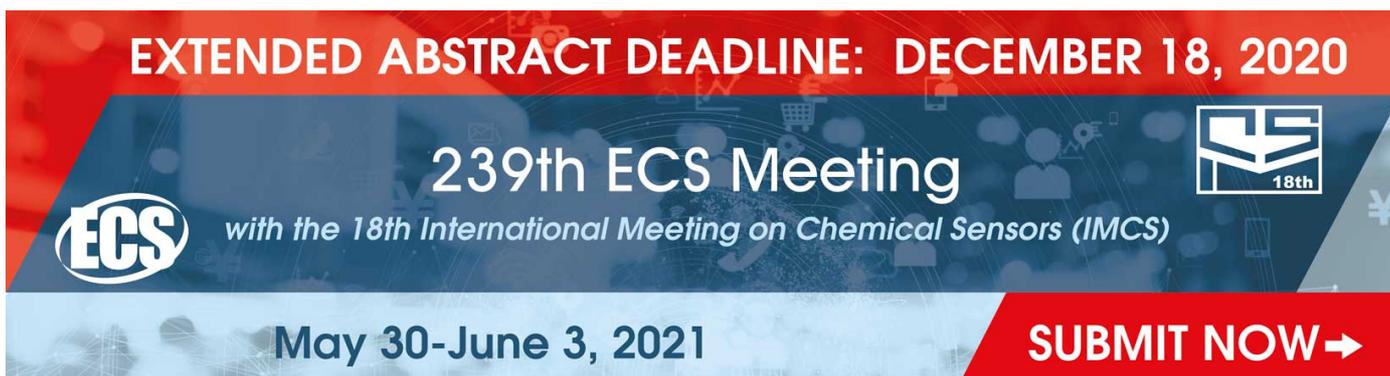


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The Development of Popular Music Heritage: exploring an AR exhibition

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Abstract. This paper explores the relationship between digital technologies and preservation of popular music heritage and focuses on the AR exhibition, David Bowie Is. Through the lens of discourse analysis, it discusses the interpretation of the popular music and its various digital narratives, the authenticity of user experiences, and how museum functions can be promoted by virtual exhibitions. It provides multiple narratives to tell Bowie's untold stories and experiments on music, stage, and costumes that questioned gender and social norms. It creates authentic experiences for the audience through offering augmented information on exhibits that arouse the audience's emotions and trigger their memories. The AR exhibition can also help to promote the museum's functions due to access without boundaries, digital preservation and enhancing the museum's educational role. The paper suggests that this AR exhibition offers new ways for museums to preserve popular music and different experiences of listening with potential commercial value.

1. Introduction

Digital technology offers opportunities for contemporary museums to develop the concept of museums without walls and maintain different types of heritage. Musical heritage has been recognised as an important cultural treasure and popular music as one of the music genres since it has an impact on people's lives, and it shapes generations' cultural memory, identity, and history [1]. Some museums regard popular music as heritage indeed and special exhibitions have been held to preserve popular music [2]. Popular culture and music can deepen people's emotion, memories, and lives since they are embedded with the cultural and social development and history of the humankind [3].



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As part of digital technologies, we focus on augmented reality (AR), a technique combining computer-generated information and real environment, where users can interact with and change the virtual environment accordingly. Museums have been applying AR in learning and exhibitions, through mobile devices with main features being pervasiveness, participation, and personalisation [4]. AR can help to overcome museum fatigue and prolong visitors' experiences with multiple media content [5]. It also changes the concept of a singular visit constrained by time and space to numerous, ubiquitous visits with anywhere, anytime access. A variety of visually attractive virtual objects can also improve the audience's attention to exhibitions for longer.

In order to explore the relationship between digital technologies and preservation of popular music heritage, this paper focuses on an AR virtual exhibition to discuss the interpretation of the popular music and its various digital narratives, the authenticity of experiences, and if the new digital functions are still able to promote museum functions. It suggests that this AR exhibition offers new ways for museums to preserve popular music and different experiences of listening with potential commercial value.

2. Setting the scene

2.1. Interpretation of Popular Music

Regarding interpretation of popular music, Reynolds [6] argued that music is intangible and thus could not be displayed in a museum or it would lose its value. However, it is not easy to understand the stories of music without tangible objects [7]. The interpretation of music cannot only focus on its own essence but its influence on social development and people's daily lives [8]. Besides, museums have been looking for appropriate methods to exhibit sound and maintain a museum environment for people to 'see' audio exhibits. Sound bleed, for example, is a crucial problem for music museums that play pieces of music side by side [6]. Headphones or individual rooms avoid sound bleeding, but they isolate the audience and weaken the social aspect of popular music that is for everyone to feel and share [7]. Therefore, museums have to set their purposes and then choose appropriate mediums to display aspects of popular music such as social, cultural, economic developments and influence on people's daily lives.

2.2. Authenticity

Popular music challenges museums' traditional notions of authenticity which focus on objects' originality and artworks claimed by artists. In terms of preservation and conservation, museums take authenticity seriously through provenance checks and cataloguing [9]. Besides, the audience expects to see 'real' things in exhibitions, since museums are regarded as authorities of cultural materials explaining collections' values and determining the selection and interpretation of the collections. Reproduction, however, is essential for popular music since it allows popular music to be spread, preserved, and listened to by people repeatedly. Therefore, what is authenticity needs to be revised.

On the other hand, museums often use replicas, dioramas, and models to convey their messages for financial, conservational and educational reasons. Even if these representations are 'copies' of the originals, when the audience interacts with them, their experiences are authentic. Therefore, authenticity

in museums is not only about the object itself but also about the visitor's experiences [9]. The audience, for example, cannot return to the historical moment of the live concert, the particular time and space to encounter the authentic atmosphere. The 'authentic' atmosphere is therefore *curated* since visitors can only interact with reproduced objects, including footages, and records [8]. It is an authentic experience when people can get the feeling, recover memories, and share stories or experiences to the people accompanied to exhibitions. To curate popular music, museum curators should break free of a single interpretation narrative and provide multiple versions of popular music by engaging visitors to connect their stories and collective memories [10]. The shift of popular music narrative from object-oriented to audience-oriented leads to an emphasis on authentic experiences. Although it is important to provide authentic objects, creating authentic experiences to connect the audience's memories and emotions is also important. Popular music exhibitions can trigger individual and collective memories, bringing new encounters to the audience through various narratives and interactions. Therefore, creating an authentic experience for the audience in popular music exhibitions is a trend to preserve music heritage.

Authentic experiences challenge the relationship between virtuality and reality. Virtuality is not the opposite of reality. Digital museums and virtual exhibitions are more than reproductions and can contextualise objects through narratives and links [11]. Real objects have their value but their digital versions can deliver supplementary explanations or augmented contexts which are valued by visitors. Such virtual content acts as a catalyst for authentic experiences since it can safeguard and preserve fragile cultural artefacts, it can offer different materials to support learning, and create edutainment in heritage tourism [12]. The augmented content made by digital media does not need to be accurately reconstructed, which transfers the object-related interpretation towards the need for entertainment. Therefore, when the audience interacts with the exhibits' virtual content together with the understanding gained from it, they live new experiences.

3. Case Study: AR Exhibition *David Bowie Is*

The case study is the *David Bowie Is*, an AR exhibition which was launched on 7th January 2019 for mobile devices. This exhibition keeps the original context based on the exhibition in 2013, and displays new extra content. It combines the advantages of AR, mobile technology and supports the interpretation of the intangible nature of music and material collections by creating new experiences for the audience.

In particular, the original *David Bowie Is* exhibition made its debut at the Victoria & Albert Museum, London in March 2013 and curated by Victoria Broackes and Geoffrey Marsh. It then toured the world for five years. This exhibition did not follow the traditional pattern of organising music exhibitions; instead, it contained the cultural and social context of the music through collections, and videos, interpreting British singer David Bowie's life and contribution to popular music. This exhibition aimed to provide a different, holistic account of the artist, aiming to inspire the audience's imagination and creativity [13]. The exhibition displayed near 400 objects including Bowie's drawing, handwritten lyrics sheets, costumes, photographs, videos, and objects. It was designed thematically to show the early

influence of Bowie's life, the cultural influences from science fiction and pop art, his iconic music pieces and characters, including Ziggy Stardust, collaboration with designers like Alexander McQueen, and live performances. The exhibition offered the audience Sennheiser's location-aware headphones, so they could hear music depending on where they stood in the rooms, creating an immersive experience.

The AR exhibition *David Bowie Is* is a commodity app, a production of Sony Music Entertainment, for Android and iOS. It is produced by the David Bowie Archive, Sony Music Entertainment (Japan) Inc., and Planeta studio. The AR exhibition is an adaptation of the original exhibition since it is still interpreted by the two V&A curators, but Planeta studio adapted the physical collection into digital content (with the supervision of the David Bowie Archive).

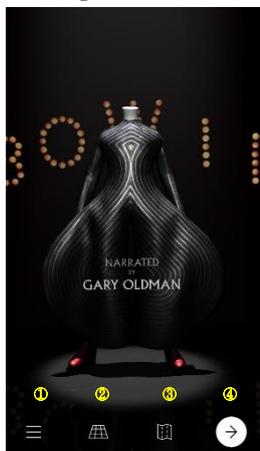


Figure 1. Interface

- ① Settings ② Recalibrate
- ③ Map ④ Next step

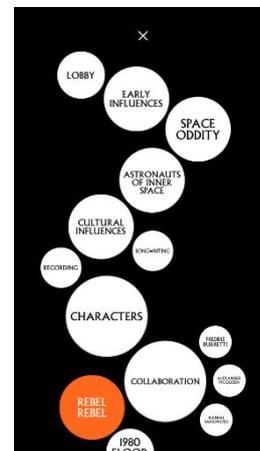


Figure 2. Map



Figure 3. A screenshot of the AR exhibition

3.1 *The interactive elements of the app*

To visit the AR exhibition, users need to view the virtual world on their mobile display and to wear headphones. They can interact with digital content on the screen by moving their fingers. The interface has four basic functions: settings, recalibrate, map and next step (Figure 1). There are 25 rooms in total composing the whole AR exhibition. There are two ways to navigate the rooms: through the storyline, progressively or at any order through the digital map (Figure 2).

There is not much text in the AR exhibition, only topic titles, subtitles and panels of the collections

are textual. Narration replaces the function of main theme panels of the original exhibition. The choice of the narrator is significant, aiming to narrow the distance between Bowie and the audience. The narrator, the actor Gary Oldman and Bowie's close friend, gives a personal feel to the narration.

The AR exhibition deploys various media, like photographs, drawing, lyrics, and videos, aiming to accommodate the artists' variety of outputs (Figure 3). It offers good quality images which can be rotated in 360-degree, zoomed in or out, allowing the audience to take an in-depth look at the collections. The app allows users to move and change the size of virtual objects by moving mobiles, which shows an AR's feature that is physical space has a relational position to augmented content.

3.2 Method

In order to analyse the AR exhibition *David Bowie Is*, this paper deploys discourse analysis to understand how the knowledge and context of the AR exhibition are constructed in textual, visual and spatial languages. Discourse analysis helps to understand narratives in specific situations and analyse the use of language in relation to its social, political and historical context [14]. Therefore, this method is suitable to analyse how narratives are constructed to produce this exhibition's objectives.

4. Discussion

4.1. Interpretation of popular music objects

This AR exhibition can be inspirational for popular music heritage because of the breadth on offer. A combination of the multimedia including audio, video, live footage and photographs creates an immersive experience. It needs less text and more visual language, which is in line with documented audience preferences [15]. Besides, the variety of visual attractiveness prolongs the audience's attention to the exhibition and helps users to overcome museums fatigue. Unlike real visit situations where the audience has to see the whole exhibition in one go, the AR audience has control over the time to view exhibits and how many times to access the exhibition without limitations of time and space.

The exhibition presents the development of Bowie's music from the early time, folk-rock, Glam Rock, electronic and experimental music, and jazz, showing Bowie's influence on the music world. His experiments in music style brought fresh ideas in pop music. The AR exhibition as a digital platform can preserve the real exhibition and extend it according to Bowie's particulars. For example, 'Space Oddity' is designed following the iconic song, which describes Major Tom, an astronaut ready to return home from the outer space. In this room, the background is the outer space; the middle scene is the Earth. These visuals change users' perspective to Major Tom's viewpoints, allowing them to connect the song to the moon landing, a significant event at the time.

The exhibition delivers the narrative that 'David Bowie showed us that we could be who we wanted to be' [16]. The theme 'Characters' focuses on how Bowie created different personas blurring binary sexuality. In particular, 'Astronauts of Inner Space' and 'Rebel Rebel' refer to Bowie's experiments on music, stage, and costumes to question gender and social norms in the 70s. 'Ziggy Stardust' focuses on Bowie's signature character and how Ziggy Stardust developed his rise and fall in Glam Rock. His

avant-garde, quirky, non-binary make-up and costumes challenged the conventional norms and open a door for his fans and the public to face gender and identity differences. Bowie's interest in a confrontation with society's expectation and exploration of sexual identity has inspired many people to accept their differences and influenced the next generations in music, art, and fashion industry. The AR exhibition; therefore, shows not only the material collections but the impact of Bowie on the social and cultural developments at his time.

The AR exhibition can also provide multiple narratives to tell Bowie's untold stories with various media. For example, the room 'Hunger City' shows Bowie's unrealised film through drawing and other visuals. In the middle of the screen, there is a film screen filled with Bowie's drawing of Hunger City which users can flip over. Users can enter Hunger City as residents, and able to see more designs and drawing after flipping through the drawing. The AR exhibition, therefore, uses multiple media to show layered design and different narratives by shifting videos, images, and ways of seeing.

This app is like an exhibition archive, a hub for those who want to know more about Bowie and his life. It shows Bowie's private objects and art collections which are in both V&A's and the David Bowie's Archive. Some objects would have stayed in collections rooms if the AR exhibition did not show them. Thanks to the V&A supervision, this app can also help research on the development of popular music in the 20th century with valuable references.

4.2. Authenticity of experience

Authenticity of the AR exhibition will be discussed in terms of virtual content and musical experience. The AR collections are digital representations of the original objects carrying augmented information to users. It provides, for example, an opportunity to read the lyric manuscripts while listening to the song or gaining an understanding of the cultural and social developments of the time. For example, the theme 'Black and White Years' in the AR exhibition refers to how Berlin's new music and culture had an impact on Bowie and inspired him to write songs about life in Berlin.

The AR exhibition creates an authentic musical experience for the audience. The music displayed in the AR exhibition has similar functions in museums in terms of arousing the audience's emotions and triggering their individual memories. They can resonate their collective memories of Bowie's time and then generate new experiences and memories during the AR interactions. Visitors of the virtual exhibition can encounter authentic experiences through, for example, 'Live' which is a theme of live footage of Bowie's acclaimed live performances. With a big screen and immersive sounds, the audience can gain an authentic experience to feel what happened at the event and spark old and new emotions.

4.3. Museum Functions

The AR exhibition responds to the V&A's mission and values about access, augmented information, and preservative techniques. The AR exhibition contributes to the museum's educational role, applying digital technologies to create interactive experiences. This AR exhibition's access without boundaries enables everyone to use it, from all over the world, anytime. This breaks the limitation of the physical

museums' opening times and locations. Besides, it can extend the exhibition provision with augmented information on private or fragile collections which have not been displayed in public before. Through the multiple narratives, and the connections to social issues of the time, the AR exhibition contributes to the museum's educational and research values, telling a story around popular music and culture in the mid-20th century until now.

4.4. Possibility of Popular Music Heritage

It is necessary to discuss the commercial aspect of this technology, since this AR exhibition is a commercial product. If museums have a similar app to sell, it is like tickets of the exhibition. An AR exhibition is more like a souvenir or supplement of the 2013 exhibition rather than a competitor, because it does not replace the original exhibition but instead expands the audience's experience.

This AR exhibition could open a new communication means for the popular music industry. The development of the music industry has been changed with different media from physical recordings to digital downloads [17]. Moreover, the streaming services such as Spotify or iTunes make a breakthrough in the industry, and users can listen to songs in the database for as long as they subscribe the streaming services. This shift changes the way of people's habit of listening to music and the marketing of music brand companies [18]. This AR app can be seen as a commodity as people buy the productions of popular music such as albums, cassettes or vinyl. The AR app *David Bowie Is* has developed different, more informative experiences of listening to music, offering new methods to preserve and distribute popular music heritage to the public.

5. Conclusion

The AR exhibition *David Bowie Is* can be an inspiration for the preservation of popular music and culture heritage. It helps preserve popular music to the next generation and innovates the current trend of listening to music. By interweaving the real and virtual world and embracing visitors' emotions and memories, it allows for multiple interpretations. It provides multiple narratives to tell Bowie's untold stories and experiments on music, stage, and costumes that questioned gender and social norms in the 70s. The interaction creates authentic experiences for the audience even if they interact with non-real but existing objects in the virtual world. The digital exhibits are authentic in their ways to reflect the originality and offer augmented information to present their values. The AR exhibition can also help to promote the museum's functions due to access without boundaries, digital preservation and enhancing the museum's educational role. For future studies to fill the gap of this research, visitor studies and evaluation are essential to be conducted to make a comprehensive understanding of the AR exhibition and the various possibilities of popular music exhibitions.

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