Applying the Interpretive Equation to facilitating cultural experiences for audiences with special needs in the digital environment

Uporaba interpretativne enačbe za omogočanje kulturnih izkušenj za občinstvo s posebnimi potrebami v digitalnem okolju

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Abstract
The ERASMUS+ Higher Education Project AD HOC (92019-1-MK01-KA203-060269) introduced a new cultural heritage infrastructure for audiences with special needs. The main aim is to make accessible places of cultural significance by facilitating cognitive-emotional experiences in the digital domain. A cognitive driven communication pattern has been developed and adapted to the conditions regulating learning in the informal environment. The pattern employs storytelling to decongest working memory from irrelevant cognitive loads, enabling new cognitive content to relate to prior knowledge. A mixed methodology has been applied merging the principles of hermeneutics, human cognitive architecture, instructional design and digital storytelling to effectively address the needs of audiences with special needs.
Key words: hermeneutics, human cognitive architecture, audiences with special needs, heritage interpretation, digital storytelling

Izvleček
Visokošolski projekt ERASMUS+ AD HOC (92019-1-MK01-KA203-060269) je uvedel novo infrastrukturo kulturne dediščine za občinstvo s posebnimi potrebami. Glavni cilj je bil narediti dostopne kraje kulturnega pomena s spodbujanjem kognitivno-čustvenih izkušenj v digitalni domeni. Razvit je bil kognitivno usmerjen komunikacijski vzorec prilagojen razmeram, ki urejajo učenje v neformalnem okolju. Vzorec uporablja pripovedovanje zgodb za razbremenitev delovnega spomina pred nepomembnimi kognitivnimi obremenitvami, kar omogoča, da se nova kognitivna vsebina poveže s predhodnim znanjem. Uporabljena je bila mešana metodologija, ki združuje načela hermenevtike, človeške kognitivne arhitekture, zasnove poučevanja in digitalnega pripovedovanja zgodb za učinkovito obravnavanje potreb občinstva s posebnimi potrebami.
Ključne besede: hermenevtika, človekova kognitivna arhitektura, osebe s posebnimi potrebami, interpretacija dediščine, digitalno pripovedovanje zgodb

Introduction

In the common perception, objects that have survived the flow of history are linked to the past. However, not everyone is aware of the influence they exert. Whether they are objects, myths, stories, values or beliefs, it is society that makes them understandable and interpretable. Culture exists if it is contextualized, meaning that the focus of any interpretation should be on

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the community that has created the object, the story and the legend. In order to be appreciated every artefact that has survived its time must return to being a "making" rather than a "made". In this sense, the new digital media must be able to articulate themselves in a language of their own and not be colonized from the non-digital form, merely becoming tools for dissemination. It is not about spreading already constructed interpretations, or artefacts separated from their historical context, but about providing, in the most capillary way, the tools to interpret their life *at the time of their life* considering the complexity of the relationships that exist in a society with respect to the very representation that art has created.

Despite the fact that 84% of the EU citizens declare cultural heritage as personally important and 90% important for their country, much too often the possibility for the (co) creation of a participatory cultural space with cognitive-emotional access to the values of heritage, that promotes self-reflective and critical thinking, remains unattended from the supply side, e.g., cultural heritage agencies and institutions. Even less opportunities exist for audiences with visual, auditory and intellectual impairments: due to a range of limitations, these publics are a less attractive audience for the cultural sector (Pasikowska-Schnass 2019; Matos et al. 2015). Thus, it is important to adopt a pedagogically effective solution that may motivate audiences with special needs to engage in a *learning in disguise* process. In this vein, the ongoing ADHOC project "Accessible and Digitalized Cultural Heritage for Persons with Disabilities" builds a first attempt to create and share innovative practices in making cultural heritage accessible and enjoyable through the development of a *Cultural Narrative* supported with audio-visual media to audiences with special needs.

Literature review

The ICOMOS Ename Charter on Interpretation of Cultural Heritage Sites defines the basic objectives and principles of interpretation in relation to authenticity, intellectual integrity, social responsibility, and respect for cultural significance and context. According to Silberman "the constellation of communicative techniques that attempt to convey the public values, significance and meanings of a heritage site, object or tradition – is central to understanding the wider characteristics of heritage itself" (Silberman 2013, 21). Since Tilden's seminal book on interpretation, there is a consensus among scholars that the latter reveals meanings and relationships rather than providing mere data and unrelated facts (Tilden 1957; Uzzell 1989; Moscardo 1996; 1998; Ham 1999; Babić, Papathanasiou and Vasile 2014). However, despite the fact that the philosophical term interpretation is defining the concept, the value and the process of understanding, little attention has been given to the history and development of interpretation, a fact that is making the Tildenian monologue seem problematic in the era of the creative crowds. *Interpretation* is the Latin equivalent of the ancient Greek word ἑρμηνεία as introduced by Aristotle in the Book of Organon, where the categories of human perception are defined as a human phenomenon (Knowlton 1999, 123–124; Μανδηλαράς 1994; Whitaker 1996). The Aristotelian logical grammar analyses language and speech, rejecting any expression that cannot be verified as true. This leads to the fact that hermeneutics are governed by cognition and not by "understanding". The Greek term ἑρμηνεύειν signifies the notions of expressing oneself, analysing language and other facts and translate, making hermeneutics is also the art of analysis, interpretation, technique to perception. Between 1500 and 1800 was developed the notion of the hermeneutical spiral e.g., the relationship between the ensemble of the meaning and the meaning of its parts, defining each other (Grondin 2001). In the 19th century with Schleiermacher and Dilthey hermeneutics, emerge as a reinforcement of human historicity in the secular world, as the factor of analysing conditions of human expressing, such as language and art within the human horizon. To understand and perceive,

means to (re-) cognize, to distinguish a notion or a meaning from the explanation, this is the means that enlightens the reasons through the relationship of cause and effect (Vedder 2000). In the 20th century Heidegger and Gadamer define the hermeneutical spiral on the basis of the relationship of partial and holistic components of a creation e.g., text, expression, work of art. Gadamer introduces the concept of the holistic understanding (Verstehensganzheit/Sinnhorizont) of a creation, the historic horizon, which includes also the analysis (Gadamer 1990, 493). In order for a creation to be understood, the interpreter has to pre-understand the connections, interdependencies and cohesion of the parts, within any creation lies. In order to understand the cohesion and interdependencies of a given work of art one should have perceived first the relationships among their parts, the factors defining the ensemble (Momente). In Heidegger and Gadamer, the hermeneutic spiral consists in the relation between the concrete partial interpretation of something and the totality of understanding (the horizon of meaning) in which the interpretation is always already located. Heidegger demonstrates the fundamental spiral structure of understanding, where understanding belongs to the existential constitution of human existence (*Dasein)*, which is always an understanding being-in-the-world (Skolud 2008). Gadamer ties the hermeneutic spiral to the positive and productive prejudice, preconception. The understanding of meaning (*Sinn*) with the living and the understanding of meaning of the past are integrated into a history of effects that encompasses both the life and cognitive horizon of the one who understands and the object's horizon. Therefore, they have their starting point in judgments and opinions shaped by the history of effects already implying prejudices and preconceptions, so that every interpretation includes the distinctive appropriation of one's own prejudices and preconceptions. Understanding interpretation takes place only through factual examination of the prejudices as preconceptions and their modification, deepening and revision. Thus, only in the light of a pre-understanding (pre-conceptions and prejudices) we do gain new experiences and insights that change the individual horizon. In essence, Gadamer is interested in what he calls "hermeneutic experience", i.e., multiple possibilities of the hermeneutic experience of truth, not only in the pure upper field of philosophy, but also in the field of historical sciences and, above all, of art (Δημητρακόπουλος 2001; Bricker 2020, 1). Follow Gadamer, we regard the condition between *perception and understanding*, as two different components: we relate *perception* to the neuro-physiological ability to perceive without social meaning, while we regard *understanding* as imbued with social meaning, prejudices, prior knowledge and potential insights. To defeat time-distance decay, e.g., to offer contemporary visitors the chance to understand the remote past, we apply hermeneutics not as method for understanding but an attempt to clarify the conditions in which understanding takes place. Among these conditions are, crucially, prejudices and fore-meanings in the mind of the interpreter. Understanding is therefore interpretation, which uses one's own preconceptions so that the meaning of the object can really be made to speak to us. One of the main problems is with is how to distinguish 'true prejudices', by which we understand, from the "false" ones, by which we misunderstand. Gadamer suggests as a solution to develop a "historical" self-awareness which makes conscious one's own prejudices and allows one to isolate and evaluate an object on its own. Another important condition in which understanding takes place is temporal distance. For Gadamer, present and past are firmly connected and the past is not something that has to be painfully regained in each present, if the interpreter has the tool to decode it. We argue that visitors exploring heritage are linked in the same fashion with pre-understanding and prejudice as Gadamer defines these terms. Not being able to decode cultural content has a proven consequence for the aspect of the heritage engagement: meaning fusion and misunderstanding (Horizontverschmelzung).

Appreciating heritage becomes more complex when dealing with special audiences. According to the European Blind Union, 30.000,000 visually impaired individuals and 4.4 million adults with a disabling hearing loss live in the EU and these audiences are often excluded from experiencing arts and culture due to the barrier's society places on them (EBU 2022a, EBU 2022b, hear-it 2022). Disabled people still face preventable barriers in accessing arts and cultural events, including transportation issues, price of tickets, lack of information and support at venues. People with disabilities can face particular barriers owing to the inaccessibility of cultural premises, venues or content. People in wheelchairs cannot attend a concert if the only way into the hall is the staircase; blind people cannot appreciate exhibits in a museum if there are no descriptions in accessible audio or electronic format or in Braille print; and a deaf person cannot enjoy a film in a cinema if there is no subtitling or sign language interpretation. According to the last Eurostat survey conducted in 2011, one in seven people between the ages of 15 and 64 has difficulties with basic activities, such as walking (4.2 % of women, 3.4 % of men), seeing (2.1 % of women, 1.8 % of men) or hearing (1 % of women, 1.3 % of men and just 1 %-5 % of literature is accessible to blind and visually impaired people (Pasikowska-Schnass 2019, 2). These three categories (blind and partially sighted people (estimated at 30 million); wheelchair users (estimated at 5 million) and deaf people (750 000 sign-language users according to the European Union of the Deaf) constitute almost half the whole population of people with disabilities. In sum, the cultural needs of audiences with special needs are often considered separately from other groups of people and often after organizations launch their events to the public (Shape Institute 2013). The European Blind Union (EBU) conducted a survey on access to culture in 2012: the results revealed that people with visual disabilities have poor access to culture and that little had been done across the EU to facilitate museum access for the blind, partially-sighted, deaf or hard of hearing, or for people with learning difficulties (EBU 2012, 16; EFHU 2010). The barriers aforementioned persist even though the EU is signatory to the UN Convention on the Rights of People with Disabilities in force since 2011, according to which the EU shall ensure the implementation of all rights for all people with disabilities through the adoption of new legislation, policies and programmers and the review of existing ones (United Nations 2022). Article 30 enshrines the right of people with special needs to participate in cultural life and have access to cultural materials in accessible formats, AV productions and services, as well as performances, films, theatre and other cultural activities in accessible formats; as well as libraries and tourism services. Article 30 encourages signatories to take all appropriate measures to ensure that persons with disabilities enjoy a) access to cultural materials in accessible formats; b) TV programmes, films, theatre and other cultural activities, in accessible formats and c) access places for cultural performances or services, such as theatres, museums, cinemas, libraries and tourism services, and, as far as possible, enjoy access to monuments and sites of national cultural importance. To this end, it is necessary to ensure that laws protecting intellectual property rights do not constitute an unreasonable or discriminatory barrier to access by persons with disabilities to cultural materials. The Marrakesh Treaty, in force since 2019 in the EU, sets mandatory limitations and exceptions to intellectual property rights for the benefit of the blind, visually impaired and otherwise print disabled (World Intellectual Property Organization 2016). Following the trends, in March 2019 was launched the European Accessibility Act, an EU directive, which sets out rules on products and services accessible to people with disabilities and functional limitations, including electronic devices, websites and audio-visual media services. The European Federation of Hard Hearing People (EFHOH) has produced accessibility guidelines and the European Blind Union (EBU) has produced a good practice guide for the accessibility in sites and museums; both documents are considered by the AD HOC Project in its uni-

versal design for cultural offers (EFHU 2010; EBU 2022b).

Research methodology

Addressing audiences with visual, auditory and intellectual impairments in digital culture requires a new approach. The aim is to link audience needs with the delivery of a rewarding experience in the digital environment respecting special needs.

Research Objectives

The knowledge acquisition pattern in the digital environment for audiences with special remains an under-researched topic. The main objective is to consider the conditions regulating informal learning and suggest a framework to bridge the existing spatiotemporal gap between heritage assets and target publics with visual, auditory and cognitive impairments.

The Spatio-Temporal Gap

Aligned with hermeneutical principles, a hypothesis is formulated, that heritage generates often a spatiotemporal gap between items and the audience: while the tangible form is perceivable by the eye, the intangible dimension needs to be revealed. We further argue that *the* spatiotemporal gap in heritage settings is of *cognitive nature* impacting both the onsite experience as the digital representation of heritage. To appreciate heritage values and effectively bridge the gap between the item and the audience, the latter needs to be linked to the intangible dimension of the item: symbols, meanings and social values. Presentations of cultural heritage to the public, as authored by the supply side, usually disregards HCA mechanisms, such as the eye scan path movement, general cognitive ability ***g***, category learning, the ability to perceive and process information, retain and evoke mental representation, WM and LTM capacity and interactions (Prasada 2000). Learning, visual and auditory disabilities are conditions, which dictate an alternative experience design that relates to:

- the particularities of informal learning in cultural settings esp. the short time-budget and knowledge gaps of non-captive audiences;
- the rising desire for storytelling in audio-visual media formats in the cultural sector
- the need to restructure the learning paradigm and the methodological approach to make cultural offers accessible for audiences with special needs (visual, hearing, mobility and cognitive impairments)

Learning in disguise

Humans acquire, store, recall, code and decode information about the relative locations and attributes of phenomena in their everyday life using perception and memory to create cognitive maps. Genetically intrinsic only to humans, memory is the collective function of the human ability to perceive, learn and cognize. Memory is not only the information storage place, but also the information processor, with memory functions distributed in the cortex and sub-cortex (Waxman 1996, 281). The human memory processor consists of Sensory Memory (SM), Short-Term Memory (STM), Working Memory (WM) and Long-Term Memory (LTM). Human Cognitive Architecture (HCA) offers an unlimited LTM able to hold mental representations of varied automaticity degrees, but a limited capacity WM with independent sub-components to deal with auditory and visual material (Robinson 1998, 306). Despite the fact that we are addressing audiences with special needs, those are at the same time non-captive audiences engaging potentially with culture and heritage in their leisure time. As such, they are linked with their own pre-understandings and prior knowledge, to follow Gadamer's main principle. Moreover, a very particular condition regulates the scene: the main difference between learners in formal settings and non-captive audiences is the possibility to rehearse material. As the WM is limited in capacity with respect to the number of elements it can handle simultaneously, rehearsal is necessary to prevent information loss (Cow-

an 2010, 4). This condition cannot be met with time-scarce and non-captive audiences, whether this is happening onsite or in the digital environment. In order to create a mental bridge to selected phenomena, and make the novel seem familiar by relating it to prior knowledge and/or universal concepts in a much shorter time period and more entertaining way, we presuppose a limited WM capacity to deal with visual, auditory and verbal material and an almost unlimited LTM, capable of retaining retain schemas i.e., mental representations that vary in their degree of automation (Sweller, van Merrienboer and Paas 1998). This condition applies for the target publics with visual and auditory impairments, the latter are also supported by sign language visitors. The target publics with intellectual disabilities (ID) are offered a separate text version following the rules of text simplification both at the lexical as at the syntactical level (Chen et al. 2017; Saggion 2017; Change 2019).

Whoever is familiar with Homer, Dante, Shakespeare or any saga, knows that humans are captivated by storytelling. It is through storytelling that we make sense of the world, of the self and the other. Bruner maintains that children construct a story about their actions when they desire integrate their own desires with the family rules. This push to construct narrative shapes how children acquire language. Moreover, the habit persists into adulthood as a primary instrument for making meaning. These storytelling skills ensure our place within human society, and probably imply that information not structured, as a narrative is more likely to be forgotten. Since Aesop and the Bible, every story includes a moral stance, and many stories deal with the norm or its violations according to Bruner, while according to Egan anyone, even very young children, can acquire historical knowledge if it is presented at the developmentally appropriate level (Bruner 1990; Egan 1983; 1989). According to Kirk and Pitches storytelling can promotes deep learning by prompting reflection on practice, whereas Dewey argues that humans learn best by reflecting on their experiences and on the experiences of the others (Kirk and Pitches 2013; Dewey 1963). In this vein 10 stories have been developed and tested in relation to software, graphic design, ease of navigation, story content and multimedia (Saridaki and Meimaris 2018).

Experience design

"Experience" is a term often used with little attention to meaning, mostly interpreted as a sensation. It generally indicates the 'complex of all which it is distinctively human' and stands at the centre of educational endeavour. Education per se might be defined as an emancipation and enlargement of experience. Experience implies process and content: it includes *what* we do, and *how* we act and are acted upon, the ways in which we do and suffer, desire and enjoy, see, believe, imagine, love. The process of experiencing has two meanings: "having an experience" and "knowing an experience". *Primary experience* is what occurs as through a minimum of incidental reflection, and secondary *reflective experience* through the intervention of systematic thinking. Experience has within it judgment, thought and connectedness with other experiences, it is a hermeneutical act: "experiencing" and "what is experienced" stand to one another in the most complete interdependence, comprising a whole (Dewey 1963; 1966). In every society, there are traces of another time, of other cultures, of a way of thinking different from our own, signs of a culture, documents of the invisible. The collective place for reflection on what is not seen, what is not real, has always been the theatre. Therefore, understanding the symbolism of a work of art leads to reflection on what the theatre can teach us for the experience design. The theatre is not just a place with chairs, a stage and a curtain; it is also the dramaturgy that transports to the audience a hidden meaning within a story. It is like a magic box that each of us opens and explores it during the performance and which disappears the moment the lights come back on. At the exit, we may seem empty-handed, but if one looks carefully in the pocket, as in a magic trick, something has remained. Within this vein, we used theatrical dramaturgy to give a body of her-

itage to the signs and symbolism of the works, to frame them in the history of time, the rationale, the emotion. The digital tools are built on these principles, so that the selected target publics experience the topic with an aesthetic enjoyment that completes the most fascinating human experience: crossing time, space, and acquiring new knowledge. The effort is focused in generating clues for the individual revelation of hidden meanings within historically validated stories, whose narratives intend to affect users in a cognitive-emotional way. Universal concepts are used to present socio-cultural phenomena and recreate the past. Prior and expert knowledge about heritage assets is set to zero. The digital heritage presentation is adjusted to visual, auditory and intellectual needs, reducing extraneous cognitive loads using the principles of both HCA and hermeneutics; universal concepts are exploited to generate familiarity and facilitate an effortless understanding and the grasping of a meaningful content; learning objectives are defined and an audio-visually supported cultural narrative has been developed.

The Interpretive Equation

Extensively used by the National Park Service and other interpretive facilities in the United States, the Interpretive Equation (KR + KA) x AT = IO is a metaphor for understanding the foundational elements of the interpretation of heritage and provides a memorable way to visualize, analyze, articulate and balance interpretive services.

(KR + KA) x AT = IO	
KR	Knowledge of the Resource (Natural, Cultural, Intangible Asset)
KA	Knowledge of the Audience
AT	Appropriate Implementation Technique or/and Media Selection
IO	Interpretive Opportunity

Figure 1: The Interpretive Equation Table. Modified from NPS

KR – Knowledge of the Resource

Knowledge of the Resource (KR) documents the asset history, past and present uses and issues, current conditions, potential threats and opportunities; however, we argue that the process should include an understanding of hermeneutics. We have embedded within the body of knowledge the asset significance, e.g., all the reasons why each selected asset has been deemed important and relevant enough to be safeguarded and communicated. The KR knowledge base concludes with a statement of significance for each asset expressed in the learning objectives that make the asset relevant, significant and unique to the selected target publics.

KA – Knowledge of the Audience

Any meaning that is not relevant to the audience is ignored, thus *Knowledge of the Audience* is equally important to KR. KA implies a variety of data like visitation, demographic information, group identity, culture, ethnicity, learning styles, motivations, expectations, interests. Within this spirit ADHOC address the particularities of the selected target publics and offer multiple opportunities for them to find their own personal connections with the meanings of heritage assets presented.

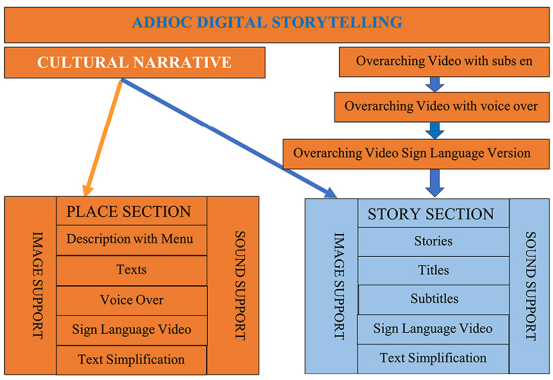

Figure 2: AD HOC Digital Storytelling Structure.

AT – Appropriate Technique

Not much is known, if agencies and interpreters do apply the principles of HCA to make interpretive offers educationally relevant, as there is a dearth in research in regards to a) certifications, b) HE curricula and c) evaluation of services. ADHOC has made an effort to link causal mechanisms of HCA and instructional design in order to facilitate higher cognitive results in the informal setting, with less challenge for audiences with special needs (Berninger and Corinna 1998) and employ narratives of theatrical dramaturgy in digital storytelling. The digital narrative is the main medium applied to engage and involve the selected target publics and respond to their individual needs (sound, image, video, text simplification, sign language video).

IO – Interpretive Opportunity

An Interpretive Opportunity (IO) is an output that provides the audience with rewarding experiences. The IO presents a favourable set of circumstances for a meaningful moment of connection between the audience and the selected assets, giving birth to a customized, personal experience. Since the connection happens within the individual audience members, who retains the sovereignty of their own mind and emotions, the mission of the IO – is to offer the opportunity, which the audience may or may not take. During the frond evaluation stage, 10 heritage assets have been selected, out of which 6 IOs have been designed to pursue learning and behavioural objectives and impact the audience. Linking the IO to the principles of hermeneutics, which presupposes the understanding of the parts, prior to the understanding of the whole, the latter becomes a driver for the delivery of a well-designed cognitive-emotional experience

The Audio-visual Narrative

Given that language is the most complex of the human cognitive functions, the audio-visual story content is chunked with one novel concept per unit-, below the limit proposed by Miller, Baddeley, Hitch and Baddeley and Cowan (Miller 1956; Baddeley and Hitch 1974, Baddeley 2003; Perconti and Plebe 2020, 8; Cowan 2010, 8). Visitors with intellectual impairments are attracted by binary opposites – good and bad, big and little, love and hate – and they derive meaning from affective association with one of the pairs: as Egan points out, these discrete stages build on each other and thus never completely disappear: "Affective orientations to binary opposites ... are not simply childish and inadequate ways of thinking. They will later be controlled by more sophisticated 'paradigms' but they will remain absolutely basic and essential" (Egan 1983, 76). Graphic design is aligned with the eye scan path movement, whereas information layering follows international standards for the interpretation of heritage (ICOMOS 2004; Papathanasiou-Zuhrt 2015, 62). In order to decongest the WM and redirect attention, metaphors, associations and universal concepts have been extensively utilized, while meanings communicated through the use of universal concepts differ substantially from transmitting formal knowledge (Papathanasiou-Zuhrt 2012, 36). However, the use of procedures to reduce cognitive loads is not at the expense of understanding and the latter is further supported by the theatrical dramaturgy and historical contextualization using historic or fictious personage to support empathy (Mc Kinney et al. 2018, 185; Papathanasiou-Zuhrt 2020, 290). Heritage builds a strong motive for cultural consumption across a wide range of varied audiences and the advent of digital technology has impacted the cultural heritage sector world-wide. Still, the mere digital representation of heritage, where the distant past is beyond the contemporary individual memory and as such beyond the process of understanding, builds a barrier for all audiences, especially those with special needs. By creating a balance between novelty and familiarity, authenticity and the stories told, we can offer exceptional heritage experiences and link the audience to a cultural continuum, considering a) the restrictions of human WM and the mechanisms of acquiring and retaining information adapted to audi-

ences with special needs; b) the adaptation of expert knowledge through hermeneutics in order to decongest WM and facilitate understanding through dramaturgy; c) the UNESCO criteria for assessing heritage and select the places of cultural significance; d) a methodology is developed for critical issues in interpretation.

To serve this purpose ten (10) heritage items have been assigned to six (6) learning objectives, which are at the same time interpretive opportunities (IO):

1) Unesco Designations: Nea Moni; Mastic Cultivation,
2) Medieval Fortifications: Anavatos, Avgonima,
3) Genoese Dominion and the Maona Company: Seaward Castle of Chios,
4) Medieval Mastic Villages: Pyrgi, Mesta, Olympoi, and Unesco-listed Mastic Cultivation: PIOP Mastic Museum,
5) Biocultural Ecosystem of Citrus Groves: Kampos,
6) The Enlightenment: Historic Public Library "A. Korais".

Conclusion

The vital consideration for the design of the AD HOC storytelling is

1) how humans acquire and retain information,
2) how human memory processes data, taking into account the particularities of the selected target groups (visual, hearing, mobility and cognitive impairments),
3) how to create interactions between the audience and the cultural resources;
4) how the use of dramaturgy to augment the cognitive-emotional interactivity for the selected target publics.

The outcome of this hermeneutical process is a framework of contents, which is made up by: (a) a central message, which describes "the essence" of the heritage object and its intangible values, by facilitating information retention, (b) a storyline that holds the audience's attention, reinforcing the association chain; c) a new text and media version suitable for physical and cognitive disabilities; e.g., voice over for visual impairments; d) sign language videos for hearing impairments; e) appropriate software and navigation. However, there are several restrictions faced by this research: firstly the correlation of cultural significance and the heritage experience per se is an under-researched topic; secondly despite the fact that heritage interpretation is included in curricula related to heritage management, museology and humanities, is usually offered as an independent degree, has little relation to the human cognitive architecture and does relate philosophically to its actual origins. Moreover as there is not yet put in place an EU-wide, recognizable and validated certification for the skills of interpreters, despite the various training offered, the profession remains unrecognized and the various good practices are scarce. At the same time, very few interpretive offers can follow the light speed tempo of the audio-visual industry. The latter has been profoundly affected by the impact of digital technologies, but it is applying them in stages, gradually discovering all the opportunities, possibilities and new fields of application. It started from the signal distribution: no more analogue, no more heavy pallets of films to be transported, no more tapes to be shipped, but files, which can travel around the world in a few seconds and populate rooms, which until the day before were used in other ways. The last phase is that of digital thinking, where audio-visuals are conceived for a digital and meta-disciplinary environment. In a few words, what falls at the third stage of development is the boundary between cinema, theatre, documentary, television, museum, trade fair, large company, digital network aggregator, gaming and where audio-visuals specialize and become a tool for the construction of knowledge and where interpretation has not yet started to gain benefits or to play a significant role. The enormous possibility of manipu-

lation that digital images possess, must open the door to the narrative, to a structure of its components in an increasingly specific language at the service of culture and articulated, to sparkle a cognitive-emotional experience without fossilizing in the search for suggestive effect, devoid of internal logic. These are unmissable opportunities for the development of knowledge, of the audience's cultural capital. Today we risk being in the presence of a spontaneous literacy offered by the possibilities of technology, disordered in its methods, rhapsodic and still tied to the default procedures offered by the seller. We still do not know where this process will take us, so precarious is the balance between constructing new procedures for the elaboration of meaning, and remaining anchored to the babble and repetition of low-profile models that are essentially self-referential. What is certain is that these possibilities have considerable weight in the experimentation of processes, to create abstractions and propose new skills, and are of crucial interest for those who wish to narrate art. The articulation of these languages could be a solution to engaging the audience. Conveying enthusiasm attracts, produces identification; this is how the encounter between the public and art in a museum should work. The digital revolution offers, produces and researches tools that cannot but be based on considerations such as this one to address and solve the problem of its full inclusion in cultural production. The forms created by the language of audio-visuals are the best basis for constructing sense and meaning in the context that the non-expert visitor lacks for understanding a work of art. There is a widespread idea that 'digital' is a technology and not a way of investigating and celebrating the relationships between things and ideas, this aspect is addressed by AD HOC as much from the point of view of the philosophy of approach as from the opportunities that such an environment brings, without excluding the dangers and pitfalls.

When seeking to promote the inclusion of audiences with special needs, a visitor-cantered interpretation model, able to transform the tangible intangible form of a resource into powerful experience is needed. Without suitable presentation and appreciation of what is being valued, cultural heritage remains meaningless and the understanding is lost. The basic idea is that social cohesion takes place around the intrinsic values that culture carries with it, such as traditions, myths, legends are the source of much of our behaviour. We need to be aware that there are different readings and prejudices, and to avoid the simplification of the so-called 'cancel culture movement', which in the name of a supposed 'fairness for inclusiveness' risks eliminating the legacy of history. The ability to transform every contradiction into a matter for discussion and research that will provide the inclusive materials, meaning to remove the obstacles that prevent dialogue instead of reducing everything to the "common denominator" and that means to ensure access to cultural heritage also to audiences with special needs. If the aim is to present the ways of telling a story which stimulates the curiosity and interest of the audience and, at the same time, leaves a tangible trace in the consciousness, then it is not necessary to describe the forms and rules of the story but to act on it and overturn the rules of traditional historical and scientific narration by reconstructing a path in the opposite direction. Respecting scientific accuracy, the material evidence of the past is not used to document historical facts, but historical facts are used to affirm the function that these elements have had, exploring, where necessary, the social and anthropological context that generated them. In this way, objects (stories, ideas) become instruments of a narrative that transfers to the observer the set of values on which the civil society of which he is a member is based. In a word: it educates and contributes to generating the chain reaction that the art public needs to expand its catchment area. In this sense, the audio-visually supported storytelling becomes the best example to design in order to build together "Le Rendez-Vous des Arts" where knowing how to hide in order to reveal is the illusionistic ability of each artist. The audience sees what

she wants them to see. However, the illusion is only reality in the moment, a voluntary act, in which they themselves become tangible proof of the truthfulness of the tale. As in the theatre, where everything is fictitious but nothing is fake.

Summary

The ERASMUS + AD HOC (2019-1-MK01-KA203-060269) is an experiment towards solutions for audiences with special needs in the cultural domain. AD HOC suggests that auditory, visual, mobility and other impairments should not impede individuals discover the heritage places and the stories these have to tell. Thus, AD HOC is committed to make a contribution to enhance access to cultural heritage for people with special needs by creating the enabling environment for digital and physical experiences at places of cultural significance. AD HOC introduces a new cultural heritage infrastructure, taking into account the needs of visitors with visual, auditory and mental impairments. The interpretive equation, e.g., knowledge of the resource, knowledge of the audience and appropriate mediation techniques provide for interpretive opportunities to connect the audience to the meanings and values of heritage. A constant consideration that is guiding the design of the cultural heritage infrastructure, is how humans and in particular those with special needs acquire and retain information and how the human memory processes data. In an effort to establish interactions between visitors, phenomena, and tangible and intangible heritage resources, a hermeneutical process has been utilized which describes "the essence" of the work of art and its tangible and intangible values, while at the same time it manages cognitive loads by facilitating information retention through storylines that holds the visitors' attention, reinforcing the association chain. The digital experiences adapted to the visual, auditory and intellectual needs of the target audiences not only realize cultural discoveries at sites, museums and collections but also satisfy educational goals and mental training. Such digital experiences are not lectures, but cognitive-emotional opportunities they allow visitors with special needs to interact with the heritage (re) presented. The experience design strives to provide for fun and curiosity, insights and meanings, participation and entertainment for a neglected audience. The multimedia supported digital narrative is encouraging interaction, allows the audience to familiarize with novelties, and varies the visual, auditory and narrative content to support immersion and reflection.

Povzetek

Projekt ERASMUS + AD HOC (2019-1-MK01-KA-203-060269) je eksperiment, ki je namenjen iskanju rešitev za občinstvo s posebnimi potrebami na področju kulture. AD HOC predlaga, da slušne, vidne, gibalne in druge ovire ne bi smele ovirati posameznikov pri odkrivanju krajev kulturne dediščine in zgodb, ki jih ti pripovedujejo. AD HOC je tako zavezan prispevati k izboljšanju dostopa do kulturne dediščine za ljudi s posebnimi potrebami z ustvarjanjem ugodnega okolja za digitalna in fizična doživetja na krajih, ki so pomembni za kulturo. AD HOC uvaja novo infrastrukturo kulturne dediščine ob upoštevanju potreb obiskovalcev z okvarami vida, sluha in duševnega zdravja. Interpretacijska enačba, npr. poznavanje vira, poznavanje občinstva in ustrezne tehnike posredovanja, zagotavljajo interpretativne priložnosti za povezovanje občinstva s pomeni in vrednotami dediščine. Stalni premislek, ki usmerja načrtovanje infrastrukture kulturne dediščine, je, kako ljudje, zlasti tisti s posebnimi potrebami, pridobivajo in ohranjajo informacije ter kako človeški spomin obdeluje podatke. V prizadevanju za vzpostavitev interakcij med obiskovalci, snovnimi in nesnovnimi viri dediščine je bil uporabljen hermenevtični postopek, ki opisuje "bistvo" umetniškega dela ter njegove snovne in nesnovne vrednosti, hkrati pa obvladuje kognitivne obremenitve, saj omogoča lažje ohranjanje informacij s pomočjo zgodb, ki zadržujejo pozornost obiskovalcev in krepijo verigo asociacij. Digitalne izkušnje, prilagojene vizualnim, slušnim in intelektualnim potrebam ciljnega občinstva, ne uresničujejo le kulturnih odkritij na mestih, v muzejih in zbirkah, temveč izpolnjujejo tudi izobraževalne cilje in mentalno usposabljanje. Takšna digitalna doživetja niso predavanja, temveč kognitivno-čustvene priložnosti, ki obiskovalcem s posebnimi potrebami omogočajo interakcijo s (ponovno) predstavljeno dediščino. Oblikovanje doživetja si prizadeva zagotoviti zabavo in radovednost, spoznanja in pomene, sodelovanje in razvedrilo za zapostavljeno občinstvo. Multimedijsko podprta digitalna pripoved spodbuja interakcijo, občinstvu omogoča, da se seznani z novostmi, ter spreminja vizualne, zvoč-

ne in pripovedne vsebine, s čimer podpira potopitev in razmislek.

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