Research Article

The Innovation of Virtual Tour of Malang State University Learning Museum as an Alternative for Educational Tourism in the Disruptive Era

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Abstract.

Advances in technology and information have become a stimulus for life changes, including digitalization and the internet of things. These two things linearly then motivate researchers to present an innovation virtual museum tour. The aim of the researcher is to present this innovation to assist in the process of developing educational tourism in Indonesia, especially for the UM Learning Museum. In addition, this innovation is also carried out with the aim of bringing the museum closer as one of the media for inheriting culture to the community through the help of advances in technology and information. The virtual tour innovation is also carried out with the aim of stimulating the development of innovation through enriching essence and behavioral intention. In order to facilitate efforts to achieve these goals, the research and development method from Borg and Gall has been modified. Through this method, it was found that the virtual tour innovation of the UM Learning Museum has many benefits for visitors, such as the experience of exploring independently and interactively. Other benefits obtained from the virtual tour of the UM Learning Museum include getting new information and knowledge and developing behavioral intentions to support the existence of the UM Learning Museum for the community.

Keywords: learning media, innovation, virtual tour, UM Learning Museum

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1. INTRODUCTION

Advances in technology and information have had a considerable impact, namely the emergence of disruption as a new paradigm in human life [1] [2]. The emergence of a linear disruption paradigm has become a trigger for changes in aspects of human life, one of which is digitalization. Nowadays, digitization is very important because it can eliminate the boundaries of space and time [3]. This reality can be observed from various fields of human life that have begun to be digitized, one of which is the digitization of museums.

So far, not many museums have digitized, even though access to this technology is relatively easy. Moreover, the potential of museum digitization can help stabilize museums after facing the Covid-19 pandemic [4] [5]. If this phenomenon is not followed

up immediately, it is feared that it could affect the existence of the museum as a means of cultural inheritance. These problems and phenomena in particular then become a special concern for researchers.

Researchers in this case are worried about the existence of the Malang State University Learning Museum which has important collections for the world of education in Indonesia. The UM Learning Museum can also be stated as one of the museums that has a collection of various educational and learning innovations from time to time [6]. Based on this information, it can be concluded that the UM Learning Museum is very important for the world of education in Indonesia, so its existence must be maintained. By considering the urgency, conditions, and various problems that arose, the researcher was then motivated to digitize the UM Learning Museum.

The digitization of the UM Learning Museum is carried out by creating a virtual museum tour innovation. This innovation was developed with the help of 3600 virtual media technology which allows users to access information about museums without any limitations of space or time [7]. In addition, with 3600 virtual media users can be presented with information about the museum and its collections in real time so that the information obtained becomes more concrete [8].

Various advantages offered by virtual media 3600 in an effort to digitize the UM Learning Museum in a linear manner can improve the quality of educational tourism. In addition, the digitalization effort can also have an impact on increasing public interest in conducting educational tourism. Moreover, the UM Learning Museum which has been digitized can be used as an enrichment for the implementation of lectures at the tertiary level [9].

The digitalization of museums in the form of virtual tours has generally been studied in several research articles. However, almost all of them are oriented towards the existence of museums in the tourism sector, so their educational purposes have not been displayed. This can be observed from previous research written by Achyarsyah, et al., (2020) [10]. In the article, virtual tours are used as a strategy to increase visits to tourists only and have not prioritized educational content. In the second previous study written by Wulandari, et al., (2021) [5], virtual tours were used as an alternative solution in emergencies such as the Covid-19 pandemic and had not been used as a long-term program.

Other previous studies that have used virtual museum tours are the work of Kersten et al., [11] and Podzharaya & Sochenkova, (2018) [12]. Both studies focus more on the use of technology as a means to increase tourist interest and visits, which tend towards the commercialization of information. Based on the description of the problem, alternative

solutions, benefits, and novelty obtained from previous research, it can be concluded that the virtual tour of the UM Learning Museum is very important to do. The aim is to bring innovation and modernize the museum so that the information is useful for the world of education, especially as an enrichment for lectures at the university level.

2. METHOD

The digitization of the UM Learning Museum was carried out using a modified research and development method from Borg and Gall. The chosen method aims to develop and validate digital virtual tour products for the UM Learning Museum [13]. Through the use of these methods, in carrying out research, it is required to systematically carry out several stages of research. Some of the stages of the research referred to include the following (see Figure. 1).
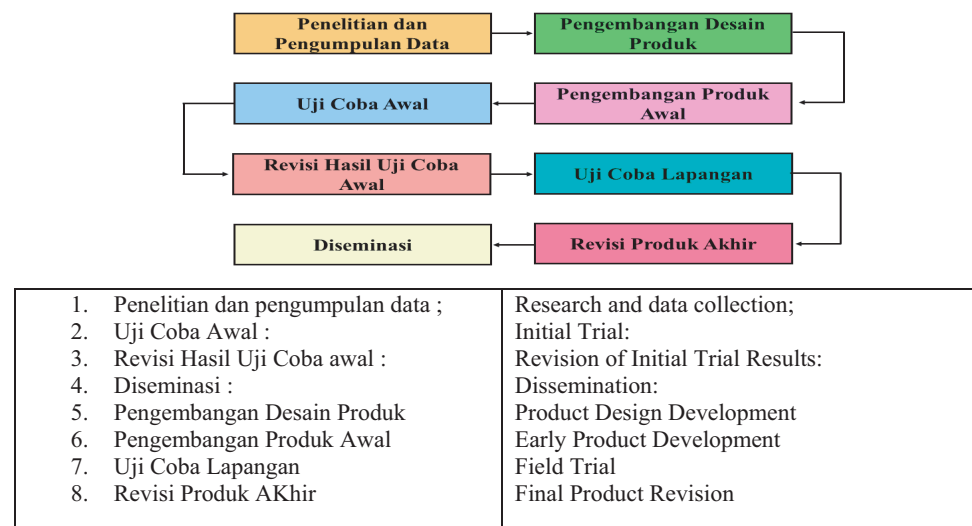

1. Penelitian dan pengumpulan data ;	Research and data collection;
2. Uji Coba Awal :	Initial Trial:
3. Revisi Hasil Uji Coba awal :	Revision of Initial Trial Results:
4. Diseminasi :	Dissemination:
5. Pengembangan Desain Produk	Product Design Development
6. Pengembangan Produk Awal	Early Product Development
7. Uji Coba Lapangan	Field Trial
8. Revisi Produk AKhir	Final Product Revision

Figure 1: Research Flow.

3. RESULT AND DISCUSSION

3.1. Museum Pembelajaran Universitas Negeri Malang

The UM Learning Museum is one of the innovative products that was presented by the State University of Malang. The museum was established as a product of the historical awareness of the academic community of the State University of Malang. In addition, the UM Museum was also established with the aim of preserving, preserving, and preserving several historical relics from the early period (PTPG). From the presence of

this awareness, on October 18 2018, the UM Learning Museum was officially approved by the Chancellor of the State University of Malang (Sapto et al., 2020).

The UM Learning Museum is located on Semarang Street number 5, Malang City. Specifically, the UM Learning Museum building occupies the former rectorate building of FKIP Universitas Airlangga (FKIP UNAIR) Malang branch [14]. Before being used as a museum building, the building was previously used for PPG English Literature activities and the Islamic Development Bank (IsDB) Project office [14].

After the inauguration of the UM Learning Museum, the building was then functioned as a museum building which was managed and displayed with the theme "Learning Innovation". This can be observed in the management of the showroom and its collections starting from the "UM History Room". The collection room contains the historical timeline of State University of Malang which is equipped with audio features to convey information in auditive form [14]. After the room, the "UM Chancellor's Room" is displayed containing information on UM rectors from time to time as well as some collectibles related to the rectors [14].

The next rooms displayed at the UM Learning Museum include the "UM Inscription Room" and the UM Profile Room. The two rooms contain the establishment decree, logo, and profiles of campus graduates from time to time. Furthermore, there is the "UM Figure Room" which contains several figures from the State University of Malang with various works and innovations for learning in Indonesia. The next room that can be found is the "Media Room and Learning Resources" and "Audio Visual Room" which contains a variety of innovative learning equipment. The last room at the UM Learning Museum is the "Future UM Room" [14].

3.2. Digitizing the Malang State University Learning Museum

Advances in technology and information have had a considerable impact on human life. Some of the impacts that can be felt very clearly are the emergence of the paradigm of disruption and the internet of things [15][16]. Through the disruption paradigm, everything is developed and digitized with the aim of facilitating human efforts to meet their needs. Meanwhile, through the internet of things, most aspects of human life depend on the internet network.

The manifestation of the increasingly strong disruption paradigm and the internet of things in human life can be found in the field of educational tourism. Several important components in educational tourism, namely learning, rewarding, enriching, and adventuring must now be combined with digital technology [9]. On the one hand, this

combination can provide several benefits for the community, especially tourists. First, in terms of learning, the presence of technology can provide choices for visitors to get the information they want. With the variety of means for visitors to get information, psychologically it can increase their interest and motivation so that linearly it will bring up the desire to visit the museum [17].

The second benefit, in terms of rewarding, can be seen from the impact of social media after visiting several tourist destinations, especially educational tourism. The impact in question is the award and appreciation from the viewer. Awards and appreciation can also be obtained from the management through decoration, collection arrangement, service, and giving certificates for visiting the destination by presenting documentation of their visit to official social media accounts [18]. The next benefit from the enriching and adventuring side can be presented by providing updated information, additional information, and new experiences to visitors through official social media or through digital products related to a destination [9].

Based on some of the benefits that have been mentioned, this combination can be used as a basis for digitizing the UM Learning Museum. So far, the UM Learning Museum has presented several innovations including augmented reality museums, 3D holograms, interactive games based on Flash Media, video profiles, and various other innovations that support visitor interaction activities with museums (Sapto, et al., 2020). Even though it already has several innovative products, the UM Learning Museum needs to continue to innovate and keep up with the developments and challenges of the times. Following up on these conditions, the researchers developed a virtual tour of the UM Learning Museum based on 3600 digital media (see Figure 2).

Figure 2: UM Learning Museum Virtual Tour Products.

The virtual tour product of the UM Learning Museum which was developed through 3600 digital media can be stated to fulfill the four essences of educational tourism. From the learning aspect, the technology is able to present variations in the appearance of information and services through a virtual environment. Through this virtual environment, visitors can enjoy information about the UM Learning Museum in real time only through a smartphone. In addition, in this virtual environment, users can interactively move, move, and rotate viewpoints in various directions up to 3600 (see Fig. 3) [19][20].

Figure 3: Flowchart of User Interaction with the Product.

The UM Learning Museum Virtual Tour which was developed through 3600 digital media can also be declared to have fulfilled the essence of rewarding. This essence is obtained by visitors through the decoration and arrangement of the collection which is digitized through 3600, so that visitors have access to view from various points of view as well as zoom in and zoom out on the digital display. In addition, visitors also have full control over the essence of adventure in the virtual tour of the UM Learning Museum so that the process of knowledge construction and recalling memory becomes easier [21]. This is because the virtual tour product of the UM Learning Museum was developed into an interactive digital media, so that visitors have full control to gain experience and knowledge from the product.

The enriching essence in educational tourism can also be fulfilled by the UM Learning Museum virtual tour product which was developed through digital media 3600. The essence can be felt by users through the experience of exploring, reconstructing, or deconstructing information independently. Some of these experiences are obtained by visitors through additional information embedded in several collections. In addition, through several innovative collections and collections that cannot be found in other museums, visitors get the experience of exploring, reconstructing, and deconstructing information independently. The logical consequence of the presence of these three

experiences can stimulate the development of reflective abilities and historical awareness [22].

The UM Learning Museum's virtual tour innovation through digital media 3600 in terms of accelerating development and tourism development also has huge opportunities. This can be found in the use of the same technology in other tourist attractions. In a study written by Firmansyahrini, et al., (2021) [23], for example, the use of digital media 3600 provides benefits in the form of a 32% increase in the number of visitors. Meanwhile, in a study conducted by Sobarna (2021) [24], it was found that the use of digital media 3600 in educational tourism can increase behavioral intention. Through the high behavioral intention, it will directly lead to psychological conditions such as getting travel satisfaction. Through these conditions, it can also indirectly affect the user's psychology to generate the desire, interest, and enthusiasm to visit directly to tourist sites that have been digitized.

The logical consequences obtained from the high behavioral intention also affect the motivation in the minds of every visitor. The applicative form of the motivation that appears cannot be directed to produce various positive activities. First, it is directed to produce innovations that are useful for life through the appearance of a virtual environment from the "UM's Character Room" and "Media Room and Learning Resources". Second, visitors can also be directed to pursue every area of life that is mastered. These activities have a linear impact on improving the quality of human resources in Indonesia [24](Sobrana, 2021).

The presence of an impact that is indirectly related to the economy and welfare, of course, can be used as an argument about the importance of these innovations. From the perspective of the creative economy, especially tourism promotion, the virtual tour of the UM Learning Museum through digital media 3600 can be used as a means to get the attention of the adolescent community. This is because the product presents a contemporary look so that it is closer to the community, especially from the teenage age group. The magnitude of the potential in terms of digital promotion to the public, especially in the adolescent age group using modern technology, can be found in the results of research from Fatimah & Riyadi (2021) [25]. In this study, high school students in Gresik experienced an increase in behavioral intention by 87%. Almost the same condition can also be found in the work of Padmasari (2021)[26] , with high behavior intention towards historical heritage (see the presentation in table 1).

TABLE 1: The Percentage of Increased Behavior Intention from Using Virtual Tour Media Based on Several Researches.

Researcher/Developer	Product	Persentage (%)
Alkurnia Rohmatul Fatimah dan Riyadi	*3D Virtual Tour*	87%
Ayung Candra Padmasari	*3D Virtual Gallery* dan *Panoramic Photo*	81,7%

4. CONCLUSION

Provide a statement that what is expected, as stated in the "INTRODUCTION" section can ultimately result in "RESULTS AND DISCUSSION" section, so there is compatibility. Moreover, it can also be added the prospect of the development of research results and application prospects of further studies into the next (based on result and discussion).

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