Audio description in 360º videos: for all to see

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ABSTRACT

This work aims to present a 360-degree virtual visit to the Duna Grande archeological site, with audio description in Portuguese, and discuss the parameters adopted for the composition of its inclusive narrative. The present team is made up of two sighted audio describers (one also an archaeologist) and a blind consultant, who has been designing this product for about eight months. We discuss some challenges, limitations, and necessary adaptations faced to produce accessible video in this format. We partnered with the Museum of Archeology of Itaipu to launch this video in early November 2021 with wide dissemination on social networks.

KEYWORDS

Audio description, accessibility, archeology, immersion.

1 Introduction

The presence of audio description in cultural products in Brazil has been advancing at a still slow pace in a world that is rapidly awakening to the importance of comprehensive viewer accessibility, improved user experience, and universal design. In this work, we discuss the production of a 360-degree video of an archaeological site (Duna Grande de Itaipu) with audio descriptions in Portuguese and the paths we took so that this intersemiotic translation could lead, in an inclusive way, to all those interested in the subject. So, with this video, we want to deliver an engaging narrative through an archaeological site and raise discussion on accessible guidelines to design this kind of inclusive narrative in these kinds of immersion environments. It was necessary to adopt an essentially technical script to encompass a more subjective perspective, as occurs in dynamic images. This research is part of the ongoing project called "Virtual Guided Visit to Duna Grande de Itaipu in 360 degrees: for all to see" [1].

2 Material and methods

The choice of the Duna Grande archeological site is mainly due to its environmental context and scientific relevance. The area is fenced since 2019 but without a formal visitation program. It is located in the State of Rio de Janeiro, specifically on the Maritime Front of the Serra da Tiririca State Park (PESET) in the municipality of Niterói. Along with two other archaeological sites, Duna Pequena and Sambaqui de Camboinhas, they are testimonies that prehistoric peoples belonged not only to one cultural tradition but to several [2-6]. For the audio description, we applied the five main concepts: clarity, objectivity, relevance, conciseness, and specificity [7-8], as well as the guidelines proposed by Technical Note nº21 [9]. The audio description was prepared and revised by the present authors. The video was captured in three fixed points by a GoProMax camera supported on a tripod and remotely controlled with the smartphone and is currently in edition in Adobe Premiere Pro. We partnered with the Museum of Archeology of Itaipu to launch the product in early November 2021 on their Youtube Channel. The State Park will also celebrate their 30th anniversary in November, so a significant mobilization is expected to occur in all their influence domain area.

3 Results and discussion

We captured the videos for 3 minutes at each of the three selected points to provide enough time for the audio description without losing the spatial sound and any changes in the landscape, reflecting a greater immersion of the viewer during the narration. Thinking about limitations related to connectivity as internet access, devices, or later sharing distribution, for uploading videos to free online platforms, the team opted to split the initial video, planned as a short, 10 to 15 minutes, for fragmentation into four videos with shorter duration, sequenced by a playlist. Video 1, in 2D, presents the context and provides an introduction to the project and the video produced, as well as authors' credits, partners, and supporters. It also includes guidance on audio description and explanation that it is a 360-degree video. Videos 2, 3, and 4 are organized as follows: video 2 is the site of archaeological research already carried out; video 3 shows the top of the dune and its surrounding landscape, and video 4 shows the north face of the dune, from where you can see the lagoon and the Itaipu Channel and the location of the other archaeological sites, already impacted. Since the video intended to carry out a guided tour, the viewer is expected to observe the landscape and territory and allow themselves to be driven by the narrative proposed in this sequence. We centered the initial vision about the videos with a focus on the main content to be explored. For instance: video 3 focuses on the sea view from Itaipu and Camboinhas and the *Menina, Mãe, and Pai* islands. Therefore, the audio descriptions start from these focal points to the surrounding environment, with elements always from left to right. For those

who can see, they can also navigate through the 360º interaction. Activating descriptive subtitles is also offered, so death users literate in the Portuguese language can have complete access. We chose to leave the video only with the spatial sound captured at the video recording to increase real scenario immersion. Future works include taking those spatial sounds and converting them to interactive vibration within the mouse device.

Thus, we highlight audio descriptions in Portuguese, as there is still a lack of accessible cultural products in this language. For instance, just in Brazil, there are more than 950K people with some visual disorder. Audio description is, therefore essential and indispensable factor for the visually impaired person to have autonomy and empowerment from the moment they have access to accessible content and draws their conclusions. We believe this work also increases further discussions in the academic field, besides promoting the basics of culture and information in a free, digital, and easily accessible format, encouraging the dissemination of immersive narratives and present results based on scientific research. This first demo also aims to be a reference for future projects for the extroversion of archaeological heritage, including other archeological sites still preserved in the State of Rio de Janeiro and other points of interest in the oceanic region of Niterói. After the launch, we intend to conduct a broad survey with users, sighted or not, for improvements in the system since similar work has not been carried out so far.

4   Conclusions

360-degree videos related to cultural heritage were intensified during the pandemic period due to social isolation. We noticed an exponent growth of museums that made available images and produced guided tours in their spaces interactive, contributing to the most significant possible reach of visits, surpassing geographic limits and barriers. However, visits in this type of media to archeological sites are still rare, and those that have audio descriptions in Portuguese are non-existent. Innovatively, this work brings a new way of extroversion of the archaeological heritage through a 360-degree visit with audio description in Portuguese that does not require the traditional mouse or keyboard interaction to explore the complete view. The limitations presented here, together with existing potentialities, emphasize that there is still a vast field to be researched, both from a technical point of view, adding other resources such as a mediator in person, improvement of spatial sound, and interactive systems. From a narrative point of view, the selection about which history and clipping we want to tell, without the interpretative intervention of the researchers and the duration of each video clip is an important field of research. The protection, preservation, and public policies managed regarding the heritage archeological, depend mainly on the value attributed by different publics involved. A complex decision that also involves culture and digital literacy and internet connection, and technology accessibility. Therefore, emphasizing audio description in Portuguese has been done in this paper, encouraging and motivating this invisible person to be included in these interactive, immersive systems.

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