

Furiose Interazioni Project*

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Abstract. Furiose Interazioni is a project in the implementation phase that concerns innovative ways of enjoying material and immaterial heritage through digital interfaces, respectively targeting the Mauriziano villa and the *Orlando Furioso*. In doing so, it experiments with a design process based on deeply interdisciplinary group work that combines three different levels of knowledge: theoretical, technological, and interactional.

Keywords: Cultural Heritage Technologies · Immersive Education · User Experience Design

1 Introduction

Furiose Interazioni is a TICHE demonstrator project that involves experts in the history of literature, childhood education, and interaction design with the shared objective of proposing innovative and immersive didactic methods for the digital enhancement of Ludovico Ariosto’s work and the Mauriziano’s spaces. The project consists of two paths of digital installations created inside the birthplace of the poet. The first, designed for a target audience of preschool up to secondary school-aged children, is focused on the *Orlando Furioso*, reinterpreted in the context of the villa (i.e. Furiose Interazioni path). The second, designed for the adult public, aims to open to everyone the spaces of the building, with particular regard to the stately apartments’ frescoed rooms, which are currently not accessible to people with disabilities (i.e. Stanze dell’Ariosto path).

1.1 Furiose Interazioni path

The idea behind the first path, as already theoretically illustrated by Genovese [1], is to create a contemporary reconfiguration of the *Furioso* by exploiting the distinctive ‘transformability’ of the poem, here mutated into a life-size game of goose whose steps represent different approaches to its imaginative heritage. In

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¹ TICHE (Technological Innovation in Cultural HERitage) is the coordination of the Italian National Technological Cluster in the sector of Technologies for Cultural Heritage (<https://www.fondazionetiche.it/>)

its current state, it includes four stations, inspired by historical interpretations of Ariosto’s poem, that differ in contents, technologies, and interactive methods.

In Station 1 users interact with statuettes representing relevant narrative topics in the *Furioso* (i.e. the Sword, the Ring, the Horse, and the Horn) which, positioned on an NFC-reading platform, transform into holograms on a 3D screen or reproduce animated videos inspired by the poem’s episodes, letting them enter the work through a twofold transaction: from the real world to that of the poem and from the analog world to the digital one. In Station 2 users interact with a multimedia touch table enabling them to browse through the stories of the *Furioso*’s paladins while, thanks to a camera and algorithms for facial recognition, their faces are projected instead of that of the characters, letting them become part of the story. In Station 3 users experience firsthand one of the most significant episodes of the poem: Astolfo’s “Trip to the Moon” to recover Orlando’s lost sanity. Through a double interactive path, designed with VR headsets for users over 13 and two synchronized animated videos for younger ones, readers embark on an immersive journey through space. In Station 4, users are invited to interact with a tablet by pronouncing words (e.g. “Love”, “Fortune” and “Future”) and listening to Ariosto’s voice replying with verses of the poem related to the topic.

1.2 Stanze dell’Ariosto path

The second itinerary, oriented towards the enhancement of the Mauriziano’s spaces, consists of two technological stations. The first involves user interaction with a wide multitouch screen to consult content relating to the building and its history. The second increases the accessibility of the stately apartments, separated from the rest of the building by a narrow flight of steps, through the disposition in the antecedent rooms of VR headsets for a 360° view of the spaces and their recently restored frescoes.

2 The state of the art

From an analysis of the state of the art on resources afferent to three different categories (i.e. Digital projects for the enhancement of cultural heritage designed for a children audience [5]; Digital projects for the enhancement of the literary heritage [3], [4]; Digital projects dedicated to the Ariosto and the *Orlando Furioso* [2]), the main criticality that emerges can be identified in the difficulty in creating a cultural language to efficiently communicate to young generations not only the didactic but also the emotional aspects of cultural heritage.

Learning-oriented digital projects have shown the attitude to still adopt communication strategies based on a hand-bookish idea of didactics, favoring teaching methods that often neglect the aesthetic and emotional aspects of learning. Contents are provided to users in the form of atomic teaching units and information sheets [3] which, although realized in multimedia formats, are unable to fully realize the experiential immersion to which they aspire.

Moreover, digital interfaces are frequently simplified with respect to the original artworks both from a linguistic and iconographic perspective. Literary texts are reduced in a qualitative as well as a quantitative sense; while GUIs are reworked in graphic and ‘cartoonized’ versions [5]. In cases in which the deformation of the original work prevents users from observing the artistic features, this choice generates not only a trivialization but a real mystification in the transmission of knowledge. A different perspective is offered by projects that consider the graphical apparatus as an integral part of the work and fundamental for the reception of contents by the final user [2]. Similarly, digital interfaces, as places where users concretely take contact with the artwork, need to be designed for returning a form consistent with the original message.

3 Furiose Interazioni’s experience design

In order to overcome the aforementioned criticalities, Furiose Interazioni has adopted design strategies based on the intersection and mutual support of three different levels:

- the theoretical level aimed at maintaining the historical-philological bond with the authenticity of the text and its receptive modalities;
- the technological level focused on finding the most suitable means for the specific audience;
- the level of interaction, oriented towards enhancing the artistic experience and the learning through play and wonder.

3.1 UX design based on *serio ludere*

Starting from the recovery of studying as *serio ludere*, both paths have been designed to transmit knowledge through immersive and sensorial experiences. The user study has taken into consideration not only the physical-motor and psychocognitive but also the socio-emotional needs of the audience [6], thus resulting in actively involving users within a shared learning experience in dedicated spaces. On these bases, the reference technologies have been selected favoring those that allow simultaneous use by multiple users and can generate wonder and surprise during the interaction. The final result is a flow that takes the form, at the station and overall path level, of an experience in which users learn by playing, interacting firsthand with the cultural elements, collaborating with peers, and experiencing the possibility to access, through technology, to imaginary or inaccessible spaces.

UI design based on the philological recovery of the original work The workstations’ digital interfaces are the result of a great deal of philological recovery of original materials from literary, bibliographic, and museum sources [7], [8], [9], [10]. From the linguistic point of view, the authors have modeled the paths’ storytelling on an “Ariosto-like” language that reuses as much verbal material

from the poem as possible and transmits to the public not only the conceptual message of the *Furioso*, but also the literariness of the composition, even though in a register and vocabulary tailored to children. From the iconographic point of view, the GUIs have been realized with historical images recovered from the centuries-old tradition of artistic reception of the poem. The visual heterogeneity of the final product is itself representative of the different forms in which the work has been translated throughout time and which constitute an important part of the history of the reception of the *Furioso*.

3.2 Results

First results from evaluation tests conducted as part of an unpublished master's degree thesis discussed at the University of Bologna, aimed at evaluating the experience in terms of usability, learning, and fun, demonstrate not only that interfaces are appreciated even when far from the usual kid's references, but also that the employed language stimulates children to learn new terms and concepts. Additionally, the active involvement of multiple users in the learning process increases the enjoyment as well as the comprehension of the experience.

Although still in an experimental phase, *Furiose Interazioni* thus outlines a possible approach to deal with the current need in the digital humanities to transmit the authenticity of cultural products while respecting the exigencies of communication of an ever wider and differentiated public.

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