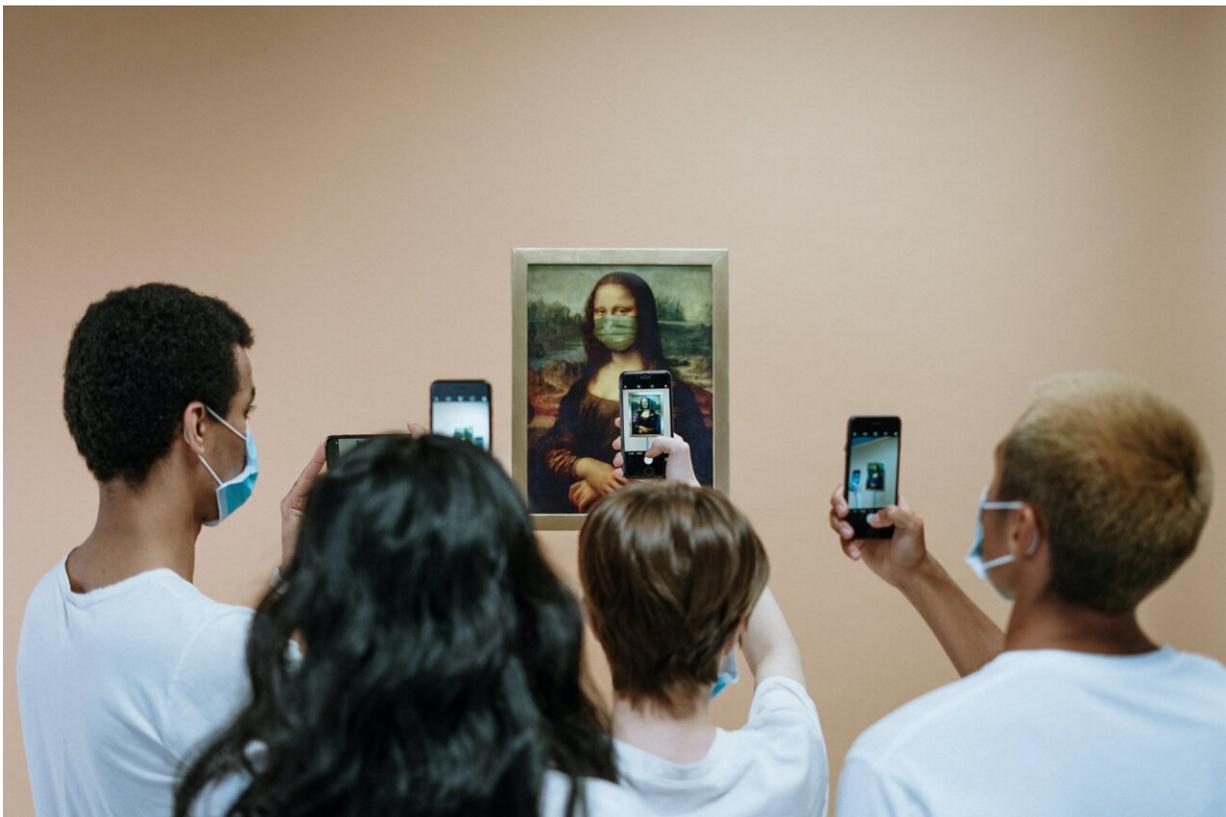# Teenagers want interactive technology in museums, research finds

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Credit: Pexels/Cottonbro Studio

New research from the Interactive Technologies Institute (ITI) in Portugal has revealed that teenagers are not big fans of museums but are keen on interactive technology during their visits. Working with the

Natural History Museum of Funchal, the research team conducted participatory design sessions with 155 teens aged 15 to 19, to better understand what would make for a great museum experience for them.

The results showed that the teens were excited about interactive technology. Based on the feedback, the ITI built two different interactive mobile experiences, one game-based and the other narrative-based. The team found that while most teens prefer a story-based approach, those with more competitive approaches engage more with game-based methods. The research shows that gamification and storytelling are closely related and that teens are drawn to being the main character in an exciting adventure.

Over time, museums shifted from purely displaying artifacts to actively engaging with visitors. Extensive debate and research have been developed to transform museums into visitor-centered institutions, considering the needs and desires of their visitors when organizing and displaying exhibitions.

However, museum visitors have multiple needs, ages, cultural backgrounds, financial situations, education levels, etc., which makes it challenging to have a one-size-fits-all strategy. For that reason, museums have been conducting research to better engage with their younger audiences, implementing more and more technological features in their spaces.

"We have identified a lack of research studies concerning museological content tailored to teenagers in the Interactive Design field," says Vanessa Cesário, a doctoral researcher in Digital Media focusing her work on audience interaction in museums. Vanessa has been researching at the Interactive Technologies Institute (ITI) and teaching Technology and Society courses at Instituto Superior Técnico (IST) in Portugal. She partnered with the Natural History Museum of Funchal to study how the

Museum could better engage teenagers, a work supervised by Valentina Nisi, Professor and researcher at the ITI.

"We wanted teenagers to help us understand what a great museum experience for them would be, which led us to conduct participatory design sessions with 155 volunteers from 15 to 19 years old," she adds. The goal was to develop a mobile app to complement the museum visit. As teenagers widely use technology, it became apparent that the solution to foster their engagement in museums would have to be technology-based.

"The Museum of Natural History of Funchal can not ignore the technological tools the teenagers use to access information," says Ricardo Araújo, Museum Director. "We want to meet the expectations of new generations by using technology to convey knowledge, shifting from the traditional exhibits of other times." Both researchers and the museum staff agreed upon a strategy to study the issue.

Teenagers are not into museums

The first design workshops resulted in concepts for interactive experiences on mobile devices for the Natural History Museum of Funchal. "By this time, teenagers were already part of the research. They were the informants from whom we gathered data about their preferences," says Vanessa.

It became evident in these sessions that teenagers were not fans of museums. "On the one hand, our participants characterized museums as boring places. On the other hand, they were quite excited about having interactive technology guide them through the Museum's exhibitions," says the researcher.

She later categorized the teenagers' input into two themes: game

mechanics and narratives. Most groups proposed gamification experiences as those they would like to experience in a museum. A small portion did focus on history, concentrating more on building an adventurous plot. However, museums are not yet run by their visitors. They were missing the contribution of a fundamental piece of the puzzle.

What do museum curators have to say?

Vanessa has also reached out to Cultural Management students—the museum curators of tomorrow—asking them to design an experience targeting teenagers' preferences. She compared the proposals of the teenagers and future curators to assess if the latter would be prepared to create meaningful and enjoyable museum experiences for teenagers.

"Future curators believe that the key to providing an enjoyable experience for young people is through storytelling and narrative. On the other hand, teenagers find the incorporation of game mechanics to be the most appealing aspect of a museum visit," says Vanessa. With feedback from young visitors and curators, it was finally time to work on two solutions.

Games versus stories

Based on the feedback from teenagers and curators, the Interactive Technologies Institute built two different interactive mobile experiences to be employed at the Natural History Museum of Funchal. "We created two prototypes, one game-based and the other narrative-based. The first was a location-based game which guided the visitors throughout the Museum by helping a pleading character unravel hidden mysteries. In the second, visitors had to explore the Museum to keep unlocking more story fragments," says Vanessa Cesário.

She and her team studied whether teenagers' personalities impacted their engagement levels when using the two apps. They found that teenagers motivated by competition usually enjoy game-oriented approaches. Those who take their time to understand the experience and are amazed by the details want both systems. Finally, the teenagers who are willing to listen and are intrigued by the plot and those who show signs of anxiety and worry about their performance prefer story-based approaches. In summary, most teenagers prefer a story, except for the most competitive ones, who engage more with game-based methods.

The research project has reached its last phase from the knowledge gathered over the years. "Our studies show that gamification and storytelling are closely related. Teenagers are particularly drawn to being the main character in an exciting adventure, and a captivating and emotional journey can enhance their engagement with the museum experience," says Vanessa.

People change over time. Not just people but the way we eat, the way we work, the music we listen to, and even the way we connect with our surroundings. It's only natural that new generations want to feel heard and experience the culture the way they enjoy the most. The trick seems to be including them in the process and bringing museums to the 21st century.

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