Reliance and resilience by insisting on the informational and communicational stakes of activity situations, to improve the added value and employability of the qualified tourist guides for a better adaptability to meet the expectations of new audiences, and to be much more active in their stays and visits and much more sensitive to the authenticity of the territories and to personalised experiences.

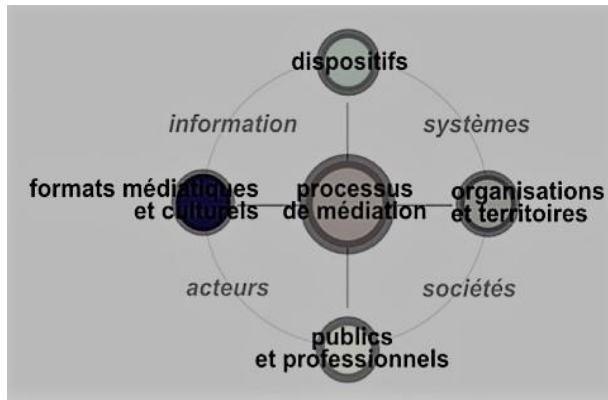


Figure 2. Diagram representing key words of Information and Communication Sciences. Credits: Sidonie Gallot, « Les enjeux d'une cartographie des SIC pour la discipline et les unités de recherche », *Revue française des sciences de l'information et de la communication* [on line], 5 | 2014, DOI : <https://doi.org/10.4000/rfsic.1191>

III. METHODOLOGY

The arrival of new technologies has rapidly interested the tourism sector by making it enter "the era of hyper connectivity, but also of hyper socialisation" (Safaa, Oruezabala and Bidan, 2021 [11]). In this context, the tourist has everything to gain. Increasingly technophile, learning and enterprising, he seizes the technological context to gain freedom of action. The digitisation of tourism has *de facto* enabled tourists to construct their journeys autonomously, "thanks to shared content on the Internet and social networks of billions of users" (Salomone, Haddouche 2021 [12]).

This development has also opened the door to individuals wishing to provide tourism services. Beyond Airbnb, we have a number of practices such as couchsurfing, home exchange, free accommodation for services, etc.

The qualified tourist guide is also affected by this personalisation of tourism. On the one hand, the Internet allows us to have access to all types of information, to build our own tour and to have access to the information that interests us. In this way, the tourist selects only what he or she wants to know, with the risk of missing out on important or even fundamental notions for understanding the place visited. On the other hand, the development of slow tourism has encouraged the multiplication of greeters. These are local people who offer guided tours, often free of charge. So, if for a certain public, a guide can be considered useless, for another it can be seen as not authentic.

"Alternative tourism" seeks out places that are less well known, far from the traditional tourist circuits and therefore considered more authentic. In general, the choice of destination or tour is closely linked to the experience that a place or site is able to offer.

Finally, qualified tourist guides are seeing new competitors appear in the panorama of guided tours. A constant search for authenticity may lead to a preference for an experience with locals or non-professionals, rather than the knowledge of an experienced guide. Concerning the digital aspect, there are not only audio guides and digital technology in museums or historical monuments, but also and above all the Internet. The tourist, accustomed to checking every piece of information, will not lose the opportunity to question the guide's discourse, or even to cast doubt on it, more or less cordially. We can consider all this to be part of the problems of the guiding profession which are difficult to identify, or even recognise, but which are increasingly forcing professionals to rethink their approach to the client.

When we talk about new technologies associated with cultural activities, we should not think only of online booking platforms, tourism promotion websites, etc. In the age of the "intelligent tourist", making oneself known and knowing how to promote oneself is fundamental. Being present on social networks, having an interactive and always updated website, becomes then mandatory. This applies to tourist sites, heritage sites, museums, but also to professionals who provide services to tourists and, in particular, qualifies tourist guides.

We believe that qualified tourist guides should not only think about digital in the context of tour construction, but also as a tool to promote themselves (putting themselves on a show) and find new clients. Qualified tourist guides often have a self-employed status which allows them to work with companies or tourist offices and, at the same time, have their own clientele. If we think about our "intelligent tourist", he builds his trip thanks to the information found on the internet and by consulting the reviews. Similarly, the "alternative tourist" may not choose an agency that offers tours for mass-market tourists.

These types of visitors based their choices on the idea of having a unique and personalised experience. A qualified tourist guide must therefore know how to master social networks in order to make his offer known and enlarge his audience. In a context that has been able to quickly appropriate new technologies, guide-lecturers must now integrate into their skills those related to digital uses.

The National Federation of Qualified Tourist Guides carried out a survey of guides holding a professional card in 2020, in order to "establish a general profile of the professional and social situation of qualified tourist guides in France before the Covid-19 epidemic and to have real and recent data for a year of normal activity" (Fromont, Villepelet, 2021 [13]), that is 2019. The number of active qualified tourist guides was estimated to be between 3500 and 4500, but the answers were only 1360. This survey shows that the profession is predominantly female (79%) and that about half of the respondents have been in the profession for less than 10 years (Fig. 3). On the other hand, this does not translate into relatively young professionals, as the average age was estimated at 46 years (Fig. 4). However, this study does not ask the question of the use of digital technology within a guide's activity. Similarly, a

second survey carried out in 2021 [14] to show the situation of precariousness due to Covid-19, does not attempt to see whether qualified tourist guides have used digital technology to continue their work. Indeed, it seems that the National Federation of Qualified Tourist Guides does not really consider the approach to new technologies as an essential aspect of the guiding profession, nor a skill to be acquired.

In order to confirm or refute this hypothesis, we would like to finance a survey among qualified tourist guides on the use of digital technology. We would also like to check whether the Covid crisis has been a driving force for change in this direction or whether the use of certain practices is considered to be limited to the crisis period.

More specifically, we would like to work on the invisible side of work activities from the perspective of "actor-network theory", "sociology of translation" [15] and "dark side studies" [16] by considering an "iceberg of activity" approach, in our case "tour guide's situational iceberg", in order to highlight the invisible or dark side of these situations, using a participatory research methodology currently being developed.

The national survey among practising qualified tourist guides will enable us to build a reliable and up-to-date framework of the use of digital technology and the difficulties they encounter in their work.

Then, based on interviews and participant observations, we plan to study the invisible, i.e. non-formalised, side of the guides' interactions in an activity situation, interactions with their clients, but also with the socio-technical devices, such as tablets or touch screens. We will also be interested, in the perspective notably traced by V. Carayol and A. Laborde [17], to study the resistances of the guide-lecturers to the use of new technologies by proposing a typology ranging from enthusiastic users to radical refractors.

We want to establish a grid of user types that will serve as a comparison throughout our research. At the same time, we will survey our students every year for at least 5 years. This will allow us to see how the new generations relate to the new technologies and whether there are any changes in the pyramid of user types.

At the end of these surveys, we will have the situation of qualified tourist guides in activity and that of the students, future guides; this will allow us to advance reflections in a comparative way.

Concerning the new generations, we will also deploy a participant observation approach by following four students of the class of 2021-2022 in the first years of their activity as qualified tourist guides. As with the survey, each year we will follow between two and four new guides in their profession. From this perspective, we will draw on the work of A. Mucchielli on "situational and interactionist semiotics" [7] and of M. Zacklad on the "semiotics of cooperative transactions" [18] by proposing to add this hidden dimension of the activity. In our analysis of the 'situational iceberg' of guiding activity, we will attach particular importance to trying to understand the issue of emotions which, largely invisible, contributing to the construction of the visiting situation as a whole.

To summarise, our study is developed in several stages:

1. Survey on the use of digital technology by active qualified tourist guides and drafting of a typology grid of digital users.
2. Analysis of the existence of digital resistances and their typologies.
3. Situational iceberg and participant observation of guiding activity.
4. Survey of *LP Guide-Conférencier* students on their relationship with digital technology (5 year period).
5. Question of emotions in a visiting situation.

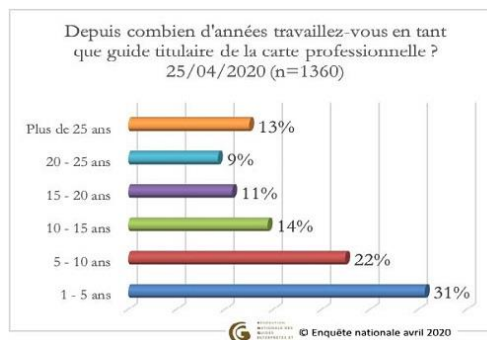


Figure 3.

Figure 3. Years of professional activity. Credits 2021 survey of the National Federation of Qualified Tourist Guides (FNGIC), carried out on the initiative of FNGIC. <https://www.fngic.fr/fr/actualites/enquete-nationale-sur-metier-guide-conferencier>

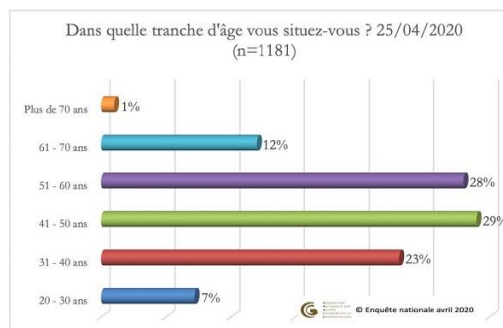


Figure 4. Age range of the respondents. Credits 2021 survey of the National Federation of Qualified Tourist Guides (FNGIC), carried out on the initiative of FNGIC. <https://www.fngic.fr/fr/actualites/enquete-nationale-sur-metier-guide-conferencier>

IV. OVERVIEW AND EVOLUTION OF HUMAN MEDIATION

The scope of intervention of a qualified tourist guide is very vast and covers the whole of the French cultural and natural heritage.

In France, qualified tourist guides are the only ones allowed by the law to conduct visits and lectures in museums and historical monuments (except for curators and teachers in a certain extend). We therefore chose to focus on

museums and historical monuments where the digital element is increasingly important.

The functions of the museum, as we recall, are exhibition, conservation, scientific study and animation. Museums bring their collections to life and offer different approaches to reading them for different types of visitors. Animation acts as a driving force in the museum institution and can take various forms: educational activities, guided tours, lectures, concerts, workshops, events and demonstrations of all kinds [19]. Consequently, mediation approaches, whether human or digital, are based on the knowledge of public's expectations. In fact, the *modus operandi* of mediation professionals has evolved to adapt to the expectations of the public by moving from the simple discourse (from "saying") to action (to "doing"), with the rise of performative and participative interventions. As Stéphanie Airaud reminds us, "The mediator's discourse proposes to go beyond the guided tour to play on the springs of aesthetic experience. Embodied by the lecturer for an audience, this speech uses taste, sound, imagination, fiction, the illusion of image and word to invent a performative maieutic. It therefore seems possible to move from saying to doing" [20]. We consider here "*dire*" (say) as an oral transmission of a discourse on the artistic works, and "*faire*" (do) as the creation of a situation, a space for play and the advent of a form. Many guides and lecturers then invented new forms of mediation, in which the public more easily speaks up during debates, physically invests the tour framework in artistic forms (dance, poetry, meditation, etc.) or playful forms (photo rally, treasure hunt). The most important thing is to become an actor (or "spect-actor") of a new type of participative visit.

The development of digital technologies has made it possible to go further in the reflection on mediation, making it possible to offer immersive tours. Exhibitions designed in this way help visitors to immerse themselves in the artwork and to contemplate it by mobilising several senses (100% immersive).

The interactive content supports the exhibited object and offers easier and more dynamic access to information than the classic panels. It is undeniable that this type of installation facilitates the approach to culture, but when the pedagogical element is absent, the risk (for a non-educated public) is that the experience is focused entirely on emotions and not also on reflection and knowledge.

The discourse of tour guides has also evolved with the increasing access of the public to information. From the mid-2000s onwards, Wikipedia revolutionised public access to online information. As its diversity and reliability grew, tourist guides gradually lost their status as knowledge holders. They questioned the content of their discourses and sought to offer more reflection and perspective in addition to the raw information. Since the explosion of social networks in the mid-2010s, the youngest users now rarely consult traditional media and instead lock themselves into information loops. For these audiences, the discourse of the qualified tourist guide has evolved further with the return of popularisation content combined with increased vigilance on discernment since the explosion of fake news from 2016.

Qualified tourist guides therefore find themselves having to justify their discourse and their competence to a public that believes itself to be increasingly prepared and much better informed thanks to the Internet.

V. DIGITAL, NEW TOOLS FOR MEDIATION IN THE MUSEUM AND PUBLIC SPACE: THE THIRD STAGE IN THE EVOLUTION OF THE TOURIST GUIDE PROFESSION

Our reflection here is about the way in which the qualified tourist guide can rely on digital technology during a guided tour. We therefore exclude the use of digital technology for communication and marketing purposes [21]. The same applies to creative content of a cultural and immaterial nature which excludes *de facto* human mediation (e.education/EdTech, video games, digital publishing, digital press, 3D animation, virtual reality, augmented reality, music, audiovisual, radio, television, cinema).

We will try to show how digital can be a complementary tool for guides without trying to replace them. The Covid 19 pandemic and its many lockdowns have proved the need of human relationships and interactions in education and leisure activities. Hence the importance of closely associating and balancing the level of intervention of the digital world and the human in the mediation with the public. We can define three levels of intermediation in which digital takes a more or less important place.

In 100% immersive (fig. 5), the public wanders through spaces with high level of scenography which use interactive digital tools in different contexts and for different purposes and where guides don't have a lot of opportunities for their intervention. The first type offers immersive exhibitions of digital creations on artistic themes, such as the *Atelier des Lumières* [22] in Paris. The second type offers a tour combining immersive content and varied interactive digital content with the aim of facilitating the understanding of a subject. This is the case of the *Château d'Auvers sur Oise* [23] focusing on 19th century art. In a constrained tour, visitors wander from room to room interacting with various contents and operating modes. It should be noted that this type of mediation can be very useful for people with motor or visual and hearing disabilities...

Finally, the third type makes use of new technologies as an innovative positioning in terms of product, which enables it to stand out in the cultural offer of a destination. This is the case of the *Hôtel de la Marine* in Paris [24], which opened in 2021 and offers an immersive tour within highly planned environment and constrained pathway using various devices to enhance the visitor experience.

Some cultural places offer interactive or immersive contents while allowing the guide to intervene at key moments in the visit. This is the case at the *Cité des Sciences et de l'Industrie* in Paris (Fig. 6) [25], where permanent and temporary exhibitions are accessible on their own or with a guide. In this case, it is necessary for the guide or scientific mediator to be aligned with the imposed scenography by becoming familiar with contents and

operating modes of the digital tools in order to integrate them into his tour and its discourse. Consequently, he must be a specialist in the subjects covered in order to be able to deliver the necessary information, answer to certain questions from the public and achieve an optimal customer experience.

The third level of intermediation takes place in environments with lesser scenography and leaves much more opportunities to the guide to integrate digital technology into his visit. This is the case of the *Sainte Chapelle* in Paris [26], which has a freely accessible interactive digital table offering 3D reconstructions of the place and its surroundings during the history. It is large enough for a dozen of people to gather around and can easily be used during the visit to support the guide's presentation. Augmented reality offers a significant cognitive support in understanding and reinforcing the content delivered by the guide. Here again, the guide must be familiar with the contents and functionalities of the tool in order to be able to integrate them perfectly into his tour scenario. Similarly, the *Conciergerie* in Paris offers its visitors *histopads* [27] (Fig. 7), which provide 3D reconstructions of the site, also in augmented reality, accompanied by written information. These can easily be integrated into a tour in which the guide will find in this tool an ally enabling him to evoke the atmosphere of a place that is now not so furnished and decorated.

In these places, the digital visit materials are very often designed and produced without taking the guide into account, not involving him into the creative, design and planning process. Even if, for some museums, guided tours represent a less important part in terms of attendance than the self-guided tours for which these tools are designed, we can only encourage a dialogue in which museums consults its guides or mediators for the selection of digital tools and the drawing up of specifications for the contents and operating methods. The objective is to meet the needs of the public in a guided tour situation and to offer the guide a better appropriation and a more relevant integration of the tool in his visit according to contents and operating methods that are adapted to his visit.

The emergence of digital technology must be integrated into a perspective of human interaction to encourage the creation of new services. The 100% immersive, in particular, obliges the actors of cultural and scientific mediation to a new approach of service definition and guides more precisely to an in-depth reflection on how to give a new added value to their profession.

Despite the interest and progress brought by the variety of digital tools, we do not think that 100% digital is the most relevant approach in terms of services, public mediation, and product. In the same way that we have integrated the hybrid into professional, medical or relational perspectives, human mediation must remain at the centre of these approaches, and this is why we propose to integrate the expertise of qualified tourist guides into the design of digital tools. In the graph below (Fig. 8) we show the difference between opportunities of mediation and easiness of mediation according to the degree of digitization:

- The opportunities (dotted line) exist as soon as there is at least one digital tool, and they decrease with the intervention of immersive content and scenography

- The easiness for the guide is optimal when he has more variety of choice of digital supports as he is not forced to use the one and only available which may not be relevant for his visit.

Easiness starts to drop as soon as the content is immersive (histopad for example with its predetermined immersive scenario), and collapses in an immersive scenographic environment.

Note that the difficulty of mediation also depends on the complexity of the scenario of the digital tool, which the guide should manage and be comfortable with to integrate it in his visit.



Figure 5. Atelier des lumières, Paris. Credits: photo taken on the Atelier des lumières' website <https://www.atelier-lumieres.com/fr>



Figure 6. View of the permanent exposition of the Cité des Sciences et de l'Industrie Museum in Paris. Credits: photo taken on the museum's website <https://www.onetwotrips.com/cite-des-sciences-la-villette/>



Figure 7. Histopad of the Conciergerie Palace in Paris. Credits Musée de la Conciergerie <http://www.paris-conciergerie.fr/Actualites/Decouvrez-la-Conciergerie-avec-l-Histopad>

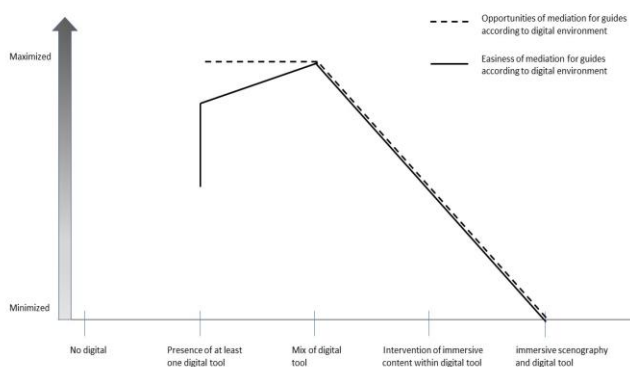


Figure 8. Difference between opportunities of mediation and easiness of mediation according to the degree of digitization.

VI. FUTURE TOURIST GUIDES-FACING ICT

The digital media present in the museums are designed to accompany an individual visit and provide in-depth information that the visitor must be able to use independently. The mediation offered by the museum is not necessarily intended to use these media either. At the same time, within the framework of our bachelor's degree, we have noticed that until now future qualified tourist guides have not shown a significant interest in new technologies, but this is changing very quickly with the renewal of generations. The profession of guide is still largely perceived in a purely interactional reading without measuring the interest and need of the integration of new technological tools. The relationship with digital technology is still limited to treasure hunts or to a complementary communicative role, which may raise questions about the employability of future tourist guides, particularly regarding

the acquisition of new segments of the public who are increasingly equipped with tools and applications that can be used to carry out a tour otherwise perceived as basic. Furthermore, appropriating new technologies would allow guides to position themselves in the market of 3D reconstructions and 100% immersive, thus ensuring the continuity of the profession. A qualified tourist guide, in addition to his cultural background and knowledge of the various audiences, could show and additional knowhow in technical skills that would be useful for the design of digital products offering progressive interpreting frameworks required by the different stages of a well-prepared visit.

As for qualified tourist guides already in activity, we have the impression that the new generations are still not at ease with the digital world and that they continue to consider the profession with a very traditional approach. We are therefore going to carry out surveys among our students, in order to verify our hypothesis and possibly understand what types of skills should be integrated into their scholarship. From the perspective defined by Laborde and Soubiale [17], we will analyse the resistance to the appropriation of digital technology for the guiding profession. We believe that, while the development of digital technology presents mortal dangers for the traditional approach to guiding, it also opens up great opportunities for those who will be able to adapt to the irreversible digital transformation taking place. We will start with the students of this academic year 2022-2023, and will carry out one survey per year for a minimum of five years. This will allow us to see the evolution of the new generations.

For the moment, to fill this gap in the integration of qualified tourist guides in the design of public mediation projects, Gustave Eiffel University encourages a close collaboration between touristic sites and guides to involve them in the creation of digital tours. For example, in 2018, a student of our professional degree developed a tour of the Gallo-Roman site of *Le Fâ* (*Barzan, Charente-Maritime*) using geocaching [28]. The visitors were offered to walk through the site on their own with the aim of finding caches according to an itinerary planned by the management and the guide. The scenario of visit foresaw that the guide would be near strategic caches to offer additional information on the history, archaeology, the site, etc., and to answer to visitors' questions. This twofold interpretative approach responds to the issue of the types of discourse explained in part 2: to propose a framework of information completed by exchanges in the form of questions.

Gustave Eiffel University and IFIS [29] are currently setting up exchanges between student guides and students of the Tourism and New Technologies professional degree in order to allow exchanges on each other's practices, and also to help our future guides to integrate an ICT dimension into their end-of-study projects in order to better prepare themselves to accompany publics who make increasing use of tools, applications and digital practices.

Some students from the *Guide-Conférencier* degree 2021-2022 carried out a project for a guided tour of the Louvre Museum in Paris in the form of a treasure hunt using digital tablets. They prepared specifications for the

developers to work together on the content, ergonomics and functionalities of the application in order to make this treasure hunt fun, by integrating immersive and participative solutions. The didactic content has been provided by the qualified tourist guides who will be positioned at strategic points to offer additional information and answer questions.

In the past class (2021-22), we also had students who brought up reflections on the use of digital technology by qualified tourist guides. Each of them developed the subject from a different angle:

- The use of social networks to sell their tours. This dissertation focuses on the benefits that the use of social networks can bring to the profession of qualified tourist guides; in particular, how to use social networks for free in order to start and/or expand one's activity. The study considers several platforms, with a particular focus on Facebook and Instagram.
- Virtual tours to reach remote audiences. During the Covid-19 pandemic, cultural sites and museums developed more virtual tours and some qualified tourist guides conducted virtual tours in order to build customer loyalty. However, this type of activity does not allow for interaction between the tourist guide and the public to the extent that, in most cases, these practices are considered to be limited to the crisis period. One of our students wondered how to take advantage of these good practices in times of crisis. It turns out that there is a potential market that is very little exploited by guide-lecturers: that of remote audiences. People with disabilities, the very old or sick who cannot travel. Or secondary school classes that have to limit their outings for budgetary reasons. With the help of digital media, the qualified tourist guide can go to the client's home and take a virtual tour. The human side, as well as the interactions, are preserved because the qualified tourist guide is physically with the client. In addition, new technologies make it possible to create immersive scenarios and to offer fun activities, such as treasure hunts or quizzes.
- The contribution of a tourist guide in the creation of serious games for museums. This is a reflection on the usefulness of serious games in the learning activity and for the appropriation of contents through the setting in situation, in particular for young people. The student asks himself how to build a guided tour around game and what it may be the contribution of a qualified tourist guide to this type of activity often carried out by mediators.
- The activity of tourist guides in the service of the development of a territory. Based on a case

study, the town of Cap d'Agde, the dissertation proposes a strategy of action to make seaside tourists interested in the cultural heritage of the territory. More generally, this study allows us to reflect on an important role of a qualified tourist guide, that of being an "ambassador" for a territory. This is particularly true when we think of local qualified tourist guides who work outside the major tourist destinations. Through his knowledge of the territory, of local life, and through the passion that he can transmit, a qualified tourist guide contributes to the promotion of a territory through his guided tours.

From this year onwards, we are going to follow these students, who are now qualified tourist guides, in their activity to see how they develop their professional projects. We are also going to set up a working group that can integrate researchers, teachers and young professionals to reflect on the scope of digital technology in this profession and propose new practices.

VII. CONCLUSION – PERSPECTIVES

We have traced here, although in a synthetic way, the evolution that the profession of tourist guides has undergone over the years and with the arrival of digital technology.

We have shown how much the new uses of digital technology condition the evolution of this profession of mediation facing of audiences that are increasingly using digital technology. To ensure the sustainability of their profession, guides must know how to adapt to this new context and give added value to their interventions. All these developments in the digital transformation take on an additional significance in times of the Covid pandemic, which reminds us how essential and necessary human interaction is. This new perspective has moreover imposed a major reinvention of the profession of qualified tourist guides, notably towards new remote services now integrated into their service offer. It is therefore not a question of putting ourselves in opposition to digital media, but rather of learning to use them so that they become our allies.

It is now clear that qualified tourist guides can no longer deny that new technologies have changed their working environment, yet the approach to digital is still limited and it is not seen as an opportunity either.

Our study then becomes necessary to outline the current context, although it would be the first study in this sense, in order to understand where the resistance of working qualified tourist guides to digital technology lies, despite the fact that it is essential to integrate it into the evolution of their profession and its use has become unavoidable.

We also wish to conduct research among the students of our professional bachelors' degree to better understand their approach to digital technology and to propose an

educational pathway that meets the requirements of the market. Secondly, we would like to develop collaborations between guides and computer scientists to make the tour app even more effective [30], [31].

Research of this kind will help to identify the hidden difficulties of the qualified tourist guide's profession but also to understand the future of this job.

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